Volume 2:
Appendices to the Draft Environmental Impact Report/ Environmental Impact Statement

Freeport Regional Water Project

State Clearinghouse No. 2002032132

July 2003

U.S. Department of the Interior
Bureau of Reclamation

FREEPORT
REGIONAL WATER AUTHORITY

Sacramento County Water Agency
East Bay Municipal Utility District

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East Bay Municipal Utility District

Water Supply Reliability

Freeport Regional Water Authority
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Acronyms and Abbreviations

Act	California Urban Water Management Planning Act
af	acre-feet
BMP	best management practice
Board	EBMUD Board of Directors
CFP	Central Valley Project
DFG	California Department of Fish and Game
EBMUD	East Bay Municipal Utility District
FERC	Federal Energy Regulatory Commission
JSA	Joint Settlement Agreement
MCE	maximum credible earthquake
MGD	million gallons per day
MOU	memorandum of understanding
NRWRP	North Richmond Water Reclamation Plant
SWRCB	State Water Resources Control Board
TAF	thousand acre-feet
TAF/yr	thousand acre-feet per year
USFWS	U.S. Fish and Wildlife Service
UWMP	Urban Water Management Plan
WCMP	Water Conservation Master Plan
WSMP	Water Supply Management Program

Assessing Drought Water Supply Reliability

Water supply planning is complicated by the great variability that exists in the amount of water available each year. Drought planning is complicated further by the inability to predict the amount of rainfall and runoff that will occur in future years. If East Bay Municipal Utility District (EBMUD) could be certain that no future drought will be as severe or more severe than those that have occurred historically, then it could plan accordingly. This report presents current EBMUD drought planning policies, describes the methodology adopted by EBMUD to assess its water supply reliability during droughts, and presents the rationale for adopting that methodology. This report also presents results of alternative assessments of EBMUD system drought reliability and compares EBMUD's approach with those used by other comparable urban water districts.

EBMUD Drought Planning Policy

EBMUD's "Water Supply Availability and Deficiency" Policy 52, originally adopted in 1985 and most recently revised on November 9. 1999, describes the appropriate level of reliability for EBMUD's water supply system. That policy states:

> "IT IS THE POLICY OF THE EAST BAY MUNICIPAL UTILITY DISTRICT TO:
>
> Evaluate the availability of the District's water supplies (supplies of the same or similar quality to that of the Mokelumne River supply) and determine the acceptable maximum level of average annual demand for the District's service area based on limiting the water supply deficiency to a maximum of 25% during an occurrence of the drought planning sequence described in the Final Environmental Impact Report for the Updated Water Supply Management Program, September, 1993." (East Bay Municipal Utility District 1999)

EBMUD Drought Planning Process

Introduction

EBMUD's experiences during recent drought events demonstrate that its water supply system is not sufficiently reliable to meet even current demands during droughts. Beginning with the drought of 1976, EBMUD has had to ration its

customers in 6 of the last 27 years. During 1992 only 172,000 acre-feet (af) were available for delivery, 33% less than needed. Looking to the future, EBMUD's studies show that approximately 185,000 af of additional water will be needed during dry periods in order to meet 2020 demands. This need for supplemental water is in addition to amounts projected to be saved by expanded conservation and reclamation programs, and also assumes rationing not to exceed 25%. The amount of water needed to meet future needs is supported by studies of actual historical hydrology, as well as by the "drought planning sequence" discussed below. The supply of water available to EBMUD under its amendatory contract at Freeport will reduce or prevent rationing in dry periods and will assist in meeting future needs, but does not fully meet projected 2020 demands. Freeport deliveries are restricted to 133,000 af in any one year, not to exceed 165,000 af in any consecutive 3-year period when EBMUD total system storage is forecast to be less than 500,000 af.

EBMUD spent considerable effort in investigating reasonable approaches to evaluate the reliability of its system. An important tool that EBMUD uses is the "drought planning sequence." This tool, derived from EBMUD's experience during the 1976–1977 drought, allows it to determine how its system could respond to an extreme event. EBMUD also uses other measures to assess its system performance. This Appendix describes these measures and compares these methods to system reliability methods adopted by other major urban water suppliers in California. In particular, the results are compared to the approach prescribed in the Department of Water Resource's 1991 *Urban Drought Handbook* that calls for providing sufficient storage to meet essential health, safety, and firefighting needs, even at the end of the most extreme historical drought.

EBMUD Drought Management Program

EBMUD system storage generally allows it to continue serving customers during periods of low runoff. As described above, the District's "Water Supply Availability and Deficiency" policy limits drought demand reductions to no more than 25%. This drought rationing level is imposed in addition to the District's expanded conservation and reclamation programs that are projected to save 48 million gallons per day (MGD) every year, reducing 2020 demand levels from 277 MGD to 229 MGD.

Instead of immediately imposing 25% rationing whenever dry periods occur or postponing action until drought conditions are severe and supplies severely depleted, the District has developed guidelines that call for increasing amounts of rationing as supplies become increasingly diminished. By imposing some rationing in early years of potential prolonged drought periods, the necessity of more severe rationing in subsequent years is minimized. These guidelines are shown in Table 1 below

Table 1. Drought Management Program Guidelines

Drought Stage	Projected End-of-September Total System Carryover Storage	Reduction Goal
None	500 TAF or more	None
Moderate	500–450 TAF	0 to 15%
Severe	450–300 TAF	15 to 25%
Critical	300 TAF or less	25%

TAF = thousand acre-feet

Source: EBMUD Urban Water Management Plan 2000

Description of Drought Planning Sequence

During some historical dry periods, Mokelumne Basin runoff has been insufficient to meet service area demands. During these periods, most of EBMUD's demand was met by water previously diverted to storage. The worst drought event in EBMUD's history was the 1976–1977 drought, when runoff was only 25% of average and total reservoir storage decreased to 39% of normal, despite EBMUD's customer's 39% rationing efforts. (see Figure 1 showing Pardee Reservoir levels during this period). During this drought, the critically dry year of 1977 was followed by a very wet year (1978), allowing the system to recover rapidly. However, at the end of the 1977 water year, in September 1977, EBMUD could not know how much precipitation and runoff would occur the next year. Thus, EBMUD, as well as all other water suppliers in the State, could not allow its storage to become fully depleted at the end of 1977 in anticipation of plentiful water the following year. Had it done so, and if 1978 had turned out to be a third dry year, EBMUD would not have had sufficient water to meet its needs or its downstream obligations. EBMUD's drought planning sequence is based on these considerations. Ronald Robie, who was Director of DWR during 1977, stated this principal succinctly in his Forward to DWR's report on the "Continuing California Drought" written in August 1977, near the end of the 1977 water year:

> One of the most important tasks before us is planning for next year. We have no assurance that 1977–78 will not also be dry. We must plan for the worst on an assumption that the dry condition of 1976-77 will continue for another year. If such is the case, impacts will be far more severe than the last two years. We cannot permit the attitude that 'it can't happen here' to limit our efforts at assuring we are prepared for another very dry year.

While 1976–1977 was the worst drought on record, it is possible that a similar event will occur at some time in the future but without a very wet year like 1978 immediately following it. To plan for the possibility of such an event in the future, EBMUD has developed a three-year drought planning sequence. The first and second years of this drought planning sequence have the same runoff as

occurred in 1976 and 1977, respectively. Although the District could have assumed that the third year runoff could have been as low as the second year (i.e. use the historic low of 1977 runoff of 129 TAF), it instead assumed a higher runoff by averaging the first and second year, which results in the third-year amount of 185 TAF. It was further assumed that such a severe drought would not continue beyond the third year of this sequence and that all accessible water in storage in EBMUD water supply system, including all water in its East Bay Reservoirs, would be depleted by the end of the third drought year. Therefore, the minimum storage level under this planning event is equal to the aggregate total amount of EBMUD's inaccessible, or dead, storage of 35.4 TAF.

Although there is no broadly agreed-upon approach for conducting water supply drought planning, the approach outlined above is reasonable. It is entirely consistent with other major infrastructure planning processes that attempt to take into account natural events with unknown and potentially very long periods between recurrences. Limiting the assessment of the potential for drought to the historic record would not be prudent for a public agency that provides an essential service necessary for public health and welfare to over 1.3 million customers. Most engineering planning processes for major public infrastructure projects attempt to address the potential for natural occurrences. In those planning processes, the historic record is only one small element of the information used to determine the need for facilities and design elements. The historic record is too limited to provide reasonable guidance when public health and welfare are at stake.

For example, when assessing the design needs of major structures located near active faults to withstand earthquakes, prudent public policy requires that those structures be designed to withstand the maximum credible earthquake (MCE) that could occur on that fault regardless of whether such an earthquake has occurred during recorded history. It would not be prudent to use only the recent historical record as an indicator of the MCE given the long period between recurrences on most faults.

Similarly, in conducting flood control planning, public policy dictates that more than the historical record should be examined in determining appropriate flood control measures. As with earthquakes, limiting analysis to only the historical record would create a high probability of providing an inadequate basis for design of an appropriate flood control project. Because of the potential extreme nature of flood events, the costs of facilities that would be required, and the infrequent occurrence of major events, flood control projects are rarely constructed to provide absolute protection; prudent public policy again dictates that the public be provided with as much flood protection as can reasonably be provided.

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Jones & Stokes

Figure 1
Pardee Reservoir on March 25, 1977
with 47,000 Acre-Feet in Storage

Investigations Leading to Development of Drought Planning Assumptions

Prior to selecting its drought planning sequence, EBMUD investigated several different approaches to system analysis, including the use of tree-ring studies and stochastic hydrologic methods. EBMUD has determined that, at the present time, these techniques cannot be relied upon to significantly improve the conclusions regarding system impacts resulting from using historical hydrology and the drought planning sequence. The primary problem with these other techniques is the length of the data set. Others have reached similar conclusions. The U.S. Army Corps of Engineers summarized the current problem of determining drought frequencies based on historical hydrology on page 32 of their September 1991 report *The National Study of Water Management during Drought* (IWR Report 91-NDS-2) as follows:

> One difficulty with computing frequency of drought, however, is the small record sample available. Unlike floods where a peak value is selected for each year, droughts of duration longer than a single year have fewer potential occurrences. This, together with problem of distinguishing independent events, makes computation of drought frequency from gauged records difficult at best and statistically questionable at worst.

EBMUD conducted its own investigation of the feasibility of accurately calculating the probabilities of extreme drought. The EBMUD investigation confirms that the lack of data places great doubt on the reliability of these calculations. To demonstrate this, EBMUD analyzed the effects that the addition of 12 years of data to a 69-year hydrologic database has on calculations of drought probabilities using stochastic techniques. The analysis showed that adding the 12 years of data (1976 through 1987) to the 1907 and 1975 hydrologic database dramatically increased the predicted frequency with which extreme drought events would occur. For instance, adding the 12 years of data changed the predicted frequency of a 2–3 year drought from once in 1,000 years to once in 200 years. Stated another way, what could have been calculated to be a very improbable drought in 1975 would have been calculated to be much more probable 12 years later in 1987. This increase in probability would have been even more dramatic if the additional drought years of 1988 through 1992 were included in the data set.

The sensitivity of this model's predictions to relatively small amounts of new data indicates that the data set is insufficient to provide reliable and stable results.

Stochastic hydrologic techniques use a statistical evaluation of historical precipitation and runoff patterns. This historical record is analyzed, and the likelihood that droughts of various magnitudes will occur is estimated, based on how frequently they occurred during the period for which data are available. Using this method, additional sequences of hydrologic data can be synthetically generated that preserve the mean and variance of the historical record. In effect, this technique attempts to extend the historic record.

Because of the unreliability of the statistical evaluation of hydrology and the tree ring analysis, EBMUD believes that the drought planning sequence, empirically incorporating lessons learned through the District's experience during the 1976–1977 drought, is the best method for quantifying the amount of additional water needed to improve system reliability.

In a span of 17 years between 1976 and 1992, EBMUD experienced the most extreme two-year drought and the most extreme six-year drought since records of precipitation and runoff have been kept for the Mokelumne basin. In contrast to the 47 years prior to 1976, the District has had to ration customers in 6 of the 27 years since 1976. EBMUD has concluded that it would not be prudent to ignore the possibility that a future drought could occur that is more severe than those that have already occurred. Given the lack of data, the degree of uncertainty in calculating drought probabilities, the lack of redundancy in the EBMUD water supply system, and the inability to predict the end of droughts during real-time events, EBMUD selected the drought planning sequence for long-term water supply planning. It has the advantages of being both reliable (because it is based on the actual worst drought event in EBMUD history) and prudent (because it involves a scenario somewhat more severe than the actual worst historical drought event).

Comparison of Other Urban Districts' Approach to Drought Management Planning

To provide an additional reasonability check on decisions regarding drought planning, the different approaches to drought management planning taken by several water agencies were reviewed. The agencies were: Santa Clara Valley Water District, San Diego County Water Authority, Los Angeles Department of Water and Power, Metropolitan Water District of Southern California, Contra Costa Water District, San Francisco Public Utilities Commission, and Alameda County Water District. Information was gleaned by reviewing the Urban Water Management Plans for these agencies.

Table 2 compares three elements of each agency's drought management planning: how they define the maximum credible drought, whether any triggers have been established that initiate drought management actions, and what demand-reduction targets have been set.

As seen in Table 2, each agency has developed a unique methodology based on its own sources of supply, storage capabilities, and drought experiences. The survey showed that, many water agencies plan supplies to provide full deliveries to customers even during severe droughts. By comparison, EBMUD plans for a maximum of 25% cutbacks to customers (32% to residential customers) during droughts, making EBMUD's drought planning more aggressive.

In addition, the survey found that all agencies include some provisions for dealing with more severe droughts than those experienced historically. Most

Table 2. Summary of Drought Planning Assumptions for Different Water Agencies

Agency	Source	Drought Planning Sequence	Drought Management Triggers	Build-Out Population	Build-Out Demand (af)	Total Storage Available (af)	Target Drought Demand Reduction
East Bay Municipal Utility District	Urban Water Management Plan 2000 (February 2001)	The basis for the multiple dry years drought scenario is a 3-year sequence using the runoff from the 1976-77 drought for the first two years of the sequence and assuming the third year runoff to be 185,000 af, an average of the runoff for the two worst years on record (1976-77).	When storage is projected to be less than 500,000 af, prepare a Drought Management Plan. (full capacity is approximately 755,620 af).	1,420,000 by the year 2020.	256,511 by the year 2020.	755,620	Maximum demand reduction target is limited to 25%.
Santa Clara Valley Water District	Urban Water Management Plan (April 2001)	The system is designed for a drought similar to the 1987-1992 drought extended to a 10-year duration and a 1-percent probability of occurrence (defined as the Critical Dry Period, CDP).	When groundwater end-of-the-year carryover storage falls below 350,000 af (full capacity is 500,000 af), following year considered to be at risk of water shortage.	1,930,700 by the year 2020.	420,000-480,000 by the year 2020.	670,000 including groundwater storage	No demand reduction required for a drought equivalent to the Critical Dry Period. Variable levels of reduction triggered by more severe shortages.
Metropolitan Water District of Southern California	The Regional Urban Water Management Plan (December 2000)	The basis for the multiple dry year drought scenario is the 1990-1992 drought, which resulted in the worst shortage situation experienced by MWD. Single dry year scenario is based on 1977, which is the worst year in the historical hydrologic record.	Metropolitan uses a monthly schedule to provide senior management with supply/demand information with which they make resource allocation decisions (no specific information provided on triggers).	21.3 million by the year 2020.	4,800,000 by the year 2020.	1,026,000	MWD is able to meet its full-service demands in the simulated drought conditions.
San Diego County Water Authority	2000 Urban Water Management Plan	Multiple dry year assessment based on assuming 1990-1992 drought year supplies for projected future 2001-2003 conditions.	No triggers given.	3,673,000 by the year 2020.	813,000 by the year 2020.	571,000 plus 30,000 groundwater storage	No demand reduction required for the simulated dry conditions, if projected imports and local supplies are developed.
City of Los Angeles Department of Water and Power	Urban Water Management Plan 2000 Update	Drought planning is based on a repeat of the three driest consecutive years in the hydrologic record (1959-61) following current year conditions.	No triggers given.	4,856,887 by the year 2020.	Approximately 800,000 by the year 2020.	35,000	Supplies are sufficient to meet the projected drought-year demands, with implementation of conservation measures. Exact demand reduction is not reported.

Table 2. Continued

Agency	Source	Drought Planning Sequence	Drought Management Triggers	Build-Out Population	Build-Out Demand (af)	Total Storage Available (af)	Target Drought Demand Reduction
San Francisco Public Utilities Commission	Water Supply Master Plan (April 2000)	SFPUC plans its water deliveries in anticipation of a 6-year drought worse than the 1986-92 drought.	SFPUC has drought operating procedures that trigger different delivery deficiency levels relative to the volume of reservoir storage (total capacity in storage, 898,300 af - no exact figures given for trigger).	2,500,000 by the year 2030.	339,350 by the year 2030	1,469,000	Demand reduction targets not specified.
Contra Costa Water District	2000 Urban Water Management Plan. (December 2000)	CCWD determines the state of its available supplies annually. Multiple dry year (3 years), single dry year, regulatory restricted year, and normal year water supply assessments are projected in five-year increments over the next 20 years	The projected supply shortfall, calculated for each upcoming year, is used to trigger the adoption of a stage appropriate to the severity of the water shortage (no exact figure is given).	553,330 by the year 2020.	205,155 by the year 2020.	104,030	Demand reduction up to 50% may be enacted, in the final stage of the water shortage management program.
Alameda County Water District	1995 Integrated Resources Planning Study	Estimates of dry year deliveries from aqueducts and groundwater in the future are made with the IRMP model based on the period of record (1922-1992).	No triggers given.	331,300 by the year 2020	77,500 by the year 2020	7 plus groundwater storage	Maximum demand reduction target of up to 10% once every 30 years.

agencies utilize multiple sources of supply to increase flexibility and reliability. In contrast, the report points out that EBMUD relies on a single source of water, the Mokelumne River.

In summary, the survey concluded that "Each agency must assess its own risk of water supply shortage and develop a methodology to meet its individual planning needs."

Assessments of Mokelumne River Water Supply Reliability

This section describes model studies prepared by EBMUD using different approaches to assessing drought reliability of the District's water supply system. These studies do not include the drought planning sequence, but are instead based entirely on historic hydrologic conditions. They confirm that EBMUD's water supply system must be improved to continue providing reliable service, and confirm the quantity of additional supply needed.

As discussed above, EBMUD incorporates drought-related rationing into its water supply operations and planning, reducing demand during droughts by up to 25% of pre-drought levels. This results in EBMUD planning for less water supply in the future. Many water agencies plan to provide full water demand even during droughts.

Full Delivery Assessment. The first additional water supply study investigates whether EBMUD's system would be capable of delivering full demand under a repeat of historical hydrologic conditions, even if storage were allowed to completely deplete. This study demonstrates that EBMUD's water supply system is not capable of meeting full demands in all years. During the hydrologic conditions occurring in 1977 and 1992, EBMUD system storage would become completely depleted. During a year like 1992, only 172 thousand acre-feet per year (TAF/yr) could be delivered, 33% less than needed. Storage levels are severely depleted during all drought periods. (See Figure 2)

State Drought Guidelines. Water suppliers construct storage reservoirs to ensure adequate water supply during periods of insufficient runoff. In California, droughts lasting for several years are not uncommon. Since water suppliers in California cannot predict when droughts will begin and when they will end, they maximize the amount of carry-over storage remaining at the end of the year to ensure adequate supplies during droughts.

When assessing the reliability of their water supply systems, some water suppliers consider how much carry-over storage remains at the end of historic drought periods as a safeguard against more severe droughts in the future. The California Department of Water Resources describes this approach on Page 17 of their March 1991 *Urban Drought Guidebook* as follows: "At a minimum, the carry-over amount should be enough to meet essential health, safety, and fire-

fighting needs if the subsequent winter is as dry as the driest year on record." (*Urban Drought Guidebook* 1991)

For the assessment of EBMUD's water supply, 235 TAF was assumed to be the minimum carry-over storage necessary to meet basic needs. That quantity is approximately equal to 75% of demand plus the amount of storage that is inaccessible, called dead storage. Thus, if it became necessary to use this storage, EBMUD would be able to release inflow for downstream prior rights and public trust resources while delivering previously stored water to its customers. Three separate model studies were prepared to assess supply under different assumed conditions. Key results from these studies are described below.

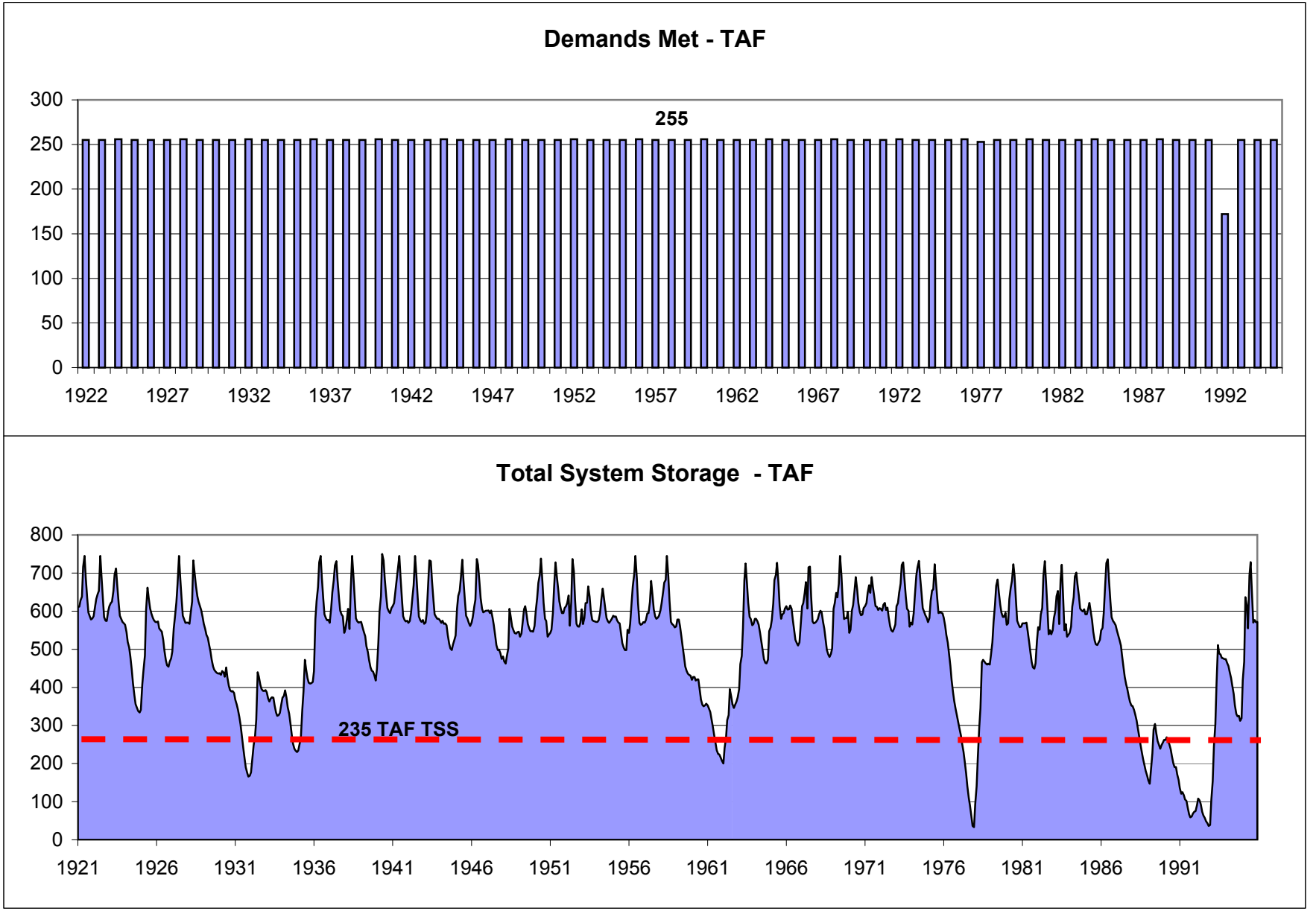
The review of other California water suppliers' drought planning efforts, described above, revealed that many water suppliers attempt to meet full demand during all years. To assess the EBMUD's Mokelumne River system's capability to meet full demands, a model run was prepared to deliver a constant rate in all years. This model run showed that EBMUD could only deliver 134 TAF each year, with no customer rationing, while maintaining minimum carry-over levels. 134 TAF is much less that current demand of 246 TAF/yr. To supply full demands in every year, a supplemental supply of 336 TAF would be needed over three years (112 TAF each year), much more than the 185 TAF over three years that the District is seeking. Resulting Total System Storage and Deliveries from this model run are shown in Figure 3.

As described above, EBMUD plans to impose rationing on customers during droughts by up to 25%. To assess how much more water could be delivered from the Mokelumne system while accepting deficiencies during droughts, a model study was prepared that imposed EBMUD's drought management program. This model run showed that, even if EBMUD imposed rationing during the early years of drought, only 158 TAF could be delivered, still less than current demand levels of 246 TAF. Even with these rationing levels imposed, this study indicates a three-year total need of 264 TAF, still much more than the 185 TAF EBMUD is seeking. Storage and deliveries from this model run are shown in Figure 4.

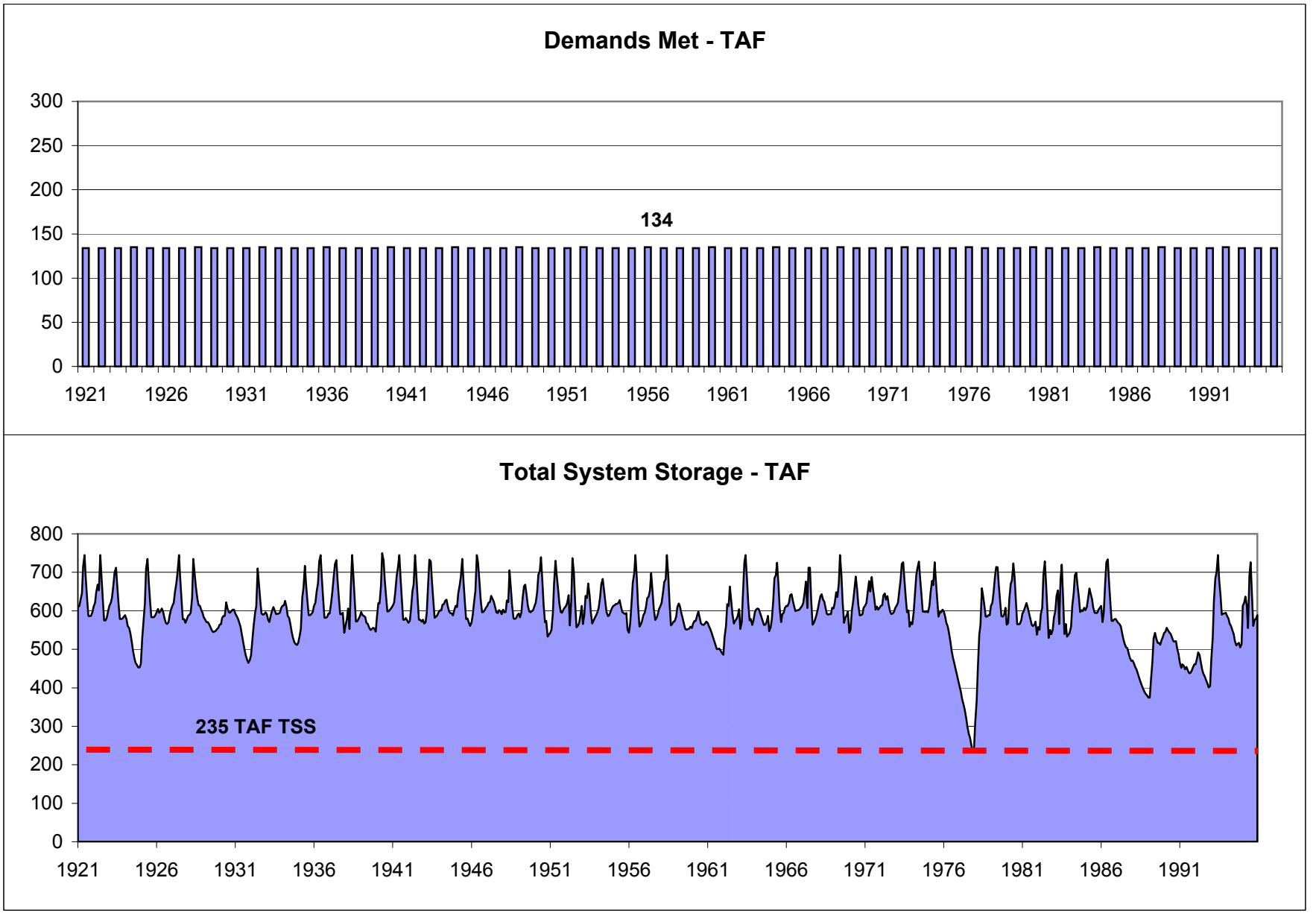
Another model run was prepared, with a supplemental supply of up to 185 TAF provided over two years. This model run confirms the amount of water needed to improve EBMUD system water supply reliability. Even after providing 20 TAF for fishery gainsharing flows as required by the 1998 Joint Settlement Agreement[1], this model run indicates that with a supplemental supply of 185 TAF, 2020 demand levels can be met with rationing levels never exceeding 25%. Storage and deliveries resulting from this model run are shown in Figure 5.

[1] The Joint Settlement Agreement among EBMUD, DFG, and USFWS, adopted by FERC on November 27, 1998, and by the SWRCB in D-1641, on December 29, 1999, sets flow and non-flow measures to protect the fish resources of the Mokelumne River ecosystem.

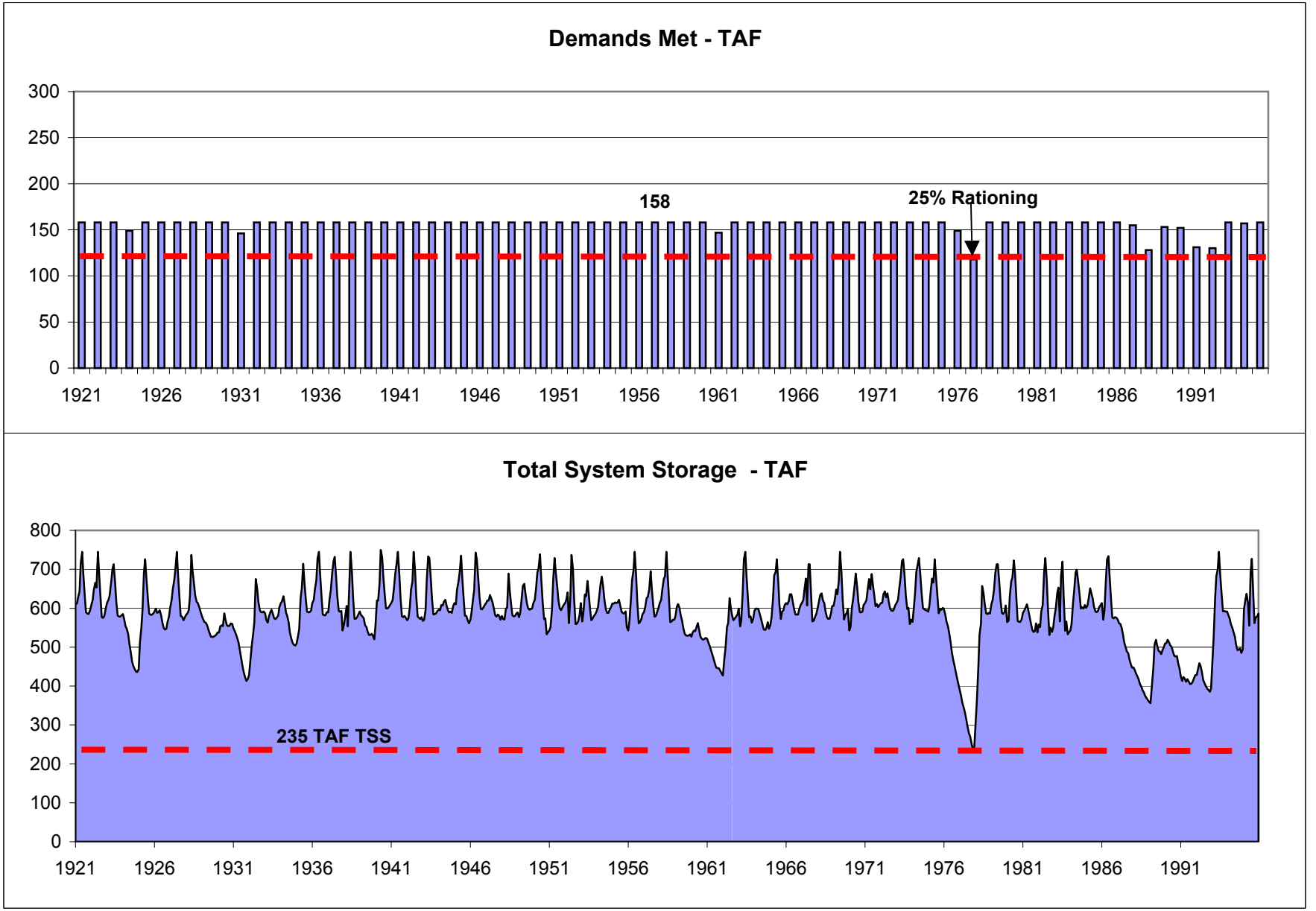
Demand - 228 MGD (255 TAF)
No Minimum Total System Storage
Full Deliveries, Reclamation and Conservation, No Supplemental Supply



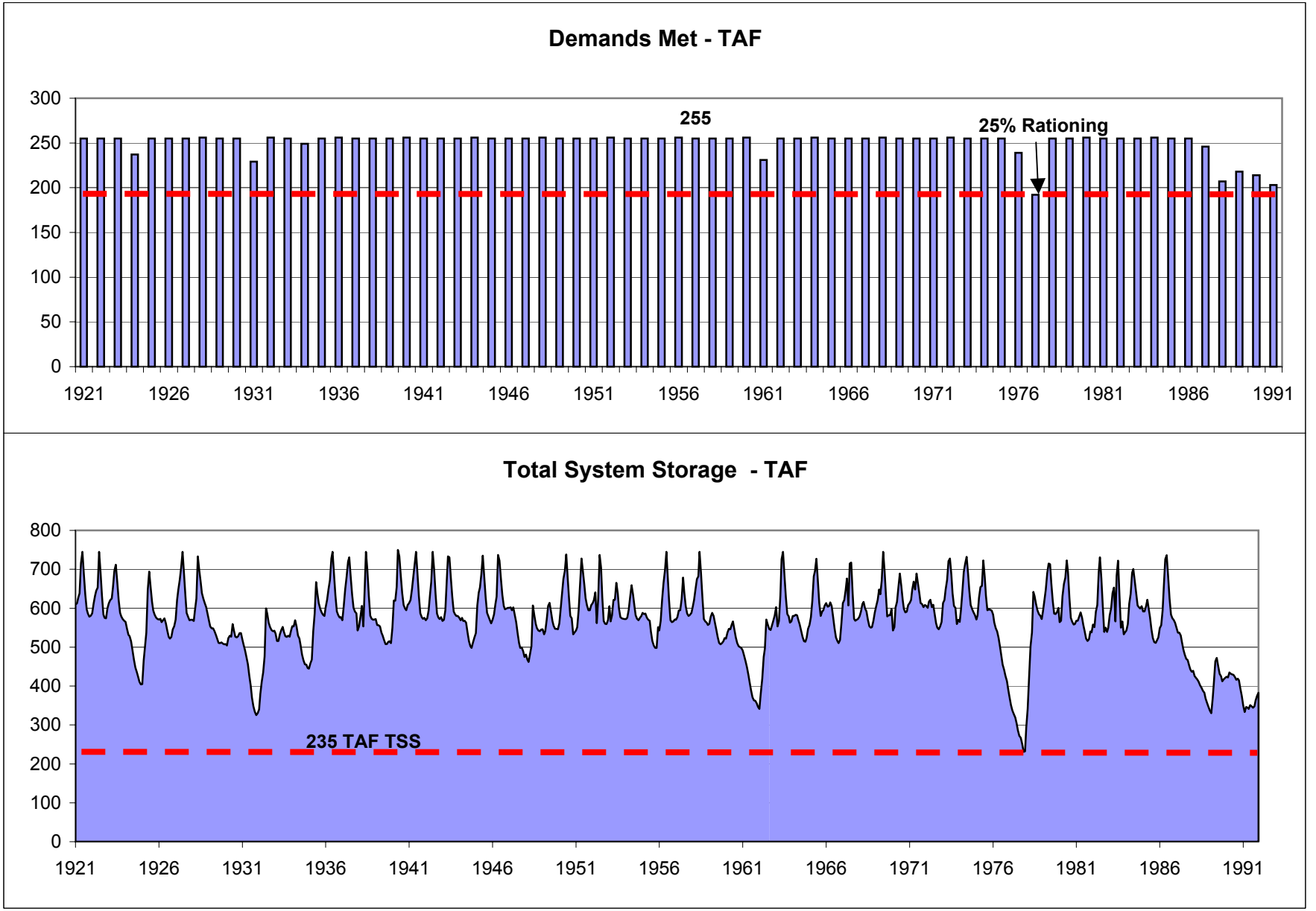
Maximum Sustainable Delivery - 120 MGD (134 TAF)
Minimum Total System Storage - 235 TAF
Full Deliveries, No Supplemental Supply



Maximum Sustainable Delivery - 141 MGD (158 TAF)
Minimum Total System Storage - 235 TAF
Early Customer Rationing, No Supplemental Supply



Maximum Sustainable Delivery - 228 MGD (255 TAF)
Minimum Total System Storage - 235 TAF
Early Customer Rationing, 185 TAF Supplemental Supply



Resulting Need for Additional Water

This section describes the results of using the above concepts to quantify the amount of additional water needed to ensure reliable drought year water supplies through 2020. Several factors must be taken into account to determine supplemental water supply needs. The contribution of each of these factors to quantifying EBMUD's need for supplemental water is described in this section. EBMUD has adopted a rigorous conservation program, projected to reduce year 2020 demand from 310 TAF/yr to 256 TAF/yr. In addition to the long-term demand reduction efforts, EBMUD's drought demand management program, reduces its need for additional water even further. The maximum 25% demand reduction level reduces water needs by an additional 64 TAF/yr. Despite these savings, EBMUD must still improve its water supplies by 185 TAF during droughts to continue providing reliable water service (Table 3). Although the maximum use of this supplemental supply would occur during the drought planning sequence, providing this supplemental supply is needed to improve EBMUD water supply system reliability during all drought periods.

Supplemental Supply for Consumptive Use Reliability

The No Action 2020 EBMUDSIM model study (presented in Volume 3, "Modeling Technical Appendix") indicates that shortages totaling 109 TAF would occur to EBMUD's customers and the river during the drought planning sequence.

Supplemental Supply for Public Trust Resources

Under the Joint Settlement Agreement, fishery releases to the lower Mokelumne River during the period from October through March are determined by carryover storage in Pardee and Camanche reservoirs on Nov. 5th. As EBMUD water supply reliability improves, increased carryover storage levels require more water to be released from Camanche Reservoir. This results in more water being required for water supply reliability during the drought planning sequence. This adds 33 TAF to the District's need for supplemental water. This is caused by increasing fishery releases from critically dry to dry for six months during the drought planning sequence.

Supplemental Supply for Public Trust Gainsharing

The Joint Settlement Agreement also provides that 20% of the yield from additional water supplies developed by EBMUD, up to maximum of 20 TAF, must be made available for public trust purposes as requested by the California Department of Fish and Game (DFG) and U.S. Fish and Wildlife Service (USFWS). This requirement adds 20 TAF to the District's supplemental water supply needs.

Supplemental Supply to Decrease First Year Rationing

To determine each year's water supply conditions, water suppliers must wait until after the winter's precipitation and snowpack accumulation is completed. During an initial year of drought, it can take several months to implement a rationing response. Thus, to effect a 10% annual savings in water use during the initial year of drought, customers must decreases use by 20% in the second half of the year. To alleviate the burden imposed by 20% rationing during the second half of a single drought year requires additional water supplies. To decrease rationing response to 5% annual savings during a single drought year (10% for half of the year) requires an additional 13 TAF of supplemental supply.

Supplemental Supply for Increased Evaporation

Improved water supplies result in higher reservoir levels. The increased surface area from higher water storage levels increases the amount of water lost by evaporation and seepage. This effect adds 10 TAF to the District's supplemental water supply needs.

Table 3. Supplemental Supply Needs

Supplemental Supply	
For Consumptive Use Reliability	109 TAF
For Public Trust Resources	33 TAF
For Public Trust Gainsharing	20 TAF
To Decrease First-Year Rationing	13 TAF
For Increased Evaporation	10 TAF
Total	**185 TAF**

Conclusion

After comparing water supply reliability planning approaches taken by other California water agencies, and after exhaustive studies of its own system reliability, EBMUD concludes that prudent planning requires it to obtain a supplemental source of supply during drought conditions. The analysis presented herein, supports the conclusion that a supplemental supply of 185 TAF would meet the District's water supply needs during dry periods, after implementing drought demand management programs to reduce demand by 25%. The earlier this water is delivered during a drought, the more effective it becomes for water supply purposes.

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Appendix B

Alternatives Screening Report for the Freeport Regional Water Project

Alternatives Screening Report

for the

Freeport Regional Water Project

Freeport Regional Water Authority
Sacramento County Water Agency
East Bay Municipal Utility District

U.S. Department of Interior, Bureau of Reclamation

July 2003

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Acronyms and Abbreviations

2000 Demand Study	Districtwide Update of Water Demand Projections
af	acre-feet
AFA/ac	acre-feet of water used annually per acre of land
Bixler	Bixler Emergency Pumping Plant
BMPs	best management practices
Board	EBMUD Board of Directors
CALFED ROD	CALFED Program Record of Decision
CCR	California Code of Regulations
CCWD	Contra Costa Water District
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
Corps	U.S. Army Corps of Engineers
CVP	Central Valley Project
DWR	California Department of Water Resources
East Bay	the region east of San Francisco Bay
EBMUD	East Bay Municipal Utility District
EIR/EIS	environmental impact report/environmental impact statement
EPA	U.S. Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
FRWA	Freeport Regional Water Authority
LEDPA	least environmentally damaging practicable alternative
MGD	million gallons per day
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NRWRP	North Richmond Water Reclamation Plant
PG&E	Pacific Gas and Electric Company
Reclamation	Bureau of Reclamation
Regional Plant	Sacramento Regional Wastewater Treatment Plant
SCWA	Sacramento County Water Agency
SEBP	South East Bay Plain
SHPO	State Historic Preservation Officer
SMUD	Sacramento Municipal Utility District
SRWTP	City of Sacramento's water treatment plant
SRWWTP	Sacramento Regional Wastewater Treatment Plant
SWRCB	State Water Resources Control Board
TSS	total system storage
UWMP	Urban Water Management Plan
Water Forum	Sacramento Area Water Forum
WCMP	Water Conservation Master Plan
WSMP	Water Supply Management Program

Chapter 1
Introduction

Introduction

The Freeport Regional Water Authority (FRWA) was created by a joint exercise of powers agreement between the Sacramento County Water Agency (SCWA) and the East Bay Municipal Utility District (EBMUD). *FRWA's basic purpose is to increase water service reliability for customers, reduce rationing during droughts, and facilitate conjunctive use of groundwater supplies in central Sacramento County*. FRWA is proposing the Freeport Regional Water Project to meet this basic purpose and others set forth below. This alternatives screening report considers all potentially feasible alternatives for possible inclusion in the environmental impact report/environmental impact statement (EIR/EIS) prepared for the Freeport Regional Water Project.

FRWA Member Agencies

Sacramento County Water Agency

SCWA provides water to areas in central Sacramento County. SCWA is responsible for providing water supplies and facilities throughout these areas, which encompass the Laguna, Vineyard, Elk Grove, and Mather Field communities, through a capital funding zone known as "Zone 40" (Figure 1-1).

The long-term master plan for Zone 40 envisions meeting present and future water needs through a program of conjunctive use of groundwater and surface water. SCWA presently has a Central Valley Project (CVP) entitlement of 22,000 acre-feet (af) through the Bureau of Reclamation (Reclamation). SCWA has subcontracted 7,000 af of this entitlement to the City of Folsom. CVP water for SCWA is currently delivered through the City of Sacramento's intake and treatment facilities based on SCWA need and available City capacity. SCWA's CVP contract also allows it to divert at the location identified as "Freeport" on the Sacramento River south of downtown Sacramento. SCWA expects to be able to provide additional anticipated surface water entitlements to serve Zone 40 demands.

East Bay Municipal Utility District

EBMUD is a multipurpose regional agency that provides water to more than 1.3 million municipal and industrial customers in portions of Contra Costa and Alameda Counties in the region east of San Francisco Bay (East Bay) (Figure 1-1). EBMUD obtains most of its supply from Pardee Reservoir on the Mokelumne River, with the remainder collected from local runoff in East Bay terminal reservoirs. On July 26, 2001, EBMUD and Reclamation entered into an amendatory CVP contract that sets forth three potential diversion locations to allow EBMUD to receive its CVP supply. One of these locations is "Freeport." EBMUD's CVP supply is 133,000 af in any 1 year, not to exceed 165,000 af in any consecutive 3-year period of drought when EBMUD total system storage (TSS) is forecast to be less than 500,000 af. Subject to certain limitations, the contract also provides for a delivery location on the lower American River, and EBMUD retains the opportunity to take delivery of water at the Folsom South Canal should other alternatives prove infeasible. Additional environmental review is required prior to diversion under the contract.

City of Sacramento

The City of Sacramento has joined the FRWA as an Associate Member. The City's main interests lie in the design and construction of FRWA project facilities that may be located in the City or on various City properties or rights-of-way. A City representative sits on the FRWA Board of Directors as a nonvoting member.

Purpose of the Alternatives Screening Report

The purposes of this alternatives screening report are to:

- Identify a range of reasonable, practicable, and potentially feasible alternatives to be evaluated in a detailed EIR/EIS consistent with Clean Water Act Section 404(b)(1) Guidelines, the California Environmental Quality Act (CEQA), and the National Environmental Policy Act (NEPA); and
- Document the process used to screen potential alternatives, carrying over those alternatives that are practicable and potentially feasible and that meet most of the basic project objectives and purpose and need.

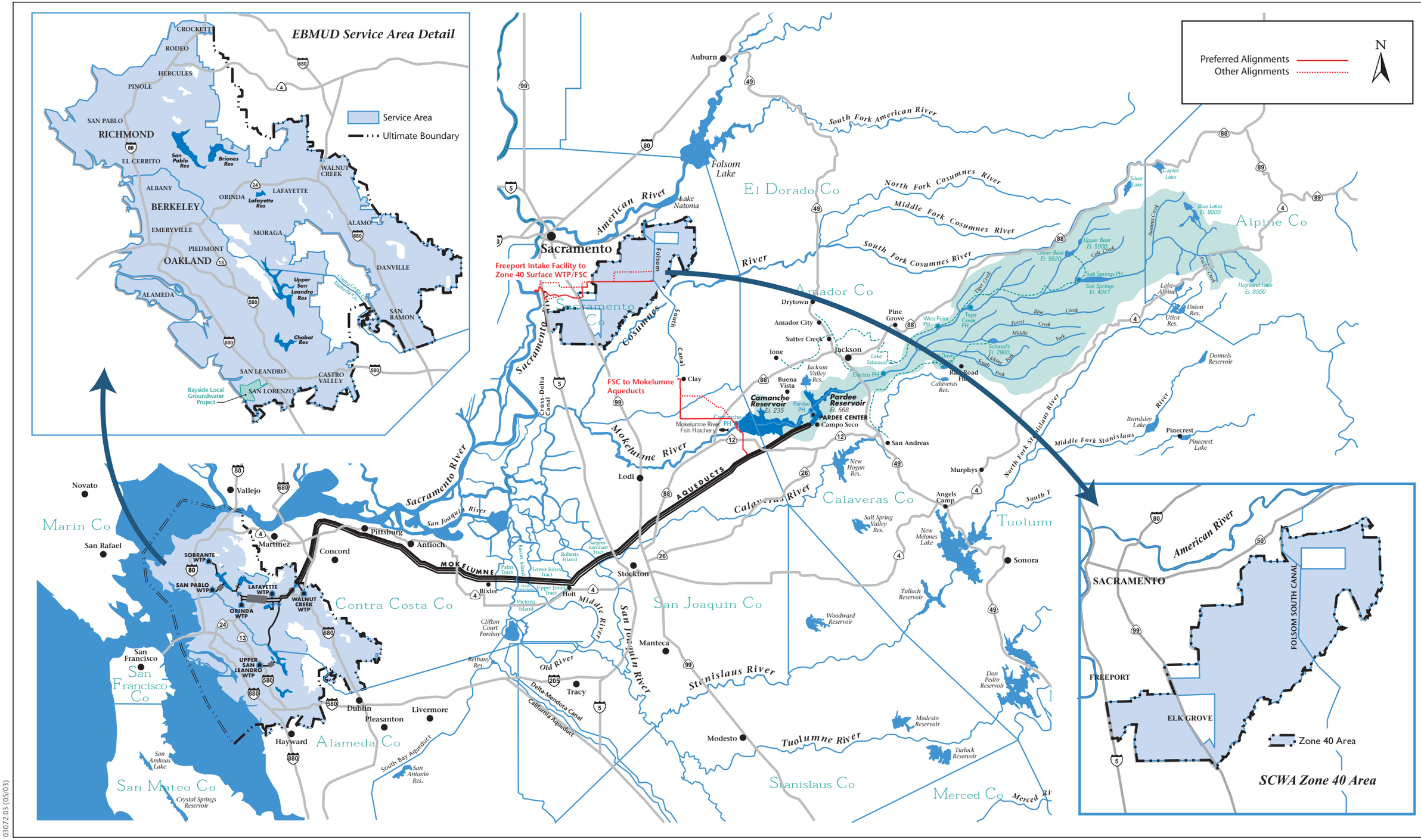

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Figure 1-1
Service Areas

Compliance with the California Environmental Quality Act and the National Environmental Policy Act

The joint EIR/EIS is intended to satisfy the requirements of both CEQA and NEPA and will be used by both state and federal agencies to identify, evaluate, and disclose significant environmental impacts as described below.

Lead Agencies

FRWA has determined that preparation of an EIR to satisfy CEQA (Public Resources Code, Section 21000 et seq.) is required before approval of the Freeport Regional Water Project. FRWA is the lead agency under CEQA pursuant to state CEQA guidelines Section 15367. The primary purpose of an EIR is to identify and publicly disclose any significant environmental impacts that may result from implementation of a project and to identify feasible alternatives, mitigation measures, or revisions to the project that would substantively reduce those impacts.

Pursuant to Section 15126(d) of the State CEQA Guidelines, an EIR must describe and evaluate a reasonable range of alternatives that would feasibly attain most of the basic project objectives and would avoid or substantially lessen any of the significant impacts of the project as proposed. The guidelines state that the range of alternatives required to be evaluated in an EIR is governed by the "rule of reason": the EIR needs to describe and evaluate those alternatives necessary to permit a reasoned choice and to foster informed decision making and public participation.

Like CEQA, NEPA and the Council on Environmental Quality's NEPA regulations (Title 40, Code of Federal Regulations [CFR], Section 1500 et seq.) require federal agencies, when proposing to carry out, approve, or fund a project, to evaluate the environmental effects of the action, including feasible alternatives and mitigation measures to minimize adverse effects. Federal agencies may need to take action (triggering NEPA) on the Freeport Regional Water Project, depending on the specific configuration of the project for which FRWA eventually seeks approval. Because many of the alternatives under consideration may require approval from Reclamation with regard to EBMUD's and/or SCWA's water service contracts, Reclamation will serve as the federal lead agency under NEPA. Because of the complex nature of the Freeport Regional Water Project, FRWA and Reclamation have determined that preparation of an EIS is the most expedient form of NEPA compliance. The U.S. Army Corps of Engineers (Corps) may rely on the EIS to satisfy NEPA for its individual approval of project components.

Clean Water Act Section 404 Requirements

To meet the basic project purpose, FRWA may need to discharge dredged or fill materials into waters of the United States, including *special aquatic sites*. Special aquatic sites include wetlands, mudflats, vegetated shallows, and certain other habitats. The most likely activities associated with such discharges would be construction of intake facilities and of water conveyance pipelines that cross drainages, streams, and rivers. Section 404 of the federal Clean Water Act is the statutory mechanism by which the Corps permits such discharges into waters of the United States.

Section 404(e) authorizes the Corps to issue general permits on a state, regional, or nationwide basis. The general permits issued by the Corps on a national level are called nationwide permits. Nationwide permits, and other general permits, are designed to apply to categories of discharge activities that are similar in nature and will cause only minimal adverse environmental effects. The Corps recently issued new guidance on nationwide permits, including revised conditions for existing nationwide permits and new categories of activities allowed under nationwide permits. Nationwide Permit 12, Utility Line Discharges, may be applicable to part or all of the Freeport Regional Water Project, depending on the alternative ultimately selected by FRWA. This nationwide permit establishes the conditions under which discharges of dredged or fill material are permitted.

If the Corps determines that the Freeport Regional Water Project does not meet the conditions of Nationwide Permit 12 or other nationwide permits, an individual permit may be required. Section 404(b)(1) guidelines, promulgated by the U.S. Environmental Protection Agency (EPA), govern, in part, the issuance of individual permits by the Corps. Compliance with Section 404(b)(1) guidelines is mandatory before the Corps may issue an individual permit. Subpart B of Section 404(b)(1) guidelines states:

> No discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences (40 CFR 230.10[a]).

An alternative is considered practicable if it is available and feasible after taking into consideration cost, existing technology, and logistics in light of the overall project purpose (40 CFR 230 10[a][1]).

Section 404(b)(1) guidelines also require the use "of appropriate and practicable discharge conditions to minimize pollution or adverse effects to the affected aquatic ecosystems (40 CFR 230.12 [a])" when alternatives that avoid aquatic ecosystems are shown not to be available. Mitigation measures designed to minimize impacts on aquatic resources are specifically mentioned in this report and are included in the EIR/EIS prepared for the project.

Section 404(b)(1) guidelines also describe specific requirements for discharges to special aquatic sites for uses that are not considered to be "water dependent":

> Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in Subpart E) does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise (40 CFR 230.10[a][3]).

The regulations define a water-dependent activity as one requiring "access or proximity to or siting within the special aquatic site in question to fulfill its basic project purpose" (40 CFR 230.10[a][3]).

This alternatives screening report documents the process by which alternatives have been screened to identify the least environmentally damaging practicable alternative (LEDPA) for the project. This screening was conducted in accordance with the Section 404(b)(1) guidelines, should compliance with these guidelines ultimately be required. This report presents the results of the screening process.

Organization of This Report

After this introductory chapter, this report is organized as follows.

- Chapter 2, "Project Purpose and Need," describes FRWA's project purpose and the need for a water diversion to supplement current water supplies. This chapter also discusses the existing water supply, existing water contracts and plans, and the history of water supply project analyses.
- Chapter 3, "Methodology Used in the Alternatives Analysis," describes the approach to the analysis of alternatives.
- Chapter 4, "Assumptions Used in Developing Screening Criteria," describes the assumptions made for planning potential alternatives to meet the needs of FRWA.
- Chapter 5, "Development of Screening Criteria," describes the process used to develop the screening criteria and includes detailed descriptions of those criteria.
- Chapter 6, "Project Alternatives and First-Stage Evaluation Results," describes each alternative evaluated and provides the results of the first-stage evaluation.
- Chapter 7, "Second-Stage Evaluation Results," provides the results of the second-stage evaluation.
- Chapter 8, "Third-Stage Evaluation Results," will provide the results of the third-stage evaluation, which will be conducted as part of the CEQA/NEPA evaluation of alternatives.

- Chapter 9, "Mitigation for Least Environmentally Damaging Practicable Alternative," will describe the mitigation measures established to minimize impacts on the aquatic ecosystem.
- Chapter 10, "Cited References," lists all sources of information used to prepare this report.

Chapter 2

Project Purpose and Need

Project Purpose

The Freeport Regional Water Project is intended to contribute to meeting the objectives of SCWA and EBMUD. The primary purposes and objectives of the project are to:

- support acquisition of additional SCWA surface water entitlements to facilitate efficient conjunctive use of groundwater in its Zone 40 area, consistent with the Sacramento Area Water Forum Agreement and County of Sacramento General Plan policies;
- provide facilities through which SCWA can deliver existing and anticipated surface water entitlements to its Zone 40 area;
- provide facilities through which EBMUD can take delivery of a supplemental supply of water that would substantially meet its need for water and reduce existing and future customer deficiencies during droughts; and
- improve EBMUD system reliability and operational flexibility during droughts, catastrophic events, and scheduled major maintenance at Pardee Dam or Reservoir.

Need for the Project

Sacramento County Water Agency

SCWA was formed in 1952 by a special legislative act of the State of California. Among SCWA's purposes are:

- to make water available for any beneficial use of lands and inhabitants, and
- to produce, store, transmit, and distribute groundwater.

SCWA is governed by the Sacramento County Board of Supervisors, acting as the SCWA's Board of Directors. SCWA is legally authorized to purchase, sell, or acquire water, including acquiring water through contract with either the

federal government or the State of California. SCWA also may construct and operate facilities.

In 1985, the SCWA Act was amended by the California Legislature, granting SCWA the authority to establish groundwater management zones for the purpose of distributing surface water to replenish the groundwater basin and to stabilize groundwater levels. The SCWA Act allows for collecting fees from the beneficiaries of these activities. A groundwater management zone is authorized to be formed in any area that would benefit from the importation and distribution of surface water for municipal and industrial uses.

Zone 40 was formed in May 1985, by SCWA Resolution No. 663, for the purpose of constructing facilities for the production, conservation, transmittal, distribution, and sale of surface water and groundwater for conjunctive use in the Zone 40 area. In 1987, SCWA adopted a Zone 40 Water Supply Master Plan, a long-term plan for meeting future water needs in the newly developing Laguna and Vineyard areas, which have historically depended on groundwater. The plan was updated in 1995. On March 23, 1999, SCWA expanded the Zone 40 boundaries to the extent they exist today, as shown in Figure 1-1. SCWA is preparing an update of the Water Supply Master Plan based on these new boundaries; it was published in draft form in December 2002.

Historical groundwater use in Zone 40 was composed of agricultural, rural, and municipal pumping. Long-term reliance on groundwater has formed a groundwater cone of depression, known as the "Elk Grove cone of depression," within Zone 40. Groundwater in this central Sacramento basin moves toward the center of the cone of depression, and groundwater extracted from the basin contributes to further declines at the cone of depression.

Management of the central groundwater basin is being considered under a successor process to the Sacramento Area Water Forum Agreement known as the Groundwater Forum. SCWA is a major sponsor and stakeholder in this broadly shared process.

In 1993, Sacramento County approved a general plan that changed the land use designation of large areas of central Sacramento County from agricultural uses to residential, commercial, and industrial uses. As a result, on March 23, 1999, SCWA expanded the boundary of Zone 40 as discussed above. The expanded boundary includes the urban policy area of the County's general plan and areas studied in previous master planning efforts. Recently, a combination of wet weather and the transition of land from agricultural uses to urban development has contributed to the stabilization of groundwater elevations in the central County groundwater basin. However, if buildout of the Sacramento County General Plan relied solely on groundwater, groundwater levels would decline an additional 160 feet causing shallow wells to dry up, groundwater quality to become degraded, pumping costs to increase, land to subside, and potential changes to local floodplains. To avoid adversely affecting groundwater it is necessary to use surface water supplies in conjunction with available groundwater supplies to meet the projected buildout demands in Zone 40.

East Bay Municipal Utility District

EBMUD needs a supplemental water supply both to avoid water shortages during drought periods, and to provide a supply during times when the Mokelumne River Basin supply is not available. Each of these scenarios is described below.

Need during Drought Periods

When the original EBMUD system was planned in the early 1920s, the utility acquired rights to 200 million gallons per day (MGD) of water from the Mokelumne River. Pardee Dam was built to store that water during high river flows from spring snowmelt and rains. After World War II, the East Bay population grew rapidly, and EBMUD was granted water rights for another 125 MGD of Mokelumne River water. By the early 1960s, EBMUD planners were predicting more shortages as growth continued in the East Bay.

In 1964, completion of Camanche Reservoir below Pardee Reservoir provided some relief by giving EBMUD more ways to regulate Mokelumne River flows. Camanche's 417,000-af capacity is used to meet agricultural and fishery needs on the lower Mokelumne River, provide flood control, and allow EBMUD to hold a larger supply of high-quality water in Pardee Reservoir. Briones Reservoir, north of Orinda, was also completed in 1964 and provides another 60,000 af of backup water supplies in the East Bay.

Since 1964, no new water supply or storage has been added to the EBMUD system, and the population in the EBMUD service area has grown by nearly 250,000 people. Despite successful water conservation and reclamation programs (discussed in Chapter 4), EBMUD's Mokelumne River supply is no longer sufficient to provide reliable water supplies during a drought without resulting in substantial hardship and economic impacts on its customers. Because EBMUD already has undertaken extensive conservation measures, it is more difficult to achieve additional water savings during droughts.

At the same time, demands on the Mokelumne River have increased. In 1996, EBMUD, in consultation with state and federal resource agencies, agreed to increase releases from Camanche Reservoir to provide higher flows for fish in the lower Mokelumne River and to contribute 20% (up to 20,000 af) of any actual yield from new water projects to Mokelumne River fishery flows.

The needs of new residential, business, and industrial customers within the EBMUD service area would be almost entirely offset in normal years by existing and planned conservation and water reclamation projects. However, in drought years EBMUD's present supply is not sufficient to meet its needs, even with substantial rationing. Therefore, in the next 20 years increased flows for senior water rights holders and for resource protection in the Mokelumne River and the San Francisco Bay/Sacramento–San Joaquin River Delta will reduce the available supply of water for the EBMUD service area.

Besides obtaining more water, it is EBMUD's policy to maintain a high-quality water source to meet customer expectations and best protect public health. Like other agencies throughout the state and nation, EBMUD must meet increasingly stringent drinking water standards set by EPA and the California Department of Health Services. General agreement exists among water users and the regulatory community that the highest quality water source provides the safest end product for municipal consumers. California drinking water quality laws and regulations set a tougher standard than federal law.

Need during Mokelumne Supply Outages

EBMUD needs a supplemental water supply not only to reduce deficiencies during a drought, but as an alternative supply in case of a catastrophic event or major maintenance at Pardee Dam or Reservoir. Currently, EBMUD is dependent on the Mokelumne River system to meet almost all of its customer needs. If Pardee Dam or Reservoir is damaged by a natural disaster or through other means, or if major scheduled repair or maintenance is required, most of EBMUD's water supply could be temporarily interrupted. EBMUD would be required to obtain its full needed supply from the terminal storage reservoirs in its service area. The amount of water available in these reservoirs is limited (only 138,000 af).

Under current conditions, if the terminal reservoirs could not meet customer demand until the Pardee delivery facilities resumed operation, no other source of water would be available to EBMUD; its customers could experience severe shortages in supply. Use of terminal reservoir supplies also could substantially reduce the water supply available for use during subsequent dry seasons. Provision of a supplemental water supply that is not dependent on operation of Pardee facilities would reduce the risk of diminished supplies during emergencies or other facility shutdowns.

Chapter 3

Methodology Used in the Alternatives Analysis

Introduction

The objectives of this alternatives analysis are to identify practicable and potentially feasible alternatives that meet most of the basic project objectives and purpose and need; to document the process by which alternatives are selected for inclusion in the EIR/EIS; and to describe the specific environmental impacts of each practicable alternative to the level necessary to identify the LEDPA, consistent with Section 404(b)(1) of the Clean Water Act. This chapter describes the methods used to perform this analysis.

Section 404(b)(1) of the Clean Water Act defines criteria to determine practicable alternatives to a proposed discharge of dredge or fill material into waters of the United States. An alternative is considered practicable if it is available and feasible after taking into consideration cost, existing technology, and logistics in light of the overall project purpose (40 CFR 230 10[a][1]). This alternatives analysis followed the Section 404(b)(1) guidelines to identify the LEDPA for the Freeport Regional Water Project.

Study Area

The study area for this alternatives analysis was broadly defined to include projects that could deliver water to either SCWA or EBMUD service areas, or both. Screening criteria generally limit the geographic area of practicable project alternatives; however, for this analysis the study area was not defined by the limits of the criteria.

Alternatives Considered

Potential alternatives that would meet most of the basic project objectives and the project purpose and need were identified using a variety of sources, including the following documents:

- February 1987 SCWA Zone 40 Master Water Supply Plan (James M. Montgomery Consulting Engineers),
- December 1989 SCWA Water Plan Supplement (Boyle Engineering Corporation),
- June 1995 Unadopted SCWA Zone 40 Water Supply Master Plan Update (Montgomery Watson),
- 1998 CVP Water Supply Contracts Under Public Law 101-514 (Section 206) Final EIS/EIR (U.S. Bureau of Reclamation and Sacramento County Water Agency 1998),
- October 1999 Water Forum Proposal Final EIR including the Draft EIR (EDAW 1999),
- December 2002 Draft Zone 40 Water Supply Master Plan Update (SCWA),
- January 1989 EBMUD Water Supply Management Program (WSMP) EIR,
- November 1992 EBMUD Updated WSMP EIS/EIR,
- October 1997 EBMUD Supplemental Water Supply Project EIR/EIS, and
- October 2000 EBMUD Recirculated EIR/EIS.

Potential alternatives were also identified based on EBMUD's and SCWA's existing and potential facilities and capabilities and extensive previous planning efforts undertaken by each agency. Each alternative evaluated in this report is described in detail in Chapter 6, "Project Alternatives and First-Stage Evaluation Results." Descriptions of facilities and operations, site and route maps, cost estimates, and other data necessary to describe each alternative were obtained and collected primarily from work done for the previous studies listed above.

Screening Criteria and Procedure

Screening criteria representing specific project assumptions and objectives were developed to determine which alternatives are practicable and potentially feasible for meeting most of the basic project objectives and the project purpose and need. These screening criteria are described in Chapter 5. The application of these criteria to each of the potential alternatives is described in Chapter 6. The screening criteria were used to determine whether each potential alternative could satisfy most of the basic project objectives and the project purpose and need, and whether the alternative was practicable and feasible. Planning assumptions and project objectives were held constant throughout the screening process to fairly evaluate the alternatives using each specific criterion.

Practicable alternatives were identified consistent with Section 404(b)(1) guidelines. Three stages of alternatives analysis were conducted. Each stage was more rigorous than the previous and focused with greater resolution on identifying practicable alternatives. Figure 3-1 is a diagram of the Section 404(b)(1) screening process and the three-tiered approach.

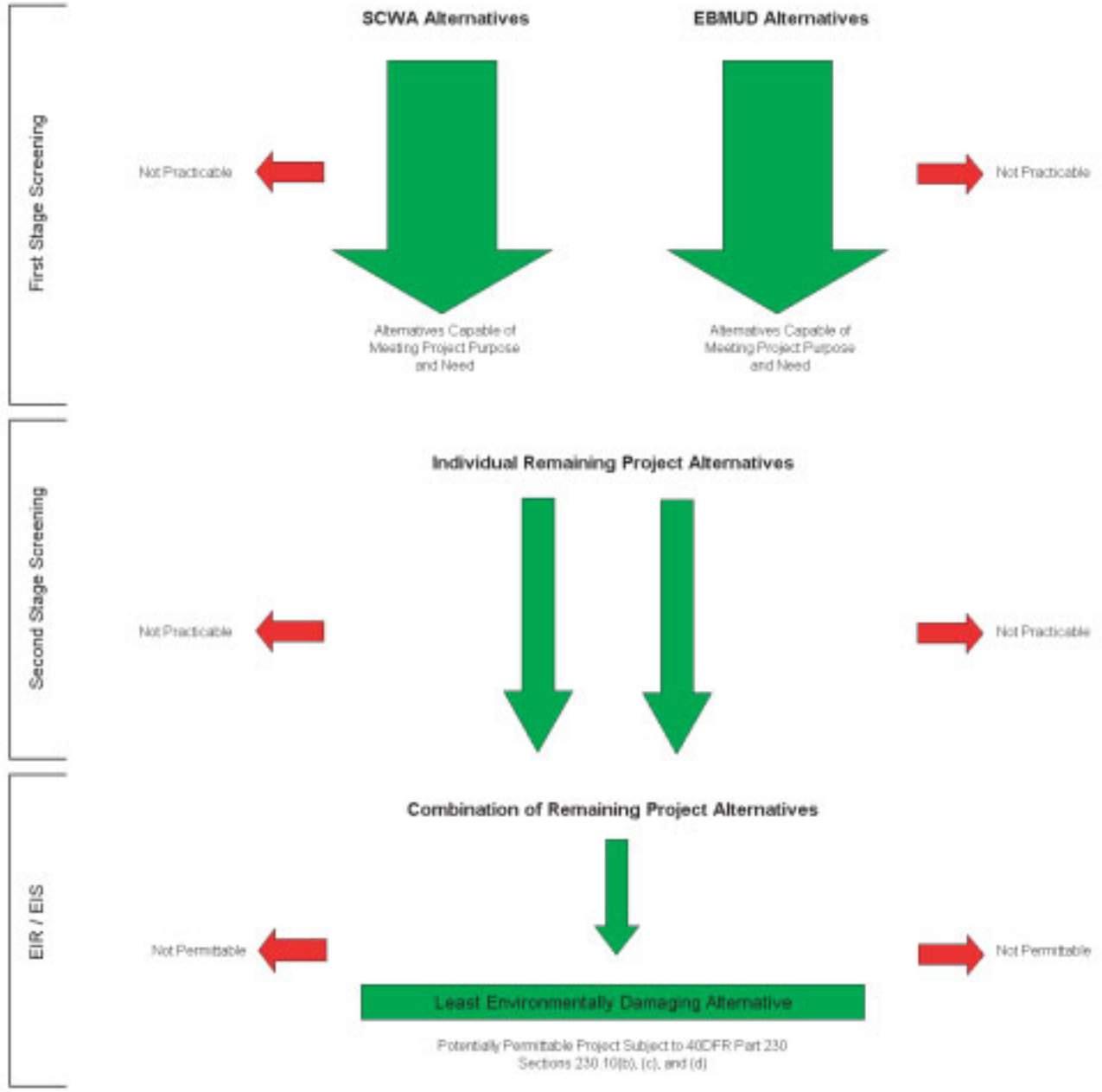

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Figure 3-1
Alternatives Screening Process

The results of these three stages are presented in Chapters 6, 7, and 8 (Chapter 8 will be completed after publication of the draft EIR/EIS). In each chapter, explanations are provided for each potential alternative found not to be practicable or not to meet most of the basic project objectives and the purpose and need of the project.

First-Stage Screening

The first stage of screening analyzed SCWA and EBMUD alternatives independently. This screening determined which alternatives under consideration were practicable and capable of meeting the project purpose and need by comparing each alternative to the screening criteria. The criteria were not strictly applied in the first-stage evaluation to ensure that alternatives for which insufficient specific information was available to clearly eliminate them during the first-stage screening were carried forward to the second stage.

Second-Stage Screening

The second stage of screening evaluated the remaining alternatives using the same criteria, but with more strict application than during the first stage and therefore a greater focus on the relative ability of each alternative to meet the criteria. Engineering aspects of each alternative were analyzed in detail, and environmental components were reviewed in more detail than in the first-stage evaluation. Alternatives carried forward to the third stage of screening were considered practicable for meeting the water needs of SCWA and/or EBMUD.

Third-Stage Screening

For the third-stage evaluation, alternatives providing water supply for both SCWA and EBMUD from the same water source and location will be combined, if feasible, to reduce potential impacts and cost. These "joint" alternatives will be evaluated alongside separate SCWA and EBMUD alternatives in the EIR/EIS. In addition to further evaluating the practicability and feasibility of the remaining alternatives, this screening step identifies the least environmentally damaging alternative, subject to 40 CFR, Part 230, Sections 230.10(b), (c), and (d).

Chapter 4

Assumptions Used in Developing Screening Criteria

Introduction

The need for the project is based on the conclusion reached by SCWA and EBMUD that existing water supplies will not be sufficient to meet their needs. This conclusion is based, in turn, on analyses by SCWA and EBMUD of projected demand based on land use changes in their respective service areas, future availability of water supplies, planned conservation and reclamation programs, and a comparison of future water supply and demand. This chapter summarizes these analyses, first for SCWA, then for EBMUD.

Sacramento County Water Agency

Water Demands

Projected SCWA water demands are typical of Central Valley urban areas. Seasonal variation in rainfall and water use causes the demand to vary. Water use is lowest in winter, while summer water use can be four times higher. In general, the highest monthly water demands in the Sacramento area occur in July and August, when landscape irrigation requirements, a major component of urban water use, are the greatest. Conjunctive use of surface water and groundwater resources is influenced by the seasonal variation in water demands. Since SCWA does not have long-term surface water storage facilities, use of groundwater and surface water supplies must be seasonally regulated.

Water demand projections prepared in 2002 for the Zone 40 service area were based on unit water demand factors expressed in acre-feet of water used annually per acre of land (AFA/ac). Unit demand factors for various land use designations were developed in the May 1995 Sacramento Area Water Demand Study developed by Boyle Engineering for the Water Forum. The Zone 40 study area included the wholesale service areas of Elk Grove Water Service (previously Elk Grove Water Works) and community areas throughout Zone 40 that are projected for development under the County of Sacramento General Plan. A detailed land

use analysis in Zone 40 estimated current and future acreage by land use category to develop the total water demand.

The base factors were adjusted slightly to reflect actual production demands by comparing estimated water use demands to the actual water use for each service area in the Zone 40 study area. The unit water demands were then refined so that the estimated total water use matched the actual total water use (using 1992 use levels). Additional information on the development of these factors can be found in the June 1995 Zone 40 Water Supply Master Plan Update (Montgomery Watson 1995) and the 2002 Draft Zone 40 Water Supply Master Plan.

The net estimated water demand of approximately 109,500 AFA for the buildout in Zone 40 (considering the use of recycled water) is equivalent to the water demand of approximately 165,000 homes. The water demand estimate is summarized in Table 4-1 below.

Table 4-1. Updated Expanded Zone 40 Water Demands

Demand Source	Approximate Water Demand (AFA)
Zone 40 total demand (with 8% Level of Water Conservation)	140,500
Additional water conservation[a]	(26,500)
Recycled water	(4,500)
Total conjunctive use	109,500

[a] Gradual implementation of the 16 best management practices included in the Memorandum of Understanding Regarding Urban Water Conservation, described under "Water Conservation," is expected to increase the level of water conservation from 8% to a maximum of 25.6%. Conversion from 8% to 25.6% water conservation =(1-0.256)/(1-0.08) = 0.809. Additional water conservation = Zone 40 total demand x (1-0.809)

Source: Sacramento County Water Agency 1998 and the 2002 Zone 40 Water Supply Master Plan Update (draft) (Montgomery Watson Harza 2002).

Water Supply

SCWA's primary sources of water for Zone 40 are its existing P.L. 101-514 CVP water supply contract, commonly known as the "Fazio contract," an anticipated assignment of a portion of Sacramento Municipal Utility District's (SMUD's) existing CVP water supply contract, potential appropriative water rights on the American and Sacramento Rivers, potential transfers of water from areas within the Sacramento Valley, and groundwater in the central County basin. Table 4-2 summarizes the total surface water supplies from these sources assumed for facility planning. Each of these sources is described below, following a brief

summary of the Sacramento Area Water Forum Agreement, which sets the stage for some of the information presented later.

Table 4-2. Total SCWA Existing and Anticipated Surface Water Supplies[1]

Surface Water Entitlement	Estimated Long-Term Average Use[2]
P.L.101-514 CVP water supply contract	12,500 [3]
SMUD CVP contract assignments	25,500
Appropriated or transferred water	16,000
Other water supplies[4]	14,500
Total long-term average use	68,500

[1] Long-term average use of each individual supply is subject to minor change resulting from refinement of CALSIM modeling runs for Freeport Regional Water Project EIS/EIR. Total Long-Term Average Use will remain fixed at 68,500 AFA.

[2] Based on 73-year historical hydrology.

[3] 8,500 AFA to be diverted at SRWTP.

[4] Further described under "Other Water Supplies" below.

Sacramento Area Water Forum Agreement

Public agencies in the Sacramento area have been involved in a cooperative effort, known as the Sacramento Area Water Forum (Water Forum), designed to explore acceptable project alternatives that could bring additional high-quality water to Sacramento County, the City of Sacramento, and entities in Placer and El Dorado Counties. The common goal is to provide a safe, reliable water supply for the entire region while preserving fishery, wildlife, recreational, and aesthetic values along the lower American River.

The Water Forum is a diverse group of business and agricultural leaders, citizen groups, environmentalists, water managers, and local governments in the Sacramento area. In 1995, water managers in Placer and El Dorado Counties joined these groups. The members of the Water Forum developed a Water Forum Proposal for the effective long-term management of the region's water resources. The Water Forum Proposal was analyzed and reviewed in an EIR prepared and certified by the City and County of Sacramento. To signify approval of the Proposal, 40 Water Forum members signed the Water Forum Agreement in April 2000.

To achieve the Water Forum goals, all signatories of the Water Forum Agreement are committed to support and, where appropriate, participate in seven elements of the agreement:

- increased surface water diversions,

- actions to meet customers' needs while reducing diversion impacts on the lower American River in drier years,
- support for an improved pattern of fishery flow releases from Folsom Reservoir,
- lower American River habitat management ,
- water conservation,
- groundwater management, and
- participation in Water Forum successor effort.

SCWA participated in the Water Forum process and is a signatory to the Water Forum Agreement. The Water Forum Agreement supports SCWA's pursuit of additional water supplies and includes SCWA's need for increased surface water diversions. SCWA's "Purveyor Specific Agreement" also commits it to certain limitations on its use of water supplies. SCWA agreed to divert surface water at or near the mouth of the American River or from the Sacramento River. It agreed to limit its maximum surface water diversions to 78,000 AFA within the "South County M&I Users Group" area within Zone 40. An additional area within Zone 40 that overlaps the City of Sacramento's American River water rights settlement contract place of use is considered in the Water Forum Agreement. This area will need a long-term average of 9,300 AFA of surface water to meet its projected demand and up to 12,000 AFA in any single year. SCWA anticipates diverting up to 90,000 AFA in any single year to serve all of Zone 40. It also agreed to meet strict water conservation requirements specified in the Water Forum Agreement that are to be applied throughout the Sacramento region. In addition, the Water Forum Agreement sets the sustainable yield of the central County groundwater basin, from which SCWA pumps, at 273,000 AFA. Of that yield, SCWA expects to be able to produce a long-term average of approximately 41,000 AFA.

CVP Water Supply Contracts

In 1999, SCWA contracted with Reclamation for a CVP water supply under Public Law 101–514. This contract provides for the delivery of up to 22,000 AFA to meet the needs of Sacramento County, with up to 7,000 AFA of this amount delivered to the City of Folsom through a subcontract. This subcontract is intended to provide a long-term supply to the City of Folsom. Under this contract SCWA is authorized to receive up to 15,000 AFA depending on actual water needs and provided that it fully uses existing water entitlements within Sacramento County, implements water conservation and metering programs within the contract service area, and implements programs to maximize the conjunctive use of surface water and groundwater. This contract provides for Reclamation to reduce deliveries by up to 25% from the contract maximum during years when low runoff limits CVP supplies.

SMUD CVP Contract Assignments

The Sacramento Area Water Forum supports the development of water transfers and water contracts with existing entitlement holders. Consistent with the Water Forum Agreement, an agreement-in-principle has been signed between SMUD, the City of Sacramento, and SCWA. SMUD has an existing Reclamation contract. Under amendment to that contract, two assignments totaling 30,000 AFA of water would be made to SCWA. As part of the Water Forum Agreement, SCWA's Zone 40 would provide groundwater supply and delivery facilities to meet SMUD's dry-year water shortages.

The agreement to effectuate both assignments is currently being negotiated. The potential environmental effects of both assignments are undergoing CEQA environmental review and are addressed further under the EIR/EIS for the proposed Freeport Regional Water Project. The quantity of water to be obtained under the SMUD assignment could be offset completely or in part by some or all of the other water supplies described below.

Appropriative Water Rights

On May 30, 1995, the Sacramento County Board of Supervisors approved the submittal of an application to the State Water Resources Control Board (SWRCB) for the appropriation of water from the American and Sacramento Rivers. The amount of water available would be determined after an evidentiary hearing before the SWRCB, wherein environmental and public interests will be balanced with SCWA's need for water. This water, estimated to be diverted at an average rate of 16,000 AFA, could be used in conjunction with existing groundwater supplies to increase long-term groundwater yields. This quantity of water could be offset completely or in part by some or all of the other water supplies described below. The potential environmental effects of using this supply are assessed in the EIR/EIS for the Freeport Regional Water Project.

Other Water Supplies

As Zone 40 approaches buildout conditions in the future, more reliance on other sources of water or methods of supplementing groundwater yields will be necessary to comply with long-term average operational groundwater yield limitations while meeting buildout demand. Possible options for meeting this demand could involve the following actions:

- acquiring water through transfers from other water users upstream of SCWA diversion points,
- using the City of Sacramento's American River entitlements in that area of Zone 40 that is within the City's authorized American River Place of Use,
- supplementing natural recharge during wet years with existing supplies,

- using reclaimed water from the Sacramento Regional Wastewater Treatment Plant (Regional Plant) on an exchange basis, or
- acquiring additional appropriated water.

Water Conservation

Introduction

Section 10610.4 of the California Urban Water Management Planning Act specifies that "Urban Water Suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies." The act became part of the California Water Code with the passage of Assembly Bill 797 in 1983. Various bills amended the act; the latest was Senate Bill 553 in 1999–2000. The amendments expanded the issues to be addressed in the Urban Water Management Plan.

"The Act recognizes that water is a limited and renewable resource subject to ever-increasing demands and that conservation and efficient use of urban water supplies is a statewide concern. The Act also recognizes that planning for efficient use and implementation of those plans can best be accomplished at the local level."

Both SCWA and EBMUD participated in a statewide process of policy planning on conservation practices. This process culminated in 1991 with the drafting of the statewide Memorandum of Understanding (MOU) Regarding Urban Water Conservation, developed by the California Department of Water Resources (DWR) and the California Urban Water Conservation Council. The purpose of the MOU was to gain consensus among California urban water agencies and districts that long-term water conservation programs are a viable means of reducing water demand and that conservation should be considered on an equal basis with other water management options (Montgomery Watson 1995).

Included in the MOU were best management practices (BMPs) developed by a group of water agencies, public interest groups, and other interested parties to achieve effective water conservation by urban users. SCWA and EBMUD, as well as other agencies, have signed the MOU. SCWA and EBMUD use water conservation as a component of their water supply plans to reduce the overall demand for water. Each agency has integrated water conservation efforts into estimates of demand for water in its service area, as described below for SCWA and later in the document for EBMUD.

SCWA Water Conservation Program

Water conservation is integrated into SCWA's existing water demand assumptions. Consistent with the California Urban Water Management Planning Act, SCWA has prepared a comprehensive water conservation plan based on

Reclamation guidelines. The plan describes the implementation process of the BMPs developed by the California Urban Water Conservation Council. By 2010, SCWA intends to phase in, for Zone 40, all of the BMPs listed in the MOU. SCWA first focused conservation efforts on requiring ultra-low-flow toilets and service connection meters on new construction, eliminating water waste, and ensuring low water use in nonresidential landscaping. To integrate the remaining BMPs by 2010, SCWA developed a schedule of implementation divided into three phases:

- Phase I included school education programs, conservation pricing for metered commercial users, and nonresidential landscape and indoor audits. This phase took place in 1996 through 1997.
- Phase II, currently underway, includes residential metering and billing based on metered usage for homes with meters already installed, as well as distribution system audits and repairs.
- Phase III, to be implemented in 2005–2010, includes:
  - retrofitting residential houses with meters where meters currently are not present,
  - billing based on metered usage,
  - auditing and retrofitting residential plumbing,
  - mandating replacement of non-ULF toilets upon transfer of ownership, and
  - providing financial incentives to encourage the purchasing of water conservation devices.

After all conservation phases are implemented, water conservation is expected to increase from the current 8% conservation level to a maximum conservation level of 25.6%.

Recycled Water

Water recycling relies on the use of treated wastewater. Recycled water is water that, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would otherwise not occur, and is therefore considered a valuable resource. The intent of using recycled water is to supplement existing potable water sources to meet future water demands and reduce demands for potable water supplies.

SCWA is implementing recycling activities in the western portion of Zone 40 and is investigating the potential to incorporate additional recycled wastewater use into its long-term water supply management strategy. Currently, regulations limit the use of recycled water for certain purposes, such as the California Department of Health Services prohibition against using reclaimed water for domestic consumption. Water reclamation activities currently in use are integrated into the water demand assumptions described later in this chapter.

Current projects, which use recycled water from the Regional Plant, will serve public landscaped areas such as parks and roadway medians in the Laguna and Franklin communities that are west of Interstate 5 and south of Elk Grove Boulevard between Interstate 5 and State Route 99. The potential to use additional recycled or remediated water throughout Zone 40 is being studied. Recycled water from the Regional Plant could be used to meet additional irrigation, nonresidential, commercial, and industrial demand in central Zone 40 and for either in-lieu groundwater recharge in agricultural areas or for artificial recharge. Remediated groundwater from the Aerojet and Boeing groundwater extraction and treatment activities could serve for nonpotable use in eastern Zone 40.

Comparison of Future Water Supply and Demand

The estimated water demand of approximately 109,500 AFA for the Zone 40 area will be supplied by a combination of groundwater and surface water. The long-term average groundwater use is projected to be 41,000 AFA. This is consistent with SCWA's allocation of the sustainable yield of the central County aquifer, as indicated in the Water Forum process. In dry years, there will be more reliance on groundwater because reductions in surface water supplies are expected to occur. Conversely, in wet years, when full surface water supplies are available, groundwater use can be reduced. The Water Forum stakeholders agreed that a supplemental surface water supply of up to 78,000 AFA is reasonable to meet the projected buildout demand of SCWA's portion of the "South County M&I Users Group" area demand. Up to an additional 12,000 AFA of surface water for Zone 40 outside this area will be needed. Thus the maximum SCWA may divert in any single year could be up to 90,000 AF in Zone 40. As described above, on the average, SCWA will require 68,500 AFA of surface water to meet Zone 40 water demands.

East Bay Municipal Utility District

Water Demands

The anticipated demands for EBMUD customers are described below. Water demands take into account the conservation and water recycling activities, described later in this chapter.

EBMUD experienced a rapid increase in water use between 1950 and 1970, with demand at 200–220 MGD in nondrought years after 1970. Sharp reductions in demand occurred as a result of cutbacks during the two most recent droughts, in 1976–1977 and 1987–1992. Lower demand levels in wetter years immediately following these droughts reflected changes in customer water use and success in implementing conservation practices. Although much of the drought management effort in 1977 was aimed at short-term demand reductions in

response to the drought, long-term reductions were realized because of structural changes, such as modification by industries of water-using equipment.

EBMUD's estimations of water demand over time are supported by two recent studies: the 1993 WSMP and the Districtwide Update of Water Demand Projections (2000 Demand Study). The purpose of the 1993 updated WSMP was to provide an adequate water supply at the projected year 2020 level of development with rationing limited to 25% of normal water demand levels during drought (East Bay Municipal Utility District 2001). This level of rationing translates to 35–45% for single-family homes. The 2000 Demand Study projected water demands through 2030.

Both the 1993 updated WSMP and the 2000 Demand Study based water demand projections on population growth. However, the 2000 Demand Study employed an improved method, basing projected demands on 17 different land use categories—five residential and 12 nonresidential. This method allowed for a more detailed and potentially more accurate demand projection by breaking down the regional characteristics of land use categories and reflecting future land uses designated in adopted general and specific plans of cities and counties in the EBMUD service area. The 2000 Demand Study forecast a demand of 277 MGD by 2020, adjusted to 229 MGD when savings from conservation and recycled water programs were taken into account. Table 4-3 summarizes the water demand projections in 5-year increments.

Table 4-3. Projected Demand

	Demand in Millions of Gallons per Day, by Year				
	2000	2005	2010	2015	2020
Customer demand[a]	230	242	257	267	277
Adjusted for conservation[b]	(8)	(14)	(20)	(27)	(34)
Adjusted for recycled water[c]	(6)	(9)	(11)	(12)	(14)
Planning level of demand	216	219	226	228	229

[a] Demand taken from the 2000 Demand Study.

[b] Conservation water savings taken from the Water Conservation Master Plan 1999 Annual Report. Two MGD in 1999 and 34 MGD for 2020. Linearly interpolated into 5-year increments.

[c] Recycled water use was obtained from staff in the Office of Recycling and from Chapter 5 of the UWMP.

Source: East Bay Municipal Utility District 2001.

The increase in districtwide demand between 2000 and 2010 reflects the compressed period during which many of the cities in the service area anticipate intense development activity. The continued but slower increase in demand beyond 2010 reflects a more built-out environment, with changes in land uses

resulting in higher densities of use (East Bay Municipal Utility District 2001). These results are consistent with projections in the 1993 updated WSMP, which forecast a 228-MGD demand for 2020 with conservation and recycling (East Bay Municipal Utility District 2001).

Water Supply

Approximately 95% of EBMUD's water supply is Mokelumne River water collected in Pardee Reservoir. The remaining estimated 5% of the supply is local runoff collected in terminal storage reservoirs owned and operated by EBMUD in the EBMUD service area. EBMUD also has signed an amendatory contract with Reclamation for a supply of CVP water. All of these sources are described in greater detail below.

Mokelumne River Water Supply

EBMUD has water rights and facilities to divert up to 325 MGD from the Mokelumne River, subject to the availability of Mokelumne River runoff and the prior water rights of other users. EBMUD's position in the hierarchy of Mokelumne River water users is determined by a variety of agreements between Mokelumne River water rights holders, the appropriative water rights permits and licenses that have been issued by the state, pre-1914 rights, and riparian rights. The following factors directly affect the amount of water available to EBMUD for diversion under its 325-MGD entitlement:

- upstream water use by prior right holders;
- downstream water use by riparian and senior appropriators, as well as other downstream obligations, including fishery flow release requirements for the conservation and development of fish and wildlife resources. The flow release requirements are in accordance with SWRCB Bay Delta Program Decision 1641 and EBMUD's amended Federal Energy Regulatory Commission (FERC) license;
- drought, or less-than-normal rainfall for more than a year; and
- emergency outage.

EBMUD is active in projects in the Mokelumne Basin that will improve management of the available water supply. One example is an agreement between EBMUD and Amador Water Agency that EBMUD will share in funding the Amador Water Transmission Project, with the primary objective of eliminating the current substantial leakage in the Amador Canal.

Pardee Dam and Reservoir

Mokelumne River water from the 575-square-mile watershed on the western slope of the Sierra Nevada is collected at Pardee Dam and Reservoir, 38 miles northeast of Stockton, near the town of Jackson. The reservoir has a maximum capacity of 197,950 af at spillway crest elevation. Pardee Reservoir is used principally for municipal water supply and for power generation, and secondarily to manage water temperature in Camanche Reservoir. Raw water from Pardee Reservoir is transported 91.5 miles to East Bay water treatment plants and terminal reservoirs through the Pardee Tunnel, the Mokelumne Aqueducts, and the Lafayette Aqueducts. EBMUD takes its full allocation out of Pardee Reservoir. Water leaving Pardee Reservoir takes 30 to 45 hours, flowing by gravity, to reach the Bay Area

Camanche Dam and Reservoir

Camanche Dam is located 10 miles downstream of Pardee Dam on the Mokelumne River. Capacity at the spillway crest elevation is 417,120 af. Camanche Reservoir, operated jointly with Pardee Reservoir, stores water for irrigation and streamflow regulation, thereby providing flood protection, water to meet the needs of downstream water rights holders, and water for fisheries and riparian habitat.

Mokelumne Aqueducts

Raw water from Pardee Reservoir moves through the Pardee Tunnel to the three Mokelumne Aqueducts near Valley Springs in Calaveras County. The Mokelumne Aqueduct consists of three steel pipelines extending 82.2 miles from the Pardee Tunnel to the east end of two Lafayette Aqueducts in Walnut Creek. The Lafayette Aqueducts extend about 7.1 miles to Orinda. From Walnut Creek, the water is directed into three filter plants and/or to EBMUD's five terminal storage reservoirs. The system can operate at a maximum of 200 MGD under gravity flow. By operating the Walnut Creek Pumping Plant, aqueduct capacity can be increased to 326 MGD.

Terminal Storage Reservoirs

EBMUD maintains five terminal reservoirs in its East Bay service area: Briones, Chabot, Lafayette, San Pablo, and Upper San Leandro Reservoirs. These reservoirs are used for several functions:

1. To regulate EBMUD's Mokelumne River supply in the winter and spring—Mokelumne River water is stored in winter and spring, when Sierra Nevada runoff occurs and demand is low, for use during the high-demand period in summer.

2. To augment EBMUD's water supply with local runoff—storm runoff is collected and stored from the reservoir watersheds.
3. As emergency sources of supply in case of extended drought or damage to tunnels, pumping plants, or aqueducts—a minimum of 120 days of supply at normal demand is maintained for use during supply disruptions or outages.
4. For environmental and recreational benefits to the communities of the East Bay—the 26,000 acres of watershed land on which these reservoirs are located provide open space and water-related recreational opportunities.

Two of the terminal reservoirs, Upper San Leandro and San Pablo Reservoirs, convey water to three treatment plants that serve the northern and southern portions of the EBMUD distribution system west of the Oakland-Berkeley Hills. These two reservoirs and a third, Briones Reservoir, are used to store water before treatment and to further regulate the Mokelumne River supply to provide emergency water and store local runoff. The remaining two reservoirs, Lafayette and Chabot Reservoirs, are reserved for emergency standby supply and, along with San Pablo Reservoir, are used extensively for recreation.

Capacities of the terminal reservoirs are listed in Table 4-4. Together, the terminal reservoirs have a usable capacity of approximately 138,000 af.

Table 4-4. Terminal Reservoir Characteristics

Reservoir	Capacity (TAF)	Water Sources
Briones	60.5	Mokelumne Aqueducts, Bear Creek
Chabot	10.4	Mokelumne Aqueducts, San Leandro Creek, Upper San Leandro Reservoir
Lafayette	4.3	Lafayette Creek[a]
San Pablo	38.6	Mokelumne Aqueducts, San Pablo Creek, Bear Creek, Briones Reservoir
Upper San Leandro	41.4	Mokelumne Aqueducts, San Leandro Creek and tributaries

[a] The raw water line for the Mokelumne Aqueducts was disconnected from the Lafayette Reservoir in 1971.

Source: East Bay Municipal Utility District 2001.

Bixler Emergency Pumping Plant

EBMUD facilities also formerly included the Bixler Emergency Pumping Plant (Bixler), located in Werner Dredger Cut, Mile 2.9 (Indian Slough), approximately 5 miles east of Brentwood. Completed in 1989, the Bixler facility

was intended for emergency purposes when EBMUD's normal water supply was disrupted or inadequate to meet customer needs. The capacity of Bixler was 90 cubic feet per second (cfs). On February 22, 1989, the Corps issued a permit with an expiration date of December 31, 1989, to operate Bixler. Bixler was never operated and the permit expired. Subsequently, permits were renewed twice, with the last renewal expiring on December 31, 1993. These facilities have been dismantled and are no longer operational.

Existing EBMUD—Reclamation Amendatory Water Service Contract

In 1970, EBMUD signed a water services contract with Reclamation, which administers the CVP, for the delivery of American River water from the Folsom South Canal. In 2001, this contract was amended to provide for delivery of water from three possible diversion points, with defined water amounts for each location. At Freeport on the Sacramento River, EBMUD can take delivery of up to 133,000 af of American River water annually, not to exceed a total of 165,000 af in a 3-consecutive-year period of drought in any year when EBMUD's total system storage is forecast to be below 500,000 af. At Site 5 on the American River (upstream of Interstate 5 crossing), as described in the December 2000 EIS for the Amendatory Contract, and from the Folsom South Canal diverting water from the Nimbus Dam, EBMUD can take delivery of up to 150,000 af annually. The contract details the required conditions specific to each diversion point that must be met before taking delivery of the entitled water.

EBMUD has been paying for water under the contract since shortly after signing the original water services contract with Reclamation in 1970, although only one small quantity of water has been delivered under the contract.

Water Conservation

The information in this section was taken primarily from the Urban Water Management Plan (UWMP) (East Bay Municipal Utility District 2001). This document is available for inspection at EBMUD's headquarters in Oakland, California. EBMUD also participates extensively in statewide water conservation planning efforts. Please see the introduction to the Water Conservation section under SCWA for information.

EBMUD has been a leader in water conservation for more than thirty years and currently supports one of the largest and most comprehensive demand management programs in California. EBMUD adopted UWMPs in 1985, 1991, 1996, and 2000. The latest UWMP is a revision and update of the 1996 adopted plan. It was designed not only to satisfy the requirements of the California Urban Water Management Planning Act but also to provide the public with an account of EBMUD's efforts in conservation and water recycling (East Bay Municipal Utility District 2001).

EBMUD's water conservation programs address both supply and demand. Demand-side conservation programs improve customer water-use efficiency and include incentives, education, support, and regulation. Supply-side water conservation programs improve water-use efficiency before or after use by the customer, and include distribution-system leak detection, repair programs, and water recycling programs.

For fiscal years 1990 through 2000, EBMUD dedicated $26.1 million toward the operating and capital expenses of its water conservation program. More information on EBMUD's efforts to promote both demand-side and supply-side conservation is provided in this section.

Demand-Side Water Conservation

In October 1993, the EBMUD Board of Directors (Board) approved the updated WSMP, which set a conservation goal of 33 MGD for 2020. The Board directed staff to prepare a Water Conservation Master Plan (WCMP) and to report annually on the status of the conservation program. The WCMP was designed to meet 2020 water savings goals through a cost-effective conservation program while maintaining EBMUD's long-standing emphasis on voluntary conservation by customers. The WCMP was adopted in May 1994, and a pilot program was implemented. The programs defined in the WCMP were projected to save 16 MGD. An additional 17 MGD was expected to result from "natural replacement," the installation of conservation hardware such as toilets, showerheads, and faucets independent of an EBMUD program. In 1998, the water savings goal was increased to 34 MGD to offset demand from anticipated annexations to EBMUD's service area.

An evaluation of the pilot program effort (over 3 years) determined that the conservation program was not on target to meet the 2020 water savings goals. Five alternative programs were presented to the Board, and one program that increased the conservation budget by 86% and staffing by 46% was approved in 1999. This expanded program was designed to meet the 2020 goals.

Incentives are part of EBMUD's demand-side conservation program to improve customer water-use efficiency. Incentives include residential, industrial, commercial, and institutional audit and rebate programs; water-saving device distribution programs; and education and outreach activities, including publications, presentations, community events, and displays.

As part of current planning efforts, and through the development of the WCMP (East Bay Municipal Utility District 1994), EBMUD continues to participate in a statewide process of policy planning on conservation practices. BMPs to achieve effective water conservation by urban users were developed by a group of water agencies, public interest groups, and other interested parties. A statewide MOU to implement the BMPs was signed by EBMUD in 1993 (East Bay Municipal Utility District 1993). EBMUD is in full compliance with the MOU.

Supply-Side Conservation

EBMUD's water distribution system includes more than 3,980 miles of pipeline. The pipelines are vulnerable to leaks, corrosion, and other damage or water loss. EBMUD has two crews equipped with electronic sound-detection equipment that survey approximately 300 miles of pipeline per year for leaks. Systematic replacement of troublesome pipes, cathodic protection, and improved leak detection methods have stabilized the leak rate, indicating that the overall system rate of deterioration is not increasing with time. EBMUD's Pipeline Replacement Program documents main failure through the maintenance and evaluation of leak records. Recurring leaks on any segment of pipeline trigger an economic evaluation that compares the cost of replacement to the present worth of projected costs associated with continued maintenance of the pipeline. EBMUD's current goal is a renewal rate of 10 miles per year. The estimated water saved as a result of the leak detection program ranges from 0.5 to 1.5 MGD each year.

EBMUD's corrosion control program encompasses the Mokelumne Aqueducts, distribution piping, and facilities. The program has effectively reduced corrosion-related deterioration of EBMUD's infrastructure, resulting in substantial leak reduction and savings of water.

Recycled Water

EBMUD completed a draft "Water Reclamation Master Plan" in 1991. The District currently has six recycled water projects in place, which results in savings of approximately 6 MGD of potable water. Future water recycling efforts are expected to reduce demands on potable water by an additional 8 MGD. The six existing projects use wastewater from four treatment facilities owned and operated by three different utilities in EBMUD's service area and were selected because they are cost effective.

In addition to the fact that recycled water is essentially a drought-proof supply, there are economic incentives for current customers to convert from potable to recycled water. Current EBMUD policy is that the District will pay for customer retrofits to convert a potable water system to a recycled water system if determined to be cost effective. In addition, recycled water customers are not subject to the 4% Seismic Improvement Program surcharge or to any drought surcharge that the EBMUD Board might impose.

For fiscal years 1990 through 2000, EBMUD spent $89.4 million on the operating and capital expenses related to its recycled water program.

Future Recycled Water Projects

As part of the WSMP, seven geographical areas or Water Reuse Zones were established within EBMUD's ultimate water service boundary, based on water supply and demand locations. The zones also were established based on proximity to existing supply sources. The wastewater treatment plants that were identified as feasible sources of recycled water for each Water Reuse Zone are listed in Table 4-5. Recycled water projects were proposed for each of the seven Water Reuse Zones. (The recycled water project in Zone G, which provided irrigation water for Caltrans, is no longer in operation.) Project objectives include maximizing the volume of recycled water delivered to meet customer demands for irrigation, commercial, and industrial uses while maintaining economic feasibility.

Table 4-5. Recycled Water Supply for Each Water Reuse Zone

Water Reuse Zone Designation	Water Reuse Zone	Recycled Water Supply Source
A	Oakland/Berkeley	EBMUD's Main Wastewater Treatment Plant
B	San Leandro/Alameda	San Leandro Water Pollution Control Plant
C	Hercules/Pinole/Rodeo	Rodeo/Hercules/Pinole Joint Outfall
D	Richmond	West County Wastewater District
E	San Ramon Valley	Dublin San Ramon Services District Wastewater Treatment Plant
F	Central Contra Costa	Central Contra Costa Sanitary District
G	Castro Valley	Livermore–Amador Valley Wastewater Management Agency Export Facilities

EBMUD has two water recycling projects scheduled for implementation before 2010. The East Bayshore Recycled Water Project is currently under construction, and the San Ramon Valley Recycled Water Project is in the design phase.

Also, EBMUD has four water recycling projects in the planning stage. These projects are the Franklin Canyon Project (Phases I and II), the Lamorinda Project (Phase I), the San Leandro Expansion Project (Phase III), and the North Richmond Water Reclamation Plant (NRWRP) Expansion Project.

Table 4-6 summarizes the projected demands for recycled water for existing and proposed recycled water projects through 2020.

Table 4-6. Projected Quantity of Recycled Water Needed for Existing and Proposed Projects

	Recycled Water Needs in MGD, by Year				
Project	2000	2005	2010	2015	2020
Existing Projects					
EBMUD Main Wastewater Treatment Plant	1.9	1.9	1.9	1.9	1.9
Richmond Country Club	0.15	0.15	0.15	0.15	0.15
Metropolitan Golf Links	0	0.16	0.16	0.16	0.16
Chuck Corica Golf Complex	0.36	0.36	0.36	0.36	0.36
Harbor Bay Parkway	0.02	0.02	0.02	0.02	0.02
Caltrans I-580 and I-880	0.04	0.0	0.0	0.0	0.0
Chevron Refinery (3 cooling towers)	3.4	3.4	3.4	3.4	3.4
Subtotal of Existing Projects	*5.87*	*5.99*	*5.99*	*5.99*	*5.99*
Proposed Projects					
Lamorinda	0	0	1.0	1.0	1.0
San Ramon Valley Phases I and II	0	1.1	2.4	2.4	2.4
East Bayshore Phases IA, IB, and II	0	0.7	2.2	2.5	2.5
San Leandro Phase III	0	0	0	0.8	0.8
Franklin Canyon Phases I and II	0	0	0	0	0.3
NRWRP Expansion Project	0	0	1.0	1.0	1.0
Subtotal of Proposed Projects	*0*	*1.1*	*6.6*	*7.7*	*8.0*
Total	**5.87**	**8.73**	**11.73**	**12.43**	**13.99**

Mokelumne Water Supply Reliability

EBMUD's experiences during recent droughts demonstrate that its water supply system is not sufficiently reliable to provide safe, continuous water service during droughts.

The District's "Water Supply Availability and Deficiency" policy limits drought demand reductions to no more than 25%. This drought rationing level is imposed in addition to the District's long-term conservation and reclamation programs that are projected to save 48 MGD every year, reducing 2020 demand levels from

277 MGD to 229 MGD. Instead of immediately imposing 25% rationing whenever dry periods occur or postponing action until drought conditions are severe and supplies severely depleted, the District has developed guidelines that call for increasing amounts of rationing as supplies become increasingly diminished. By imposing some rationing in early years of potentially prolonged drought periods, the necessity of more severe rationing in subsequent years is minimized. These guidelines are shown in Table 4-7 below

Table 4-7. Drought Management Program Guidelines

Drought Stage	Projected End-of-September Total System Carryover Storage	Reduction Goal
None	500 TAF or more	None
Moderate	500–450 TAF	0 to 15%
Severe	450–300 TAF	15 to 25%
Critical	300 TAF or less	25%

Source: East Bay Municipal Utility District 2001

In a span of 17 years between 1976 and 1992, EBMUD experienced the most extreme two-year drought and the most extreme six-year drought since records of precipitation and runoff have been kept for the Mokelumne basin. During the 47 years prior to 1976, the Mokelumne River was able to meet the full water supply demand of District customers in every year. In contrast, the District has had to ration customers in 6 of the 27 years since 1976.

The worst drought event in EBMUD's history was the 1976–1977 drought, when runoff was only 25% of average and total reservoir storage decreased to 39% of normal, despite EBMUD's customer's 39% rationing efforts (Figure 4-1). During this drought, the critically dry year of 1977 was followed by a very wet year (1978), allowing the system to recover rapidly. However, at the end of the 1977 water year, in September 1977, EBMUD could not know how much precipitation and runoff would occur the next year. Thus, EBMUD, as well as all other water suppliers in the State, could not allow its storage to become fully depleted at the end of 1977 in anticipation of plentiful water the following year. Had it done so, and if 1978 had turned out to be a third dry year, EBMUD would not have had sufficient water to meet its needs or its downstream obligations.

While 1976–1977 was the worst drought on record, it is prudent to assume that a similar event will occur at some time in the future but without a very wet year like 1978 immediately following it. To plan for the possibility of such an event in the future, EBMUD has developed a three-year drought planning sequence. The first and second years of this drought planning sequence have the same runoff as occurred in 1976 and 1977, respectively. Although the District could have assumed that the third year runoff could have been as low as the second year (i.e. use the historic low of 1977 runoff of 129 TAF) it instead assumed a higher runoff by averaging the first and second year which results in the third-

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Figure 4-1
Pardee Reservoir on March 25, 1977
with 47,000 Acre-Feet in Storage

year amount of 185 TAF. It was further assumed that such a severe drought would not continue beyond the third year of this sequence and that all accessible water in storage in EBMUD water supply system, including all water in its East Bay Reservoirs, would be depleted by the end of the third drought year. Therefore, the minimum storage level under this planning event is equal to the aggregate total amount of EBMUD's inaccessible, or dead, storage of 35.4 TAF.

Given the degree of uncertainty in calculating drought probabilities, the lack of redundancy in the EBMUD water supply system, and the inability to predict the end of droughts during real-time events, EBMUD selected the drought planning sequence described above for long term water supply reliability planning. This long-term planning process, however, should not be construed to eliminate the immediate need for supplemental water based on actual historical conditions. In recent years, the Mokelumne River supply has not been sufficient to meet even existing needs during droughts without rationing. After comparing water supply reliability planning approaches taken by other California water agencies, and after exhaustive studies of its own system reliability, EBMUD concludes that prudent planning requires it to obtain a supplemental source of water to provide a reliable water supply for meeting future drought conditions. Based on its long term water supply planning the District has determined that a supplemental supply of 185 TAF would be sufficient to meet the District's water supply needs during dry periods, taking into account implementation of the District's expanded conservation and reclamation programs. This determination also assumes implementation of emergency water use reduction programs during droughts to reduce demand by an additional 25%. The earlier a supplemental water supply is delivered during a drought, the more effective it becomes for water supply purposes. The District's long-term supplemental supply needs are tabulated below.

Table 4-8. Supplemental Supply Needs

Supplemental Supply	
For consumptive use reliability	109 TAF
For public trust resources	33 TAF
For public trust gainsharing	20 TAF
Inability to achieve full 25% rationing in first drought year	13 TAF
For increased evaporation	10 TAF
Total	**185 TAF**

Chapter 5

Development of Screening Criteria

Introduction

This chapter describes the screening criteria and how they were developed to evaluate whether alternatives considered satisfied the project purpose, need, and objectives, and whether they were practicable and feasible.

Screening Criteria

Environmental and Biological Criterion

> Criterion: An alternative, either individually or in combination with other possible alternatives, must not result in unacceptable environmental impacts.

State and federal environmental regulations require disclosure of any major unacceptable environmental impacts associated with each feasible project alternative. As discussed in Chapter 1, Section 404(b)(1) guidelines require an applicant for an individual Section 404 permit to ensure that the LEDPA is used to meet the basic project purpose. Certain alternatives may have significant environmental impacts that render them impracticable. In some cases, an alternative may have much more severe environmental impacts than other practicable alternatives. In that case, the alternative with major impacts cannot be considered the LEDPA that meets the basic project purpose.

For an alternative to satisfy this criterion, it must not be anticipated to result in major environmental impacts that have been previously identified as unacceptable (for example, during a previous review process) or that would render the alternative impracticable or substantially inferior to other feasible alternatives.

Technical and Operational Criterion

> Criterion: An alternative must not have any significant geotechnical or engineering problems, involve questionable or untested technology, or depend on a site or resource that is unreliably available.

Because meeting water quality and reliability objectives will be costly with any practicable alternative, FRWA should not risk implementing an alternative that could fail to meet the basic project purpose because of geotechnical or engineering problems; unsound, untested, or questionable technology; or an unreliable project site or resources.

Existing technology must be adequate to ensure that the FRWA member agencies' basic project purpose and project objectives can be met. Reliance on any questionable or untested technology would expose FRWA to substantial risk in achieving the basic project purpose. Some alternatives may rely on technology so advanced that the alternative would not be cost effective. Such alternatives would fail to satisfy this technical and operational criterion.

Also, alternatives that depend on sites or resources that may not be available would fail to satisfy this criterion. An example of an unreliably available site is one that is inaccessible to FRWA or unavailable for construction of project facilities. Unreliably available resources include water supplies that are not practicably attainable.

Jurisdictional Criteria

> Criterion: An alternative must not require FRWA to obtain permits and approvals that reasonably cannot be obtained, and must be consistent with local policies.

Necessary permits and agreements from public agencies must be foreseeably obtainable. An alternative cannot be deemed practicable if necessary permits or agreements cannot be obtained or if permit acquisition or agreement finalization is so costly or time consuming that the basic project purpose cannot reasonably be met. The degree of threatened or anticipated political opposition or litigation over permit issuance would not necessarily eliminate an alternative from consideration but could be used as a discriminating criterion.

> Criterion: An alternative must not require approvals, agreements, or coordination activities (between FRWA member agencies and other agencies or jurisdictions) that are infeasible.

Any alternative requiring joint participation between FRWA member agencies and one or more other agencies or jurisdictions could require detailed agreements and intensive coordination among project participants. Some alternatives also could require special approvals or revision, amendment, or reconsideration of a current contract, agreement, or previous court decision. For an alternative to

satisfy the second jurisdictional criterion, it must not involve any such requirements that likely would be infeasible based on a history of unproductive negotiation efforts, potential conflicts of interest, general inability of one or more parties to fulfill proposed agreements, or similar reasonable indications of jurisdictional infeasibility.

Economic/Cost Criteria

Criterion: An alternative must be of reasonable cost while meeting most of the basic project objectives.

This economic criterion focuses on identifying the alternative that would best satisfy most of the basic project objectives at the most reasonable cost. For the economic analysis, alternatives were first considered for their ability to meet the project objectives, which have been incorporated into the other screening criteria. The alternatives that were not precluded from further analysis (based on the other screening criteria) were then compared by their estimated costs.

Criterion: An alternative must minimize costs to ratepayers.

Minimized capital, operational, and maintenance costs would minimize costs to ratepayers. An alternative should minimize costs to the extent feasible while meeting most project objectives.

Water Quality Criteria

Criterion: An alternative must meet drinking water standards after treatment (Title 22, California Code of Regulations [CCR]).

Criterion: An alternative, to the extent feasible, should take into account the policy of providing drinking water supplies from the best available source.

Criterion: An alternative must maintain current finished water quality.

The FRWA member agencies have a long history of securing, using, and protecting their high-quality sources of water. It is their intent to continue this practice, consistent with state and federal law and the applicable policies of their agencies.

To meet the water quality criteria, an alternative must provide a water supply of sufficiently high quality to be consistent with state and federal law and SCWA's and EBMUD's policies regarding supply. It should avoid diversion of effluent at Freeport outfall during reverse flow events in the Sacramento River, avoid production of groundwater from contaminated aquifers, and avoid inducing the migration of groundwater contamination. The FRWA member agencies seek to attain water supplies from the highest quality source available to minimize

treatment uncertainties and potential related health risks to customers. Available data must provide strong evidence that health risks associated with a water supply source are minimized or avoided, and uncertainties regarding the actual degree of these health risks must be small.

Furthermore, an alternative must be of similar or higher quality than existing supplies. Customer satisfaction is an important measure of maintaining current finished water quality, especially with regard to taste, odor, and appearance.

In summary, an alternative must allow FRWA member agencies to maintain the high quality of both their raw and treated water supplies and reduce uncertainties regarding health risks to their customers. The water from the source under consideration must be capable of being adequately treated within a reasonable cost range so that water blended from new and existing supplies would not be of lesser quality than existing supplies. EBMUD's and SCWA's current water supply sources, their water treatment systems, and the quality of their raw and treated water supply, as measured by state and federal standards, are described in Attachment 1.

Timing/Schedule Criterion

> Criterion: An alternative must be capable of being implemented in a reasonable timeframe.

Through continued assessment of customer needs, FRWA has determined that 2010 is a reasonable deadline for implementation of the proposed project. An alternative that cannot feasibly be implemented by this deadline would not satisfy this criterion.

Water Supply Reliability Criterion

> Criterion: An alternative must increase system reliability by providing a reliable supplemental water source.

As discussed in Chapter 2, FRWA member agencies need a supplemental water supply independent of their current primary supplies (Pardee Reservoir for EBMUD and groundwater for SCWA).

For EBMUD, a supplemental supply is needed to ensure water supply reliability during scheduled and unscheduled facility outages at Pardee Reservoir. Under current conditions, EBMUD relies on diversion of Mokelumne River water at Pardee Reservoir for approximately 95% of its total water supply.

In the event of a catastrophic failure, emergency shutdown, or scheduled maintenance or repair of Pardee facilities, EBMUD currently must rely on

storage in the five existing terminal reservoirs in its service area to meet its entire customer demand.

Potential emergency scenarios capable of substantially interfering with EBMUD's ability to divert Mokelumne River water at Pardee Reservoir include:

- structural damage to Pardee Dam,
- a hazardous spill in or upstream of Pardee Reservoir or degradation of water quality resulting from a major flood,
- an extended drought resulting in temporary reductions in the amount of EBMUD's available water supply, and
- failure of EBMUD's intake or conveyance facilities at Pardee Reservoir.

For SCWA, a supplemental supply is needed to ensure water supply reliability. Such reliability can be achieved through providing surface water supplies under conjunctive use programs that help stabilize groundwater levels while providing adequate supplies to meet projected buildout demands in SCWA's service area. In the event of surface water facility outages, groundwater supplies can be relied on to provide service through the outage period. Under current conditions, SCWA relies on a limited amount of groundwater supply for nearly all of the water provided to Zone 40.

For an alternative to satisfy the water supply reliability criterion, it must be capable of:

- providing EBMUD with a water supply to supplement its limited emergency and drought storage supplies, and
- enabling SCWA to deliver existing and projected surface water supplies for conjunctive use in its service area.

Chapter 6

Project Alternatives and First-Stage Evaluation Results

Introduction

This chapter presents the results of the first-stage evaluation of potential project alternatives. The development of potential project alternatives was based on information regarding EBMUD's and SCWA's existing facilities and capabilities, as well as on the results of extensive planning efforts initiated by each agency and by the environmental scoping process implemented for the FRWP to date. This information was updated where necessary and appropriate. Sources of information regarding potential project alternatives include, but were not limited to, the following planning documents.

- January 1989 EBMUD WSMP EIR
- November 1992 EBMUD Updated WSMP EIS/EIR
- October 1997 EBMUD Supplemental Water Supply Project EIR/EIS,
- October 2000 EBMUD Recirculated EIR/EIS
- 1998 Central Valley Project Water Supply Contracts under Public Law 101-514 (Section 206) EIS/EIR
- December 2002 Draft Zone 40 Master Water Supply Plan Update

Many alternatives have been fully examined by each agency during the past 15 years. Each alternative previously described and analyzed, and rejected as infeasible or because of significant environmental issues, has been reviewed to determine whether any changes in circumstances warrant a reevaluation of the alternatives. In this chapter, each major alternative concept is described; each description is followed by a discussion of whether the alternative is capable of meeting most of the basic project objectives. This first-stage evaluation did not specifically identify practicable alternatives for meeting the basic project purposes, but it eliminated alternatives and combinations of alternatives that would not meet the project objectives.

The alternatives considered in this first-stage screening analysis are independent potential alternatives for EBMUD and SCWA. Subsequent stages of the

alternatives analysis will examine the potential for combining alternatives. For an alternative to be considered for further evaluation, it must be capable of meeting most of the basic project objectives and the project purpose and need and be potentially feasible. During this first-stage evaluation, if an alternative was clearly shown to not be capable of meeting one or more of the screening criteria, the alternative was eliminated from further consideration without a detailed evaluation of its ability to meet the remaining criteria. Also, alternatives that lacked enough specific information to clearly eliminate them during the first-stage evaluation were carried forward to the second stage (Chapter 7). Table 6-1 presents the alternatives considered in this first-stage screening process.

Additionally, a number of other alternatives have been addressed in the documents listed above. These alternatives were assessed to determine whether any changed circumstances would warrant their inclusion in this first-stage evaluation. These alternatives were found to be infeasible or not capable of meeting the project purpose. They are listed in Table 6-2, as is the reason for their exclusion from this evaluation.

SCWA Project Alternatives

American River Diversion

Under this alternative, SCWA would take delivery of surface water at a new intake location on the Lower American River. Two intake locations are analyzed. The first location is near the mouth of the Lower American River. At this new location, a new intake structure and pumping facilities with capacity of up to 85 MGD would be constructed. A new large-diameter, 8-mile-long raw water pipeline would extend from the intake structure through City of Sacramento surface streets to a new surface water treatment plant constructed in central Sacramento County.

The second location for potential diversion of Lower American River water would encompass the City's water intake pump and treatment facilities at the Fairbairn water treatment plant, located west of Howe Avenue on the American River. Currently, a vertical pump draws raw water through intake screens on each side of the intake structure.

The existing conventional treatment facility has a rated capacity of approximately 90 MGD. It is currently being expanded by the City. The available unused capacity of the plant, which would vary temporally, would be used by SCWA for the diversion and treatment of surface water. SCWA would divert up to 90,000 af from this location for use within the Zone 40 area. For both alternative options, ancillary facilities would be required to convey the treated water to SCWA's Zone 40.

Table 6-1. Alternatives Considered in First Stage Screening

SCWA	EBMUD
American River Diversion	American River Diversion
Sacramento River Diversion:	Sacramento River Diversion
▪ Option 1: Sacramento River Water Treatment Plant	Groundwater Banking/Exchange (Sacramento Basin)
▪ Option 2: Freeport	Delta Diversion
Groundwater Banking/Exchange (Sacramento Basin)	Enlarged Camanche Reservoir
Full Surface Water Reliance	Expanded Los Vaqueros Reservoir
Full Groundwater Reliance	Enlarged Pardee Reservoir
	Bollinger Canyon Reservoir
	Buckhorn Canyon Reservoir
	Cull Canyon Reservoir
	Curry Canyon Reservoir
	Delta Wetlands Project
	Kellogg Reservoir
	Duck Creek Reservoir
	Middle Bar Reservoir
	PG&E Mokelumne River System Acquisition
	Groundwater Banking/Exchange (San Joaquin Basin)
	Bayside Groundwater Project
	Desalination
	Bay Area Water Quality and Supply Reliability Improvement Project

In addition, SCWA would continue to meet a portion of its Zone 40 area demands with groundwater. Groundwater currently makes up the primary source of SCWA supply. Groundwater use is anticipated to increase, up to the long-term sustainable yield of the groundwater basin, as development occurs in the service area. SCWA anticipates that average annual groundwater use under this alternative would increase from approximately 24,000 AFA to approximately 41,000 AFA.

Screening Evaluation

Diverting supplies from the Lower American River would meet all water quality criteria. Although impacts on biological and other environmental resources would be similar to diversions at other locations, the Lower American River is a sensitive resource. These impacts, although relatively small, would be contrary to the intent of the Water Forum and would require modification of SCWA's purveyor-specific agreement.

This alternative would require obtaining numerous permits and approvals for construction and operation. Based on the first-stage evaluation, this alternative may not meet the jurisdictional criterion and it is uncertain whether it would meet the biological, timing, and water supply reliability criteria. In addition, it is not clear whether the Hodge Decision flow and diversion criteria would apply to this alternative, raising further questions about whether this alternative would effectively meet SCWA's water needs. However, this alternative is technically, operationally, and economically feasible and would supply high-quality water. Therefore, this alternative will be evaluated further in second-stage screening.

Sacramento River Diversion

Under this alternative, SCWA would take delivery of surface water at a new diversion intake on the Sacramento River. Three options are analyzed; Option 1 would involve construction of an intake near the City of Sacramento's new intake structure just downstream of the mouth of the American River. This option would also include expanding the City's treatment plant immediately east of the intake by approximately 70 MGD, and the construction of a large-diameter pipeline southeast through the City to several selected delivery points in SCWA's Zone 40. The other two options would include construction of an intake near the community of Freeport, just south of the City of Sacramento. Option 2 would require construction of a large-diameter pipeline to convey raw water to a new drinking water treatment plant located immediately north of the Sacramento Regional Wastewater Treatment Plant (SRWWTP). From this plant, additional pipelines would be constructed to convey treated water to several selected points of delivery in Zone 40. Option 3 would involve construction of a large-diameter raw water pipeline east to a new drinking water treatment plant in the general vicinity of Bradshaw Road and Gerber Road. From this plant, SCWA would construct various smaller transmission mains throughout Zone 40.

SCWA would divert up to 90,000 af from the Sacramento River pursuant to the Water Forum Agreement. SCWA would divert water in all years, with slightly less surface water being diverted in dry years and more in wet years. Groundwater use under this alternative would be identical to that described above, under the American River Diversion Alternative.

Table 6-2. Previously Analyzed Alternatives Excluded from Evaluation

Alternative	Primary Reasons for Elimination before First Stage Screening
Alamo Creek Reservoir (46.5 TAF)	This alternative was eliminated because the watershed has existing and proposed housing and commercial development, which would be inundated under this alternative. In addition, the reservoir rim may be unstable, and siltation has been identified as a potential issue because the site is entirely within the Orinda Formation, which consists of loosely consolidated sand, stone, and shale.
Bailey Road Reservoir (4.5 TAF)	This alternative was eliminated because of its small size, which does not meet the needs of the project. Also, a large landslide is located in the southern part of the proposed reservoir area, and a portion of Bailey Road would have to be relocated on steep terrain.
Bolinas Reservoir (57 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need. An agreement with the East Bay Regional Park District to allow for the acquisition or trade of parkland would also be required, and potential habitat for federally listed species and habitat for rainbow trout would be affected.
Enlarge Briones Reservoir	This alternative was eliminated because it is not logistically feasible. It would require draining the reservoir for a 3-year period. Also, the raised reservoir would inundate Briones Regional Park.
Upper Buckhorn Reservoir (14 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need.
Canada del Cierbo Reservoir (14.2 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need, and because of the potential for the oil tanks to seep mineral oil contamination into the reservoir, compromising water quality.
Enlarge Chabot Reservoir (+43 TAF)	This alternative was eliminated because highly developed recreational facilities would be inundated by the larger reservoir. In addition, the dam axis would be closer to the Hayward fault than the existing dam, which is only 1,600 feet away from the fault.
Clay Station Reservoir (170 TAF)	This alternative was eliminated because of significant wetland impacts and water quality issues. Approximately 238 acres of wetlands would be altered. There are also historic mine tailings in the inundation area, and an average water depth of 27 feet would lead to severe water quality problems.
Conservation	Water conservation reduces demand on potable water; sole reliance on these programs would not meet the basic project objectives and needs.
Recycled water	Recycled water projects reduce demand for potable water. Sole reliance on these programs would not meet the basic project objectives and purpose and need.
Kaiser Reservoir (11.3 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need.
Upper Kaiser Reservoir (38 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need. In addition, the site has issues regarding wetlands, a trout population, and water seepage concerns because the dam axis was planned to be at a high angle in relation to the strike of bedding.

Alternative	Primary Reasons for Elimination before First Stage Screening
Kirker Reservoir (21-, 40-, and 126-TAF Options)	Options 1 and 2 for this alternative were eliminated because of their small sizes at 21 and 40 TAF, which do not meet the needs of the project. Option 3 (126 TAF of storage) was eliminated because it would inundate Kirker Pass Road, a four-lane expressway linking State Route 4 at Pittsburg to the Concord/Walnut Creek area. Relocation or replacement of this expressway would be extremely difficult because of topography.
Enlarge Lafayette Reservoir (+47 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need. In addition, the downstream toe of the new dam would encroach on an existing community and the existing reservoir has excessive algae growth, which would require the removal and disposal of nutrient-rich sediments on the reservoir bottom in order to improve the water quality.
Mitchell Canyon Reservoir (49 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need. Further, this alternative would inundate lands permanently dedicated to public use as part of Mount Diablo State Park.
Montezuma Hills Reservoir (14- and 62-TAF Options)	Both size options were eliminated because of their small sizes, which do not meet the project purpose and need. The 62 TAF option was also eliminated because of possible future saltwater intrusion that could result from the location of the proposed dam. In addition, the sediments present create a rim and foundation stability problem as well as possible siltation problems.
Morningside Reservoir (17 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need. This alternative also has geologic issues because an unnamed fault of unknown activity passes through the dam axis, and two similar faults pass through the reservoir.
Nichols Reservoir (5 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need. In addition, there is potential for water quality constraints because of the small size; the size could promote high algae growth. The site is close to the U.S. Naval Station's industrial area, which may contain hazardous materials.
Pinole Reservoir (25-, 40-, 45-, and 68-TAF Options)	All four reservoir size options were eliminated because of their small sizes, which do not meet the project purpose and need. There may also be an anadromous rainbow trout run in Pinole Creek, which would be partially inundated. In addition, the 40-TAF option would require the acquisition of several privately owned houses, farms, and a horse association arena; the 45-TAF reservoir basin site contains large landslides and it is likely that a large landslide complex at the left abutment of the reservoir and approximately 10 miles of Pinole Creek would be inundated; finally, the 68-TAF option would require the relocation of electrical transmission lines as well as the acquisition of several privately owned houses, farms, and a horse association arena.

Alternative	Primary Reasons for Elimination before First Stage Screening
Railroad Flat Reservoir (100 TAF)	This alternative was eliminated because of water quality, community, and biological concerns. Septic systems in the towns of Independence, Railroad Flat, and Wilseyville, and at residences lining the river would make it difficult to control water quality hazards. Inundating Railroad Flat Road would adversely affect the provision of services between the towns of Railroad Flat and Wilseyville. Also, this section of the Mokelumne River provides suitable habitat for cold-water salmonid fish species that move upriver from Pardee Reservoir, including wild and hatchery rainbow trout, kokanee salmon, and brown trout.
Rodeo Reservoir (31 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose, need, or objectives.
San Leandro Reservoir (51 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need. Also, San Leandro Creek may support a remnant wild trout population. Approximately 6 miles of stream and high-quality habitat would be inundated.
Sidney Flat Reservoir (76 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose and need. In addition, this alternative would inundate East Bay Regional Park District's Black Diamond Mines Regional Preserve lands, including valuable historic and cultural resources, mines, and park facilities. Large landslides are also present in the reservoir basin.
Tassajara Reservoir (25- and 40-TAF Options)	Both size options were eliminated because of their small sizes, which do not meet the project purpose and need. Also, the 40-TAF option would inundate state parklands and extensive private land holdings.
Tice Valley Reservoir (50 TAF)	This alternative was eliminated because it would inundate the majority of Rossmoor, an existing residential community. Also, the reservoir size does not meet the project purpose and need.
Enlarge Upper San Leandro Reservoir	This alternative was eliminated because it would inundate the existing community of Canyon as well as urban development along San Pablo Creek (Moraga).
Enlarge San Pablo Reservoir	This alternative was eliminated because it would inundate residences along Camino Pablo Road, key elements of the road circulation system in the village of Orinda, and the EBMUD Orinda water treatment plant.
Bixler Groundwater Storage	This alternative was eliminated because it small yield (10 MGD) would not meet the basic project purposes and objectives and because its feasibility is highly uncertain.
Mokelumne River Salt Springs	This alternative was eliminated because it would inundate portions of a wilderness area.
Watershed Cloud Seeding	This alternative was eliminated because it could not provide a reliable water supply. PG&E and EBMUD already seed clouds in the Mokelumne watershed. No further yield is anticipated by increasing seeding efforts.
Raise Lower Bear River Reservoir (+26 TAF)	This alternative was eliminated because of its small size, which does not meet the project purpose, need, or objectives.
Lower Mokelumne Supply	This alternative was eliminated because of the length of the pipeline that would be required to convey water, and because of a lack of water supply available.

Alternative	Primary Reasons for Elimination before First Stage Screening
Mokelumne River Devil's Nose Supply	This alternative was eliminated because it does not meet the project purpose and need. No water supply is available for purchase.
Tanker Transport of Canadian Water Supplies	This alternative was eliminated because of significant legal, technical, and operational uncertainties.
North Fork Stanislaus River Supply	This alternative was eliminated because it would result in severe biological impacts.
Stanislaus River, New Melones Reservoir Supply	This alternative was eliminated because it does not meet the project purpose and need. Reclamation does not have water available for purchase from this facility.
Intertie Group, Zone 7, Dublin-San Ramon Services District, and Martinez	This alternative was eliminated because it does not meet the project purpose and need. Water would not be available. This alternative is dependent on State Water Project supplies, with limitations on yield and availability to the agencies currently supplied.
South Bay Aqueduct Intertie	This alternative was eliminated because it does not meet the project purpose and need. Water would not be available. This alternative is dependent on State Water Project supplies with limitations on yield and availability to the agencies currently supplied.
CCWD Bollman Plant Intertie	This alternative was eliminated because it does not meet the project purpose and need. It would not provide a reliable source to meet dry-year needs.
Tuolumne Hetch Hetchy Intertie	This alternative was eliminated because it does not meet the purpose and need. No reliable dry-year water supplies would be made available to FRWA under this alternative. In addition, there are substantial biological resource issues in the upper reaches of the Tuolumne watershed, as well as operational and institutional issues.
Tuolumne Hayward Intertie	This alternative was eliminated because it does not meet the project purpose and need. No reliable dry-year water supplies would be made available under this alternative.
Yuba River Water by Barge	This alternative was eliminated because of significant legal, technical, and operational uncertainties.
Cosumnes River Source	This alternative was eliminated because it does not meet the project purpose and need. There is no firm yield on the Cosumnes River and water is not available.
Iceberg Source	This alternative was eliminated because of significant legal, technical, and operational uncertainties.
Auburn Dam	This alternative was eliminated because of substantial uncertainty regarding its implementation.
CALFED Combined Delivery	This alternative was eliminated because of water quality concerns and technical, operational, and timing uncertainties. This alternative has not been developed beyond a very conceptual stage, and would require significant agreements among many water interests. It would not be available within a reasonable timeframe.
TAF = thousand acre-feet.	

Screening Evaluation

Like the American River Diversion Alternative locations, facilities for Option 1 of the Sacramento River Diversion Alternative would be located primarily in urban streets and roadways. Facilities for Options 2 and 3 would be located partially in urban streets, to lesser extent than the first option, and partially in rural roads. Relatively few natural resources would be affected by construction. Although the Sacramento River generally is considered to be a less sensitive resource than the Lower American River, the Sacramento River supports more species of fish and larger populations of fish that are protected under the federal Endangered Species Act.

This alternative would avoid certain of the institutional/jurisdictional issues associated with diversions from the Lower American River and is therefore considered to be more feasible than a Lower American River diversion project. It would be consistent with SCWA's purveyor-specific agreement under the water forum agreement.

This alternative is technically, operationally, and economically feasible and would supply high-quality water. Therefore, this alternative will be evaluated further in second-stage screening.

Groundwater Banking/Exchange—Sacramento Basin

An additional component of each of the diversion location alternatives described above would involve two potential groundwater banking/exchange options. Under the first option, water districts in the area north of the Lower American River, which compose the Sacramento Groundwater Authority, a recently formed joint powers authority, would operate groundwater facilities to provide in-lieu surface water supplies. In wet years, additional surface water available under SCWA's water entitlements would be provided to these districts. In dry years, these districts would forgo some or all of their typical diversions from the Lower American River and would rely more heavily on groundwater, allowing their surface entitlements to flow downstream to SCWA's point of diversion. The capacity of the basin to provide for the water exchange is not clear.

The second option would involve operating an aquifer storage and recovery program (ASR) in Sacramento County's central county basin. It would enhance further the level of in-lieu groundwater recharge that would occur under the other alternatives and would artificially recharge the basin. Groundwater injection facilities and additional withdrawal facilities would be constructed. Water would be diverted from the Sacramento River and stored in the groundwater basin. During dry years, water diversions from the river would be reduced and groundwater would be extracted and used by SCWA to meet some or all if its Zone 40 service area demands. The capacity of the basin to operate an ASR program has not been proven; however, for purposes of this analysis, it is

assumed that a substantial portion of water demand would be met from stored groundwater during dry years.

Screening Evaluation

A groundwater conjunctive use element that relies on active groundwater recharge appears to be technically viable. However, it would take several years to prove basin capability, develop governance and facility plans, and implement such plans in the Central or Galt Basin. Although various entities are actively pursuing or evaluating the potential for groundwater management, through methods such as banking and exchange programs, there are complex legal and institutional requirements for implementing such programs. Currently, it is not clear whether such mechanisms can be feasibly implemented in a reasonable period. Also, the potential environmental effects of such a program have not been studied. This alternative will be evaluated further in second-stage screening.

Full Surface Water Reliance

Under this alternative, all future water supply needs for development in the Zone 40 service area (approximately 109,500 AFA) would be met using surface water sources only. Groundwater sources would no longer be used by SCWA, potentially improving groundwater conditions in central Sacramento County. Other groundwater users in the Zone 40 service area would continue to use groundwater, unaffected by this alternative. Construction of surface water diversion facilities such as those described above would be required to implement this alternative, although under this alternative surface water diversion facilities would be enlarged to provide for the full Zone 40 needs.

Screening Evaluation

The screening analysis above for both American and Sacramento River diversion alternatives also applies to this alternative. However, impacts on downstream water quality, fisheries, and river flow under this alternative would be more substantial because the amount of water diverted would be approximately 35% greater and larger facilities likely would be needed. This alternative likely would improve groundwater conditions in the central county area by reducing current and future groundwater pumping. It is not clear whether surface water supplies sufficient to meet SCWA's identified needs are available. Also, because such supplies would have to be acquired from other users (CVP or another agency), this alternative likely would be considerably more costly than other alternatives. Because this alternative would result in more severe impacts, would be more costly, is overly speculative, and does not meet most of the basic project objectives, it is eliminated from further consideration.

Full Groundwater Reliance

Under this alternative, all future water supply needs for development in the Zone 40 service area (approximately 109,500 AFA) would be met by drawing groundwater from the aquifer underlying the Zone 40 service area. No additional supplemental surface water sources would be used beyond those already obtained by SCWA through its existing CVP contract. Substantial new groundwater extraction facilities, including well fields and distribution facilities, would be required throughout the Zone 40 service area to implement this alternative.

Screening Evaluation

This alternative could meet the technical and operational, economic/cost, water quality, and timing criteria. However, it would be inconsistent with Sacramento County policies regarding the sustainable use of groundwater resources in the area, and would be inconsistent with the Water Forum Agreement described in Chapter 4. Therefore, this alternative would not meet the jurisdictional criterion.

The long-term sustainable yield of the basin would be exceeded under this alternative, resulting in declining groundwater levels over the long term. Groundwater overdraft could have substantial negative consequences associated with decreased streamflows (resulting in potential negative impacts on riparian communities and other habitats); exacerbated movement of contaminated groundwater; increased pumping costs for all groundwater users; increased energy use (for pumping the water to the surface); potential land subsidence; and potential decreased recharge from the basin to other waterways and groundwater basins. This alternative therefore would not meet the environmental and biological criterion.

Because this alternative clearly fails to meet the jurisdictional and environmental and biological criteria, and does not meet most of the basic project objectives and would result in substantial impacts on groundwater supplies, it is eliminated from further consideration.

EBMUD Project Alternatives

American River Diversion

In 1993, EBMUD considered several alternatives that would allow the district to take delivery of its CVP contract water supply from the American River to meet the district's objectives. As part of the 1997 Supplemental Water Supply Project, similar alternatives were once again considered. All these alternatives were reevaluated to determine whether they would meet the proposed project's purpose and need. Based on that analysis, potentially feasible project alternatives include diversions from the Lower American River at or near:

- Folsom South Canal,
- Fairbairn Water Treatment Plant, and
- upstream of the I-5 bridge near the confluence with the Sacramento River.

Diverting water from the Folsom South Canal would require construction of an intake structure and pumping plant in the Folsom South Canal and a new pipeline connecting the canal to EBMUD's Mokelumne Aqueducts. Reclamation would deliver CVP water to EBMUD through the Folsom South Canal facilities.

Alternatives involving the diversion of water from new intake locations along the Lower American River would require new intake structures, buried raw water pipelines extending from the new intake structures to Folsom South Canal, buried raw water pipelines extending from the Folsom South Canal to the Mokelumne Aqueducts, a new water treatment plant, and new pumping plants, similar in nature to those described for SCWA.

It is assumed that, for all American River alternatives, EBMUD would be limited by Hodge Decision flow criteria in terms of its ability to divert water. An American River diversion would also require amendment of the California Wild & Scenic Rivers legislation.

Screening Evaluation

Diverting water from the American River at any of the locations discussed above appears to meet the technical and operational, economic/cost, water quality, and water supply reliability criteria. The Lower American River is capable of supplying high-quality water at a reasonable cost. There are no known technical or operational constraints to this alternative; the alternative would supply EBMUD with an alternate source of water and would thereby increase system reliability.

Although impacts on environmental and biological resources would be similar to those associated with diversions at other locations, the Lower American River is a sensitive resource. This alternative would require obtaining numerous permits and approvals for construction and operation. An American River diversion would also require amendment of the California Wild & Scenic Rivers legislation. This alternative may not meet the jurisdictional and timing criteria.

Based on the first-stage evaluation, this alternative may not meet the jurisdictional criterion, and it is uncertain whether it could meet the biological, timing, and water supply reliability criteria. However, this alternative appears to be technically, operationally, and economically feasible and would supply high-quality water. Therefore, this alternative will be evaluated further in second-stage screening.

Sacramento River Diversion

Under this alternative, EBMUD would take delivery of its CVP contract supply from the Sacramento River downstream of the confluence with the American River. Two potentially feasible alternatives have been identified. Under the first option, a new intake would be constructed near the City of Sacramento's existing intake structure, just downstream of the confluence with the Lower American River. Under the second option, a new intake would be constructed near the community of Freeport, just south of the City of Sacramento.

This alternative would require construction of a new intake structure and installation of a buried pipeline extending easterly to connect with the Folsom South Canal, or southerly to connect with the Mokelumne Aqueducts within the City of Stockton. For the Folsom South Canal option, another pipeline and pumping plant would be installed to convey water from the end of the Folsom South Canal to the Mokelumne Aqueducts. Under both options a new treatment plant would be constructed to treat the water before it is introduced into the Mokelumne Aqueducts.

Screening Evaluation

Diverting water at the Sacramento River locations described above would meet the technical and operational, economic/cost, water quality, and water supply reliability criteria. After appropriate treatment, the Sacramento River is capable of supplying water at a reasonable cost. There are no known technical or operational constraints to this alternative; this alternative would supply EBMUD with an alternate source of water and thereby increase system reliability.

Although the Sacramento River generally is considered to be a less sensitive resource than the Lower American River, the Sacramento River supports more species of fish and larger populations of fish that are protected under the federal Endangered Species Act.

This alternative would avoid certain of the institutional/jurisdictional issues associated with diversions from the Lower American River and is therefore considered to be more feasible than a Lower American River diversion project. This alternative is technically, operationally, and economically feasible and would supply high-quality water. Therefore, this alternative will be evaluated further in second-stage screening.

Groundwater Banking/Exchange—Sacramento Basin

This alternative could be combined with an additional component involving groundwater banking/exchange options. These options were described above, under "SCWA Project Alternatives, Groundwater Banking/Exchange." Issues associated with this alternative and a groundwater banking/exchange element

would be similar to those described above. However, EBMUD may be further limited by Water Code Section 1220, which prohibits the export of groundwater from a basin unless a voter-approved AB 3030 plan is in place that specifically allows for the export of groundwater. This alternative will be evaluated further in second-stage screening.

Delta Diversion

Under this alternative, EBMUD would construct a new intake structure on the bank at Indian Slough, immediately adjacent to the Mokelumne Aqueducts. The intake facility would be located on an existing intake channel from Indian Slough. Under one scenario, a new conventional water treatment plant would be constructed near the site and the water would be treated to Title 22 drinking water standards prior to its introduction into the Mokelumne Aqueducts. Under another potential scenario, to provide water quality similar to EBMUD's current finished water quality, an advanced treatment plant (probably using reverse osmosis) would be located near the site to treat the water before it is pumped into the Mokelumne Aqueducts. A brine disposal pipeline would convey concentrated salts to approximately Suisun Bay, where they could be discharged into waters of a similar quality. A new pipeline would be constructed in the Mokelumne Aqueducts right-of-way to convey the treated water directly to EBMUD's distribution system.

Screening Evaluation

The reliability of Delta supply is questionable because there may be severely limited flows during dry years in the southern Delta.

Implementation of this alternative would involve significant permitting requirements for a new intake facility and for the disposal of highly saline brine that would be created under one scenario. The disposal of brine from a desalination facility would require a brine disposal pipeline and discharge located far from all urban and agricultural intake facilities. The likelihood that a permit for such brine disposal can be obtained is also speculative.

This alternative would require obtaining numerous permits and approvals for construction and operation. This alternative may not meet the jurisdictional and timing criteria. The costs associated with an advanced water treatment plant are very high. It is not certain that this alternative will be able to meet the economic criterion.

Based on the first-stage evaluation, this alternative may not meet the jurisdictional criterion or all water quality criteria, and it is uncertain whether it would meet the biological, timing, economic, water quality, and water supply reliability criteria. However, this alternative may be technically and operationally feasible, and, with advanced water treatment (e.g., reverse

osmosis), it would supply high-quality water. Therefore, this alternative will be evaluated further in second-stage screening.

Reservoir Storage

Reservoir alternatives were categorized as either enlarged reservoir storage or new reservoir storage alternatives. The descriptions of reservoir alternatives in the following section generally are based on descriptions in the 1993 Updated WSMP EIR (EDAW 1993), updated as necessary.

Not all potential enlarged and new reservoir alternatives were included in the following analysis. Alternatives involving enlarged and new reservoirs that would be too small to substantially meet EBMUD's water needs were eliminated before this first-stage screening analysis because they would not meet the basic project purpose. Combinations of smaller new or enlarged reservoir alternatives were eliminated because the combined environmental impacts of constructing or enlarging two reservoirs, along with institutional and jurisdictional considerations associated with reservoir construction, would clearly prevent such alternatives from meeting Clean Water Act Section 404 permitting requirements. Also, alternatives that were clearly fatally flawed or undesirable from an environmental perspective were eliminated before this first-stage screening analysis. Table 6-2 provides a description of alternatives eliminated early in this alternatives screening process.

Enlarged Reservoir Storage

Existing reservoirs could be enlarged to increase water storage capacity for use by EBMUD.

Enlarge Camanche Reservoir

Camanche Reservoir is operated by EBMUD and is located immediately downstream of Pardee Reservoir. This alternative would involve increasing the surface elevation of the existing Camanche Reservoir by approximately 25 feet (to approximately 260 feet above mean sea level) to provide an additional approximately 200,000 af of storage. The increased storage would be used to meet downstream needs so that an equivalent amount of additional water could remain in storage in Pardee Reservoir for use by EBMUD rather than be released to meet downstream needs. The existing facilities could likely not be sufficiently improved to provide for this increased storage. Therefore, this alternative assumes that a new main dam, saddle dams, and dikes would need to be constructed.

Screening Evaluation

This alternative would require obtaining numerous permits and approvals for construction and operation. Major authorizations relate to compliance with state and federal Endangered Species Acts, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act.

It is assumed that an enlarged Camanche Reservoir would be capable of meeting the basic project purposes and objectives, although additional detailed modeling studies would need to be undertaken to verify this assumption. Enlarging the reservoir would involve the construction of a new main dam, saddle dams, and dikes. The dam and several dikes currently experience some seepage through the foundations, and it is unlikely that the reservoir could remain in operation during construction. Because of the need to meet downstream water demands, the likely inability of this alternative to remain in operation is a fatal flaw. This alternative would also not meet the environmental and biological criteria. An enlarged Camanche Reservoir would be relatively shallow, and this alternative would result in substantially reduced inflows from the cooler Pardee Reservoir. This alternative would therefore likely result in substantial temperature impacts on aquatic resources in the lower Mokelumne River. Based on environmental/biological, and technical and operational criteria, it was determined that this alternative could not meet the basic project objectives. This alternative is therefore eliminated from further consideration.

Expand Los Vaqueros Reservoir

This alternative was extensively explored by EBMUD as part of the 1993 WSMP. This alternative would involve expanding the capacity of the Los Vaqueros Reservoir, located approximately 6 miles south of the city of Brentwood, on Vasco Road. The reservoir currently has 100,000 af of storage capacity. A new dam would be constructed, most likely downstream of the existing dam, allowing for a new total storage of up to 500,000 af. The enlarged reservoir would require the relocation of recreation facilities and the construction of new pipelines and pump stations. Various options for facilities and operation of the expanded reservoir were considered. Contra Costa Water District, the owner of the reservoir, is jointly studying an enlarged Los Vaqueros Reservoir as part of the CALFED process.

Screening Evaluation

It appears that this alternative could achieve the project purpose and objectives and could meet the water reliability criteria. It is uncertain whether the alternative would meet the jurisdictional criteria because multiple permits, requiring extensive studies and coordination with USFWS, DFG, the State Historic Preservation Officer (SHPO), and the Corps, would be required. An agreement with CCWD would also be required. Additional engineering and geotechnical studies would be required to determine whether this alternative could meet the water quality and technical and operational criteria. Because this alternative may be capable of meeting the project purpose and may meet other screening criteria, it will be evaluated further in second-stage screening.

Enlarge Pardee Reservoir

Pardee Reservoir is owned and operated by EBMUD for water supply purposes and has a total storage capacity of about 198,000 af. The reservoir is impounded by a 350-foot-high, concrete, curved gravity dam on the Mokelumne River, northeast of Stockton in the Sierra Nevada foothills. A separate uncontrolled spillway structure is located south of the dam. Enlarging the reservoir would require the construction of a replacement dam about 0.75 mile downstream of the existing dam and construction of saddle dams. The Pardee powerhouse and transmission lines would be replaced, and the existing intake structure and intake tunnel would be refurbished.

Enlarging the reservoir also would require the relocation of Pardee Dam and Stoney Creek Roads, as well as recreation facilities along the reservoir shore. The Highway 49 bridge crossing of the Mokelumne River would be replaced, and the Middle Bar Road bridge, which is currently closed to traffic because of its poor condition, would be removed.

Screening Evaluation

This alternative could achieve the project purpose and objectives. It may be capable of meeting the economic/cost and jurisdictional criteria. This alternative would require obtaining numerous permits and approvals for construction and operation. Major authorizations relate to compliance with state and federal Endangered Species Acts, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act.

It is uncertain whether the alternative could meet the environmental and biological criteria. It appears that most other criteria could be met. This alternative will be evaluated further in second-stage screening.

New Reservoir Storage

Bollinger Canyon

This alternative would involve constructing a dam for a terminal reservoir on Bollinger Creek, 1.75 miles north of the Crow Canyon Road/Bollinger Canyon Road intersection. The site is approximately 2.5 miles southwest of the town of Danville. The reservoir would store 98,000 af of water.

Screening Evaluation

This alternative does not meet most of the basic project objectives. The alternative would not meet the biological criteria because it would inundate the Las Trampas Wilderness Area. This alternative was eliminated from further consideration.

Buckhorn Canyon

This alternative would involve constructing a dam for a terminal reservoir at Buckhorn Canyon, north of Castro Valley, about one-eighth mile up the eastern arm of EBMUD's Upper San Leandro Reservoir. Three size alternatives were evaluated: 50,000, 100,000, and 150,000 af of water storage. The entire inundation area is owned by EBMUD and would extend up Buckhorn and Kaiser Creeks.

Screening Evaluation

The 50,000-acre-foot option was eliminated from further consideration because of its small size, which would not meet the project needs and objectives. For the larger options, it was determined that a large Buckhorn Reservoir would have construction impacts worse than other reservoir alternatives considered. Also, biological impacts would result from the inundation of known habitat for Alameda whipsnake, sensitive fish species, and 40 acres of waters of the United States. Finally, this alternative was pursued previously by EBMUD; it was determined to be infeasible as it could not be completed within a reasonable period of time because of significant local opposition. This alternative was eliminated from further consideration as it does not meet most of the basic project objectives, has significant biological resources issues, and is not capable of being completed within a reasonable period of time.

Cull Canyon

The Cull Canyon reservoir alternative site is located northeast of Castro Valley, approximately 2 miles north of the Crow Canyon Road/Cull Canyon Road intersection. A dam would be constructed across Cull Creek to store 100,000 af of water.

Screening Evaluation

The reservoir site is already developed with residential and business uses as well as the Cull Canyon Regional Recreation Area. Geotechnical investigations concluded that the site has a potential seepage and foundation stability problem. In addition, large dip landslides are located on the western rim of the proposed reservoir. This alternative was eliminated from further consideration in 1993 because it would inundate access to the northernmost residential dwellings and ranches and the Bay Area Ridge Trail, which links Chabot Regional Park to Cull Canyon Regional Recreation Area. When evaluated using the current criteria, the alternative was again eliminated from further consideration because it does not meet most of the basic project objectives and does not meet the technical and jurisdictional constraints mentioned above.

Curry Canyon

Located southeast of Clayton and north of the Black Hills on Marsh Creek, the Curry Canyon reservoir alternative site would store 200,000 af of water. The

proposed dam site is approximately 1.5 miles south of the Marsh Creek turn-off on Morgan Territory Road.

Screening Evaluation

The inundation area includes nearly contiguous residential development with 0.25 to 5-acre lot sizes along Morgan Territory Road, a well-established mobile home community, and portions of Mount Diablo State Park. Also, the site contains potential geologic hazards because of large dip-slope landslides and a dam axis at a high angle to the strike of the rock. This alternative does not meet most of the basic project objectives and does not meet the technical and jurisdictional criteria. This alternative was eliminated from further consideration.

Delta Wetlands Project

The Delta Wetlands Project is a privately owned project that would store surplus water on two Delta islands and restore habitat on two other islands. The project has obtained several major permits and approvals, but no construction has begun or is scheduled at this time. This alternative would involve diverting Delta water onto two island reservoirs (Bacon Island and Webb Tract) in the lower reaches of the Delta. Intake siphon stations on each island likely would include approximately 16 screened siphons, with supplemental pumps in the siphons to complete the filling process. Stored water would be discharged at one pump station on each of the islands. The total estimated capacity of both reservoirs is 238,000 af. A new intake in the Delta would also be required, as would a new advanced water treatment plant to provide water of acceptable quality. The most likely scenario for this alternative would be that EBMUD would construct and divert water for its direct use at a new intake in the Delta at the Bixler location (see below). Water would be released from the Delta Wetlands Project to offset EBMUD diversions for other users. Under one possible approach, EBMUD would acquire storage and release rights for a portion of the project and use annual storage and release to build up credit with one or more other water users. During dry years, when EBMUD requires additional supplies, EBMUD would divert water that would otherwise be used by those other entities to meet EBMUD's dry-year demands.

Screening Evaluation

It is highly uncertain whether this alternative could meet the screening criteria. Environmental and biological impacts would be substantial compared to other alternatives; hundreds of acres of habitat would be inundated. Also, this alternative would involve two new diversions: one to divert water onto the Delta Islands and another to allow EBMUD to meet its dry-year needs. Water quality issues associated with Delta diversions would be substantial. This alternative would require construction and operation of the Delta Wetlands Project. Although this project is permitted, there is no schedule for its implementation, and the FRWA is unaware of any activity currently underway. This alternative would require complex agreements with other entities, the implementation of which may not be feasible. This alternative does not meet most of the basic project objectives and will create substantial environmental impacts. It also

appears to be infeasible as it cannot be completed in a reasonable period of time. Given the uncertainties and environmental issues associated with this alternative, it was eliminated from further evaluation.

Kellogg

This alternative would involve constructing a terminal reservoir in the Los Vaqueros watershed on Kellogg Creek, downstream of the existing Los Vaqueros Reservoir. Up to 135,000 af of storage could be available at this site. Contra Costa Water District examined this project as an alternative to Los Vaqueros Reservoir.

Screening Evaluation

This alternative is assumed to be unavailable to EBMUD. Contra Costa Water District owns the land and has established wetland mitigation areas and recreation facilities in the reservoir area. In addition, this alternative would eliminate the primary access to the Los Vaqueros Reservoir, thereby requiring new access roads, and would inundate other Los Vaqueros facilities, including major pipelines. This alternative would result in significant biological impacts on wetlands and would inundate approximately nine miles of stream, destroying habitat for special-status plants and wildlife communities and species, including the Northern Claypan Vernal Pool community, kit fox, and California tiger salamander. Also, potentially active fault lines cross the proposed dike alignments, which would create technical difficulties. A shallow reservoir depth would may promote algae growth and degrade water quality. This alternative does not meet most of the basic project objectives. It was eliminated from further consideration.

Duck Creek and Middle Bar

In 1990, the Mokelumne River Water And Power Authority filed a water right application with the State Water Resources Control Board for the direct diversion of up to 110,000 AFA and maximum storage of 434,000 AFA. Several points of diversion and additional storage alternatives were proposed in the application; these included new storage facilities located at Middle Bar on the Mokelumne River, upstream from Pardee Reservoir; a new storage facility on Duck Creek; and direct diversions downstream from Camanche Dam and the Bellota Weir. San Joaquin County has initiated a feasibility study to explore these alternatives as part of its Mokelumne River Regional Water Storage and Conjunctive Use Project.

Duck Creek

This alternative would involve construction of an off-stream storage reservoir on Duck Creek, south of the Mokelumne Aqueducts in the Calaveras River watershed. A new pipeline would be constructed from Pardee Reservoir to convey floodflows to the new reservoir. Scenarios could include a contract for the purchase of water from the authority, or a partnership.

Screening Evaluation

This alternative likely would meet the water supply criterion. However, it would result in a very shallow reservoir, increasing the potential for algal growth and relatively warm temperatures and raising significant water quality concerns. In addition, DFG has a conservation easement over much of the site. This alternative would result in significant environmental impacts by inundating habitat and likely would not meet water quality criteria. Also, its feasibility is currently under study by another agency. This alternative does not meet most of the basic project objectives. It was therefore eliminated from further consideration.

Middle Bar

The Middle Bar dam site is located approximately 3 miles west of Mokelumne Hill on the Mokelumne River, immediately upstream of Pardee Reservoir. Its capacity would be 100,000 af or more. Scenarios could include a contract for the purchase of water from the authority, or a partnership. Water for EBMUD likely would be released from the reservoir into Pardee Reservoir, where it would be available for diversion by EBMUD.

Screening Evaluation

This alternative would likely meet the water quality, cost, and water supply criteria. This alternative would inundate approximately 8 miles of the Mokelumne River, from the upper end of Pardee Reservoir to a point 1.5 miles upstream of Pacific Gas and Electric Company's (PG&E's) Electra Power Station, approximately 14 miles of river channel. This alternative would inundate several miles of high quality river-related recreation area and would require the construction of a new approach and bridge for Highway 49. Approximately 100 acres of wetlands would be altered. This alternative would not meet the environmental screening criterion. It is considered unlikely that permits could be obtained for this project. In addition, its feasibility is currently under study by another agency. This alternative does not meet most of the basic project objectives and was therefore eliminated from further consideration.

Other Mokelumne River Sources

PG&E System Purchase

Under this alternative, existing supply would be supplemented by purchasing PG&E's Mokelumne system, which consists of 13 reservoirs with a combined gross water capacity of 220,000 af.

Screening Evaluation

Because of existing power operating agreements that would still have to be implemented, only limited water supply would be available. This alternative is not currently available to EBMUD. It is highly unlikely that EBMUD would be

able to acquire PG&E's system. Also, even if EBMUD were able to acquire the facilities, it is unlikely that EBMUD could gain approval to reoperate the facilities to make substantial additional water supplies available rather than to produce power because of longstanding contracts and agreements that are in place for the production of hydropower. Acquisition of the facilities would likely be conditioned on their continued operation to produce power. This alternative is not feasible as it cannot be accomplished within a reasonable period of time and is overly speculative. This alternative would not meet the technical and operational or jurisdictional criterion and was eliminated from further consideration.

Groundwater Banking/Exchange—San Joaquin Basin

This alternative has been studied extensively by EBMUD for more than 12 years. The alternative would involve constructing facilities to store water in underground aquifers in wet years for use in dry years. Both Mokelumne River and American River water supplies were considered extensively by EBMUD. The most likely scenario would involve implementing an aquifer storage and recovery program using Mokelumne River water in wet years. Water would be withdrawn in dry years and pumped into the Mokelumne Aqueducts to meet EBMUD's dry-year needs. The project would involve constructing a number of distribution lines from the Mokelumne Aqueducts to injection/withdrawal wells. The system would be located generally in eastern San Joaquin County, in the vicinity of the Mokelumne Aqueducts. Another possible scenario would involve use of American River water via the Folsom South Canal. Water would be diverted through the canal and into a pipeline from the end of the canal to the Mokelumne Aqueducts. This scenario would involve constructing a number of distribution lines from the new pipeline to injection/withdrawal wells in eastern San Joaquin County.

Screening Evaluation

EBMUD has thoroughly explored this alternative for more than 12 years. This alternative could benefit both EBMUD and the aquifers underlying San Joaquin County, which have been and continue to be overdrafted. Although technically feasible, the alternative is overly speculative and could not be accomplished in a successful manner within a reasonable period of time. A detailed discussion about why this alternative is not currently feasible is contained in Chapter 3, "Major Issue Responses," in Volume I: Final EIR/EIS for the EBMUD Supplemental Water Supply Project (East Bay Municipal Utility District and U.S. Bureau of Reclamation 2000), and is included in Attachment 2. The discussion contained therein remains valid; no major changes in circumstances have occurred. The detailed discussion is briefly summarized below. There are four specific reasons why a San Joaquin County groundwater banking project is speculative and uncertain and therefore cannot be reasonably implemented. San Joaquin County has:

1. no effective control of groundwater overpumping by overlying agencies and pumpers;
2. no legal framework for EBMUD recovery of stored water that would justify investment in a conjunctive use project;
3. no strong local authority with clear boundaries and sufficient powers to join EBMUD in such a project; and
4. no consensus among the local water users that a conjunctive-use project with EBMUD is desirable.

These facts result in a major legal, institutional, technical, and economic uncertainties that make any long-term conjunctive-use project speculative and remote, despite more than a decade of proactive investigation and pilot projects supported by EBMUD. In addition, the scenario involving use of American River water would not be allowed under the Hodge Decision. Therefore, this alternative was eliminated from further consideration.

Bayside Groundwater Project

Under this alternative, EBMUD would develop the South East Bay Plain (SEBP) Groundwater Basin to provide 5,000 af to 11,000 af annually of water supply during droughts. This alternative would involve constructing facilities to store water in the East Bay aquifers during wet years for use in dry years. During wet years, this alternative would use injection wells to store surplus treated water from EBMUD's distribution system. During dry years, water would be withdrawn, treated, and pumped into the EBMUD distribution system. The project would involve constructing a central treatment facility, dual-purpose injection/extraction wells, associated piping, and a transmission pipeline in the San Lorenzo/San Leandro area.

A draft EIR was released for public review and comment in March 2001. Comments included safety of air emissions from the proposed treatment plant, potential subsidence issues related to pumping, water quality, and potential effect of the project on the Niles Cone Groundwater Basin. Further testing and groundwater modeling is underway to address these issues.

Screening Evaluation

Storing water in the SEBP Groundwater Basin appears to meet technical, operational, economic/cost, and water quality criteria. While the Bayside Groundwater project may help to meet EBMUD's remaining need for water if Freeport is constructed, because of its size, this alternative does not meet most of the basic project objectives. This alternative was eliminated from further consideration.

Desalination

Under this alternative, EBMUD would construct an approximately 55-MGD desalination plant at a location near San Francisco Bay. This facility would be operated only in dry years to meet EBMUD's identified needs. Salt water would be pumped from the bay and treated through a reverse osmosis process. The treated water would be placed into EBMUD's distribution system, and the concentrated brine would be discharged to the bay. Ideally, this facility would be located at the site of an existing power-generation facility, large industrial water user, or wastewater facility. This location would allow the water user or wastewater facility to provide power to the desalination facility and would facilitate the discharge of the brine using existing dilution capabilities.

The desalination facility would require approximately 5–10 acres. Specific locations have not been identified for a plant of this size, but it is assumed that suitable locations are available.

Screening Evaluation

There is uncertainty involved with all desalination alternatives because of the uncharted regulatory environment and the potential brine discharge and disposal requirement and the technology needed to build large-scale-plants. Salts and other constituents would be concentrated in the brine and may cause environmental effects if the brine is not sufficiently diluted before it is discharged. The environmental effects would depend on the size of the facility, the available sources of water, and the quality of the receiving waters and needs to be evaluated by scientific studies. Existing technology has allowed for the construction and operation of smaller plants elsewhere in the United States and in other countries; however plants with capacities larger than 55 MGD would be among the largest in the world, and the technology is complex.

This alternative is speculative; there is uncertainty regarding whether permit requirements could be met, whether the costs (both in dollars and in energy requirements) would be acceptable, and whether the alternative could be constructed in the needed timeframe. However, it is likely that desalination of salt water would meet the water quality and supply reliability criteria. Therefore, this alternative will be evaluated further in second-stage screening.

Bay Area Water Quality and Supply Reliability Improvement Project

Under the auspices of this CALFED program, local Bay Area water agencies have been discussing ways to address water supply reliability and water quality concerns on a mutually beneficial and regionally focused basis. The local agencies involved include Contra Costa Water District, EBMUD, Santa Clara

Valley Water District, Zone 7 of the Alameda County Flood Control and Water Conservation District, Alameda County Water District, San Francisco Bay Area Water Users Association, and the City and County of San Francisco Public Utilities Commission. An MOU was signed in July 2001. The purpose of the MOU was to document the mutual willingness of the agencies to share information as part of a process to work cooperatively to address water quality and supply reliability concerns on a consensual basis, consistent with the CALFED Bay-Delta Programmatic Record of Decision.

Screening Evaluation

The agencies have been meeting for more than 2 years to discuss potential opportunities. To date, no specific opportunities have been identified that would achieve or significantly contribute to meeting EBMUD's dry-year needs. This alternative is speculative and infeasible as it cannot be accomplished in a reasonable period of time. The alternative does not meet most of the basic project objectives and was therefore eliminated from further consideration.

Chapter 7

Second-Stage Evaluation Results

Introduction

This chapter presents the results of the second-stage evaluation of alternatives identified as satisfying the first-stage screening process. The second stage of screening evaluates the remaining alternatives using the same criteria, but with more strict adherence than during the first stage and, therefore, a greater focus on the relative ability of each alternative to meet the criteria.

This second-stage evaluation considers alternatives that independently met the requirements of criteria in the first stage. During this second-stage evaluation, if an alternative can clearly be shown to be incapable of meeting one or more of the screening criteria, the alternative is eliminated from further consideration. This more focused approach is used to determine clearly which of the potential alternatives are the most practicable alternatives to satisfy the project objectives, purpose, and need of the FRWA.

Potential alternatives that satisfy the requirements of the second-stage evaluation and are considered to be the most feasible, and meet most of the project objectives will be addressed in a detailed evaluation in the EIR/EIS to determine the least environmentally damaging alternative.

SCWA Alternatives

American River Diversion

Two distinct American River diversion alternatives are described below. Although other potential diversion locations exist, these two alternatives comprise an appropriate examination of options realistically available to SCWA.

Diversion at Fairbairn Water Treatment Plant

Under this alternative, SCWA would take delivery of surface water at the City of Sacramento's Fairbairn Water Treatment Plant. Facilities beyond those planned

by the City would be constructed. SCWA water supplies would be diverted and treated through the City's facilities. Additional treatment facilities would likely be required, as would new pipelines to convey the treated water to the Zone 40 service area. Diversions, treatment, and deliveries would be dependent on available capacity at the City's facilities.

SCWA would divert up to 90,000 af from the Lower American River. It is assumed that any such diversions would be limited by Hodge Decision flow/diversion criteria.

Screening Evaluation

Environmental and Biological Criteria

Although impacts on environmental and biological resources would be similar to impacts resulting from diversions at other locations, the Lower American River is considered a highly sensitive resource. Many of the facility-related impacts would occur within urban streets and roadways. Relatively few natural resources would be affected. Impacts during construction may be substantial and impacts associated with the diversion may also be of considerable concern. Diversions from the Lower American River also have the potential to result in minor impacts to species listed as threatened or endangered under the federal Endangered Species Act. While these impacts would be relatively small, they would be contrary to the intent of the Water Forum, which is striving to preserve and enhance conditions in the lower American River. Fisheries impacts associated with diversions from the Lower American River are of substantial concern to resource agencies and the public.

Technical and Operational Criteria

The City of Sacramento owns and operates the Fairbairn intake and water treatment plant. It is highly uncertain whether the City has sufficient future capacity to allow SCWA to make use of this facility for long-term water supply diversion and treatment. This alternative would require the use of public right-of-way through the City. The City has indicated opposition to this alternative, and such opposition would complicate and delay implementation of this alternative.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include state and federal Endangered Species Act compliance and Section 106 of the National Historic Preservation Act. These approvals would be difficult to obtain although they have been obtained by other projects. SCWA's purveyor specific agreement, in which it agreed not to divert from the lower American River, would have to be modified under Water Forum Successor Effort process.

In addition, significant agreements would be required with the City of Sacramento to make use of their capacity. The City is currently anticipating making full use of the Fairbairn intake and treatment facilities and would likely

only be willing to consider allowing use of the facility during times when excess capacity is available. These are likely to be times when demands, and therefore the need to make use of surface water, are also low for SCWA. The City has expressed opposition to this alternative.

Permitting processes have been difficult for other projects of similar magnitude. In addition, a number of entities may oppose implementation of this alternative. This alternative would also be inconsistent with the finalized Water Forum Agreement, thereby necessitating lengthy and potentially unacceptable renegotiation of that agreement, which took several years to put into place. This alternative may also be inconsistent with the state and federal Wild and Scenic River Acts and the American River Parkway Plan, both of which would require legislative action to amend.

Economic/Cost Criteria

The current estimated cost of this alternative is approximately $300 million to implement and is within the same range of other alternatives available to SCWA.

Water Quality Criteria

This alternative would fully meet all water quality criteria and would provide water quality equal to or better than SCWA's current supplies.

Timing/Schedule Criteria

While this alternative is capable of being physically constructed within a reasonable time frame, the jurisdictional issues described above raise concerns regarding whether this alternative could be implemented within a reasonable time frame.

Water Supply Reliability Criteria

The question as to whether or not Hodge Decision flow/diversion criteria would apply to this alternative raises questions as to how effectively this alternative could meet SCWA's water requirements. In addition, the ability to use the facility may be significantly constrained by the City's uses.

Conclusion

This alternative is screened from further evaluation. While this alternative meets the economic/cost and water quality criteria, it fails to meet the technical and operations, jurisdictional, and water supply reliability criteria. This alternative does not meet most of the project objectives. It is speculative whether this alternative would be able to meet the environmental and biological, and timing/schedule criteria.

Diversion at I-5 Location

Under this alternative, SCWA would take delivery of surface water at a new intake location near the mouth of the Lower American River.

Under this alternative, the following facilities would be constructed:

- A new intake structure with pumping facilities located on the Lower American River, with a capacity of up to 85 MGD);
- A raw water pipeline extending from the intake structure to a new water treatment plant in central Sacramento County to serve SCWA needs; and
- A new surface water treatment plant in central Sacramento County.

SCWA would divert up to 90,000 af per year from the Lower American River. It is assumed that any such diversions would be limited by Hodge Decision flow/diversion criteria.

Screening Evaluation

Environmental and Biological Criteria

Although impacts on environmental and biological resources would be similar to the impacts of diversions at other locations, the Lower American River is considered a highly sensitive resource. Many of the facility-related impacts would occur within urban streets and roadways. Relatively few natural resources would be affected. Impacts during construction may be substantial and impacts associated with the diversion may also be of considerable concern. Diversions upstream of the Delta have the potential to affect water supply and quality to Delta exporters. Diversions from the Lower American River also have the potential to result in minor impacts to species listed as threatened or endangered under the federal Endangered Species Act. These impacts would be relatively small, and Water Forum stakeholders have indicated that a diversion from this location may be acceptable. Fisheries impacts associated with diversions from the Lower American River are of substantial concern to resource agencies and the public.

Technical and Operational Criteria

This alternative would require significant agreements with the City of Sacramento for use of City rights-of-way. The City has indicated opposition to this alternative. It is unlikely that the required rights-of-way would be available to SCWA. This alternative would require the use of public right-of-way through the City. The City has indicated opposition to this alternative, and such opposition would complicate and delay implementation of this alternative.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act. These approvals would be difficult to obtain although they have been obtained by other projects. In addition, significant agreements with the City of Sacramento may be required to make use of City rights-of-way and other public facilities. The City has indicated opposition to this alternative.

Permitting processes have been difficult for other projects of similar magnitude. In addition, a number of entities may oppose implementation of this alternative. Although Water Forum stakeholders have indicated that a diversion from this location may be acceptable, this alternative may be found inconsistent with the finalized Water Forum Agreement. It may necessitate renegotiation of that agreement through the Water Forum Successor Effort. This alternative may also be inconsistent with the state and federal Wild and Scenic River Acts and the American River Parkway Plan, both of which would require legislative action to amend.

Economic/Cost Criteria

The current estimated cost of this alternative is approximately $300 million to implement and is within the same range of other alternatives available to SCWA.

Water Quality Criteria

This alternative would fully meet all water quality criteria and would provide water quality equal to or better than SCWA's current supplies.

Timing/Schedule Criteria

While this alternative is capable of being physically constructed within a reasonable time frame, the jurisdictional issues described above raise concerns regarding whether this alternative could be implemented within a reasonable time frame.

Water Supply Reliability Criteria

The question as to whether or not Hodge Decision flow/diversion criteria would apply to this alternative raises questions as to how effectively this alternative could meet SCWA's water requirements.

Conclusion

This alternative is screened from further evaluation. While this alternative meets the economic/cost and water quality criteria, it fails to meet most of the basic project objectives. It is speculative whether this alternative could meet the technical and operational criteria, and there is substantial uncertainty regarding the ability of this alternative to meet the environmental and biological, timing/schedule, jurisdictional, and water supply reliability criteria.

Sacramento River Diversion

Three options described in the First Stage Evaluation are discussed below for this alternative.

Option 1: Diversion at Sacramento River Water Treatment Plant

Under this option, SCWA would take delivery of surface water at a new intake location on the Sacramento River near the new City of Sacramento intake structure just downstream of the confluence with the Lower American River.

Under this option, the following facilities would be constructed:

- A new intake structure with pumping facilities located on the Sacramento River, with a capacity of up to 85 MGD;
- A raw water pipeline extending from the intake structure to a new addition to the City of Sacramento's water treatment plant (SRWTP); and
- A new large-diameter water pipeline from the expanded SRWTP to several selected delivery points in Zone 40 in central Sacramento County to serve SCWA needs.

SCWA would divert up to 90,000 af from the Sacramento River pursuant to the Water Forum Agreement. SCWA would divert water in all years, with slightly less surface water being diverted in dry years and more in wet years.

Screening Evaluation

Environmental and Biological Criteria

Much of the facility-related impacts would occur within urban streets and roadways. Relatively few natural resources would be affected. Impacts during construction may be substantial. Impacts associated with the diversion may also be of considerable concern. Diversions upstream of the Delta have the potential to affect water supply and quality to Delta exporters. Diversions from the Sacramento River also have the potential to result in minor impacts to species listed as threatened or endangered under the federal Endangered Species Act.

Technical and Operational Criteria

This option would require significant agreements with the City of Sacramento for expansion of the City's SRWTP. This option would require the use of public right-of-way through the City. The City has indicated opposition to this option, and such opposition would complicate and delay its implementation.

Jurisdictional Criteria

This option would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act. These approvals will be difficult to obtain although they have been obtained by other projects. In addition, significant agreements with the City of Sacramento may be required to

make use of City rights-of-way and other public facilities. The City has indicated opposition to this option.

Economic/Cost Criteria

The current estimated cost of this option is approximately $300 million to implement and is within the same range of other alternatives available to SCWA.

Water Quality Criteria

This option would fully meet all water quality criteria and would provide water quality equal to SCWA's current supplies.

Timing/Schedule Criteria

While this option is capable of being physically constructed within a reasonable time frame, the jurisdictional issues associated with expanding the SRWTP, obtaining right-of-way, and mitigation of business, residential, and traffic impacts raise concerns regarding whether this option could be implemented within a reasonable time frame.

Water Supply Reliability Criteria

This option would fully meet all water supply reliability criteria.

Conclusion

This option is screened from further evaluation. Although it meets the economic/cost, water quality, and water supply criteria, it fails to meet most of the project objectives, and the technical and operational, and jurisdictional criteria. In addition, it is speculative whether it would be capable of meeting the timing/schedule criterion, and some uncertainty about its ability to meet the environmental and biological criteria.

Options 2 and 3: Diversion at Freeport

Under these options, SCWA would take delivery of surface water at a new intake location on the Sacramento River near the community of Freeport. Under Option 2, the following facilities would be constructed:

- A new intake structure with pumping facilities located on the Sacramento River, with a capacity of 85 MGD;
- A raw water pipeline extending from the intake to a new water treatment plant immediately north of the SRWWTP;
- A new water treatment plant located immediately north of the SRWWTP; and
- A treated water conveyance pipeline to several selected delivery points in Zone 40 in central Sacramento County.

Under Option 3, the following facilities would be constructed:

- A new intake structure with pumping facilities located on the Sacramento River, with a capacity of up to 85 MGD;
- A raw water pipeline extending from the intake structure to a new water treatment plant in central Sacramento County to serve SCWA needs; and
- A new surface water treatment plant in central Sacramento County.

SCWA would divert up to 90,000 af from the Sacramento River pursuant to the Water Forum Agreement. SCWA would divert water in all years, with slightly less surface water being diverted in dry years and more in wet years.

Screening Evaluation

Environmental and Biological Criteria

Much of the facility-related impacts would occur within urban streets and roadways. Relatively few natural resources would be affected. Impacts during construction may be substantial and impacts associated with the diversion may also be of considerable concern. Diversions upstream of the Delta have the potential to affect water supply and quality to Delta exporters. Diversions from the Sacramento River also have the potential to result in minor impacts to species listed as threatened or endangered under the federal Endangered Species Act.

Technical and Operational Criteria

There are no known technical or operational issues associated with these options. The City of Sacramento has indicated support of these options.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act. These approvals will be difficult to obtain although they have been obtained by other projects. In addition, significant agreements with the City of Sacramento may be required to make use of City rights-of-way and other public facilities. The City has indicated support of this alternative.

Economic/Cost Criteria

The current estimated cost of Option 2 is approximately $300 million to implement. Option 3 is estimated to cost approximately $280 million to implement. Both options are within the range of other reasonable alternatives available to SCWA.

Water Quality Criteria

These options would fully meet all water quality criteria and would provide water quality equal to SCWA's current supplies.

Timing/Schedule Criteria
These options appear to be capable of being constructed within a reasonable time frame.

Water Supply Reliability Criteria
These options would fully meet all water supply reliability criteria.

Conclusion
Because Option 3 is less expensive than Option 2 and is otherwise identical in meeting all screening criteria, Option 3 will be carried forward to third-stage screening. It meets the technical and operational, economic/cost, water quality, timing/schedule, and water supply criteria. There is uncertainty about its ability to meet the environmental and biological, and jurisdictional criteria.

Surface Water Diversion with Groundwater Banking/Exchange

Under this alternative, SCWA would construct additional facilities to provide for artificial groundwater recharge and recovery. The primary goals of this program would be to minimize the downstream effects of surface water diversions during dry years, and to provide additional groundwater storage for use by SCWA during period of extended drought. Surface water diversion facilities would be required under this alternative. Conceptually, this alternative would allow SCWA to divert less surface water during dry years while it relies more on groundwater and to increase diversions during wet years for both direct use and groundwater recharge. This alternative could conceptually be used in conjunction with any of the surface water diversion facilities discussed above.

Screening Evaluation

Environmental and Biological Criteria
Much of the surface water delivery and groundwater facility-related impacts would occur within urban streets and roadways. Relatively few natural resources would be affected. Impacts during construction may be substantial and impacts associated with the diversion may be somewhat reduced as compared to alternatives not using some sort of storage but may be of concern. Diversions upstream of the Delta have the potential to affect water supply and quality to Delta exporters; however, these effects may be reduced somewhat with implementation of a groundwater recharge and recovery program. Diversions from the Sacramento River also have the potential to result in minor impacts to species listed as threatened or endangered under the federal Endangered Species Act.

In addition to the necessary surface water facilities, substantial groundwater facilities would be required under this alternative including, but not limited to, injection and withdrawal wells, additional distribution pipelines, spreading

basins, and groundwater treatment facilities. Active operation of the groundwater basin could result in environmental effects such as saturation of near-surface soils, which could lead to impacts on structures due to increased settling. In addition, operation of the groundwater basin may result in substantial fluctuations of groundwater levels, possibly affecting existing groundwater users, particularly if groundwater levels are further reduced as a result of significant withdrawals during dry years.

Technical and Operational Criteria

While groundwater banking is generally considered technically feasible, there is substantial uncertainty regarding whether this alternative would be operationally feasible. Limited information is available to accurately determine how stored groundwater would interact with native groundwater and whether stored groundwater would be available when it is needed for withdrawal.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation of both surface and groundwater facilities. Major permits/approvals include state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act. Additional permits from the California Department of Health Services and Office of Toxic Substances would be required. These approvals will be difficult to obtain although they have been obtained by other projects. In addition, significant agreements with the City of Sacramento may be required to make use of City rights-of-way and other public facilities

There are many uncertainties associated with implementing a groundwater recharge and recovery program. No clear institutional framework currently exists in the Zone 40 service area within Sacramento County. The feasibility of obtaining the necessary agreements and approvals to operate the groundwater basin as an active recharge and recovery area is uncertain. Additionally, implementation of such a program would likely require regulation of hundreds of overlying agricultural and municipal pumpers. Obtaining control over these entities would require significant regulatory enforcement. A number of entities within the County are in the initial stages of exploring such a concept. The outcome of that process will likely not be known for 2–5 years. Creation of governance and physical implementation would take a similar additional amount of time. This it would be anywhere from 5–10 years before implementation of this alternative could be initiated.

Economic/Cost Criteria

The current estimated cost of this alternative is approximately $400 million to implement and is significantly higher than other alternatives available to SCWA.

Water Quality Criteria

This alternative would fully meet all water quality criteria and would provide water quality equal to SCWA's current supplies. However, surface water would likely have to be treated prior to injecting into the groundwater aquifer.

Timing/Schedule Criteria

While this alternative is capable of being physically constructed within a reasonable time frame, the operational feasibility and the jurisdictional governance issues described above indicate that this alternative not be implemented within a reasonable time frame.

Water Supply Reliability Criteria

There is uncertainty regarding whether stored water supplies would be available as assumed under this alternative. Substantial additional study would be required to determine how the groundwater basin would respond to the active operations required under this alternative.

Conclusion

Although this alternative meets the water quality criteria, it does not meet the economic/cost criterion. In addition, there is substantial uncertainty about its ability to meet the environmental and biological, technical and operational, jurisdictional, timing/schedule, and water supply. However, this alternative will be carried forward for additional review.

EBMUD Alternatives

American River Diversions

Diversion at Folsom South Canal

Under this alternative, EBMUD would take delivery of surface water from a new intake at the terminus of the Folsom South Canal near Twin Cities Road in southern Sacramento County.

Under this alternative, the following facilities would be constructed:

- A new intake structure with pumping facilities located at approximately Grant Line Road (the current delivery point in EBMUD's contract), or at the terminus of the Folsom South Canal, with a capacity of up to 100 MGD;
- A 15–30-mile long (depending on intake location) raw water pipeline extending from the intake structure to a new water treatment plant near the existing Mokelumne Aqueducts in San Joaquin County to treat the water before introducing it into the aqueducts; and
- A new pumping plant to pump the treated water into the Mokelumne Aqueducts.

EBMUD would divert up to 150,000 af per year from the Lower American River through the Folsom South Canal, consistent with its contract with Reclamation. Any such diversions would be limited by Hodge Decision flow/diversion criteria.

Screening Evaluation

Environmental and Biological Criteria

Although impacts on environmental and biological resources would be similar to diversions at other locations, the Lower American River is considered a highly sensitive resource. Much of the facility-related impacts would occur within rural roadways and agricultural lands. Relatively few natural resources would be affected. Impacts during construction may be substantial and impacts associated with the diversion may also be of considerable concern. Diversions upstream of the Delta have the potential to affect water supply and quality to Delta exporters. Diversions from the Lower American River also have the potential to result in minor impacts to species listed as threatened or endangered under the federal Endangered Species Act. While these impacts would be relatively small, they would be contrary to the intent of the Water Forum, which is striving to preserve and enhance degraded biological resource conditions in and along the lower American River. Fisheries impacts associated with diversions from the Lower American River are of substantial concern to resource agencies and the public.

Technical and Operational Criteria

There are no known technical or operational issues associated with this alternative.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act. These approvals will be difficult to obtain although they have been obtained by other projects.

The project would be highly controversial. Permitting processes have been difficult for other projects of similar magnitude. In addition, a number of entities have actively opposed implementation of this alternative for many years, including through legal action. The ability of this alternative to meet this criterion is highly uncertain.

Economic/Cost Criteria

The current estimated cost of this alternative is approximately $240 million to implement and is the least cost alternative available to EBMUD.

Water Quality Criteria

This alternative would fully meet all water quality criteria and would provide water quality approximately equal to EBMUD's current supplies.

Timing/Schedule Criteria

While this alternative is capable of being physically constructed within a reasonable time frame, the jurisdictional issues described above indicate that this alternative could not be implemented within a reasonable time frame.

Water Supply Reliability Criteria

This alternative may not meet EBMUD's water supply reliability criterion. Although it would supply an alternate source of high quality water, limitation on the availability of this supply during droughts, resulting from restrictions imposed by the Hodge Decision, reduce the ability of this alternative to meet this criterion.

Conclusion

This alternative is screened from further evaluation. While this alternative meets the technical and operational, economic/cost, and water quality criteria, it fails to meet the timing/schedule criteria and does not meet most of the basic project objectives. It is speculative whether this alternative would meet the environmental and biological, jurisdictional, and water supply reliability criteria.

Diversion at Site 5 Location

Under this alternative, EBMUD would take delivery of surface water at a new intake location upstream of the mouth of the Lower American River at the location identified as "Site 5."

Under this alternative, the following facilities would be constructed:

- A new intake structure with pumping facilities located on the Lower American River, with a capacity of up to 100 MGD;
- A raw water pipeline extending from the intake structure to the Folsom South Canal;
- A new intake structure with pumping facilities located at the terminus of the Folsom South Canal, with a capacity of up to 100 MGD;
- A raw water pipeline extending from the intake structure to a new water treatment plant near the existing Mokelumne Aqueducts in San Joaquin County to treat the water before introducing it into the aqueducts; and
- A new pumping plant to pump the treated water into the Mokelumne Aqueducts.

EBMUD would divert up to 150,000 af per year from the Lower American River consistent with its contract with Reclamation. It is assumed that any such diversions would be limited by Hodge Decision flow/diversion criteria. EBMUD's existing CVP contract would also required to complete and implement a water storage strategy prior to this alternative being approved.

Screening Evaluation

Environmental and Biological Criteria

Although impacts on environmental and biological resources would be similar to diversions at other locations, the Lower American River is considered a highly

sensitive resource. Much of the facility-related impacts would occur within urban streets and roadways. Relatively few natural resources would be affected. Impacts during construction may be substantial and impacts associated with the diversion may also be of considerable concern. Diversions upstream of the Delta have the potential to affect water supply and quality to Delta exporters. Diversions from the Lower American River also have the potential to result in minor impacts to species listed as threatened or endangered under the federal Endangered Species Act. While these impacts would be relatively small, they would be controversial. Fisheries impacts associated with diversions from the Lower American River are of substantial concern to resource agencies and the public.

Technical and Operational Criteria

This alternative may require significant agreements with the City of Sacramento for use of City rights-of-way. It is unlikely that the required rights-of-way would be readily available to EBMUD. This alternative would require the use of public right-of-way through the City. The City has indicated opposition to this alternative, and such opposition would complicate and delay implementation of this alternative.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act. These approvals will be difficult to obtain although they have been obtained by other projects.

Permitting processes have been difficult for other projects of similar magnitude. In addition, a number of entities may oppose implementation of this alternative. A new diversion facility at this location on the Lower American River would be inconsistent with the state and federal Wild and Scenic River Acts and the American River Parkway Plan, both of which would require legislative action to amend. According to EBMUD's existing contract, diversions at Site 5 would also be subject to completion and implementation of a groundwater storage strategy.

Economic/Cost Criteria

The current estimated cost of this alternative is approximately $500 million to implement and is within the same range of other alternatives available to EBMUD.

Water Quality Criteria

This alternative would fully meet all water quality criteria and would provide water quality approximately equal to EBMUD's current supplies.

Timing/Schedule Criteria

While this alternative is capable of being physically constructed within a reasonable time frame, the jurisdictional issues described above raise concerns

regarding whether this alternative could be implemented within a reasonable time frame.

Water Supply Reliability Criteria

This alternative may not meet EBMUD's water supply reliability criterion. Although it would supply an alternate source of high quality water, limitation on the availability of this supply during droughts resulting from restrictions imposed by the Hodge Decision reduce the ability of this alternative to meet this criterion.

Conclusion

This alternative is screened from further evaluation. While this alternative passes the economic/cost and water quality criteria, it fails to meet the technical and operational, and jurisdictional criteria. In addition, it is speculative whether this alternative could meet the environmental and biological, timing/schedule, and water supply reliability criteria.

Sacramento River Diversions

Diversions at Sacramento River Water Treatment Plant

Under this alternative, EBMUD would take delivery of surface water at a new intake location on the Sacramento River near the new City of Sacramento intake structure just downstream of the confluence with the Lower American River.

Under this alternative, the following facilities would be constructed:

- A new intake structure with pumping facilities located on the Sacramento River, with a capacity of up to 100 MGD;
- A raw water pipeline extending from the intake structure to the Folsom South Canal;
- A new intake structure with pumping facilities located at the terminus of the Folsom South Canal, with a capacity of up to 100 MGD;
- A raw water pipeline extending from the intake structure to a new water treatment plant near the existing Mokelumne Aqueducts in San Joaquin County to treat the water before introducing it into the aqueducts; and
- A new pumping plant to pump the treated water into the Mokelumne Aqueducts.

Although this location is not specifically authorized in EBMUD's amendatory CVP contract, it is assumed that EBMUD would divert up to 112,000 af per year from the Sacramento River pursuant to its CVP contract (taking shortage provisions into account), with diversions being limited to a total of 165,000 af over a consecutive 3-year drought period. Hodge Decision flow requirements would not apply to this location.

Screening Evaluation

Environmental and Biological Criteria

Much of the facility-related impacts would occur within urban streets and roadways. Relatively few natural resources would be affected. Impacts during construction may be substantial and impacts associated with the diversion may also be of considerable concern. Diversions upstream of the Delta have the potential to affect water supply and quality to Delta exporters. Diversions from the Sacramento River also have the potential to result in minor impacts to species listed as threatened or endangered under the federal Endangered Species Act. While these impacts would be relatively small, they would be controversial.

Technical and Operational Criteria

This alternative may require significant agreements with the City of Sacramento for use of City rights-of-way. The City has indicated opposition to this alternative. It is unlikely that the required rights-of-way would be readily available to EBMUD. This alternative would require the use of public right-of-way through the City. The City has indicated opposition to this alternative, and such opposition would complicate and delay implementation of this alternative.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include modification to EBMUD's amendatory CVP contract, state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act. These approvals will be difficult to obtain although they have been obtained by other projects. In addition, significant agreements with the City of Sacramento may be required to make use of City rights-of-way and other public facilities. The City has indicated opposition to this alternative.

Economic/Cost Criteria

The current estimated cost of this alternative is approximately $500 million to implement and is within the range of other alternatives available to EBMUD.

Water Quality Criteria

This alternative would fully meet all water quality criteria and would provide water quality approximately equal to EBMUD's current supplies.

Timing/Schedule Constraints

While this alternative is capable of being physically constructed within a reasonable time frame, the jurisdictional issues described above raise concerns regarding whether this alternative could be implemented within a reasonable time frame.

Water Supply Reliability Criteria

This alternative would fully meet all water supply reliability criteria.

Conclusion

This alternative is screened from further evaluation. Although it meets the economic/cost, water quality, and water supply criteria, it fails to meet the technical and operational, and jurisdictional criteria. In addition, it is speculative whether this alternative could meet the environmental and biological, and timing/schedule criteria.

Diversions at Freeport

Under this alternative, EBMUD would take delivery of surface water at a new intake location on the Sacramento River near the community of Freeport. Under this alternative, the following facilities would be constructed:

- A new intake structure with pumping facilities located on the Sacramento River, with a capacity of up to 100 MGD;
- A raw water pipeline extending from the intake structure to the Folsom South Canal;
- A new intake structure with pumping facilities located at the terminus of the Folsom South Canal, with a capacity of up to 100 MGD;
- A raw water pipeline extending from the intake structure to a new water treatment plant near the existing Mokelumne Aqueducts in San Joaquin County to treat the water before introducing it into the aqueducts; and
- A new pumping plant to pump the treated water into the Mokelumne Aqueducts.

EBMUD would divert up to 133,000 af per year from the Sacramento River pursuant to its CVP contract (taking shortage provisions into account), with diversions being limited to a total of 165,000 af over a consecutive 3-year drought period. Hodge Decision flow requirements would not apply to this location.

Screening Evaluation

Environmental and Biological Criteria

Much of the facility-related impacts would occur within urban streets and roadways. Relatively few natural resources would be affected. Impacts during construction may be substantial and impacts associated with the diversion may also be of considerable concern. Diversions from the Sacramento River also have the potential to result in minor impacts to species listed as threatened or endangered under the federal Endangered Species Act.

Technical and Operational Criteria

There are no known technical or operational issues associated with this alternative.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act. These approvals will be difficult to obtain but they have been obtained by other projects. In addition, significant agreements with the City of Sacramento may be required to make use of City rights-of-way and other public facilities. The City has indicated support of this alternative.

Economic/Cost Criteria

The current estimated cost of this alternative is approximately $500 million to implement and is within the same range of other alternatives available to EBMUD.

Water Quality Criteria

This alternative would fully meet all water quality criteria and would provide water quality approximately equal to EBMUD's current supplies.

Timing/Schedule Criteria

This alternative appears to be capable of being constructed within a reasonable time frame.

Water Supply Reliability

This alternative would fully meet all water supply reliability criteria.

Conclusion

This alternative will be carried forward to third-stage screening. Although it meets technical and operational, economic/cost, water quality, timing/schedule criteria, and water supply criteria, there is uncertainty about its ability to meet the environmental and biological, and jurisdictional criteria.

Surface Water Diversion with Groundwater Banking/Exchange

Under this alternative, EBMUD would participate in the construction of additional facilities to provide artificial groundwater recharge and recovery in the Sacramento County area. The primary goal of this program would be to minimize the minor downstream effects associated with EBMUD diversions during dry years. Surface water diversion facilities would be required under this alternative. Conceptually, this alternative would allow EBMUD to divert surface water only during normal and wet years and rely on stored groundwater during dry years. This alternative could be used in conjunction with any of the surface water diversion facilities discussed above.

Screening Evaluation

Environmental and Biological Criteria

Much of the surface water delivery and groundwater facility-related impacts would occur within urban streets and roadways. Relatively few natural resources would be affected. Impacts during construction may be substantial and impacts associated with the diversion may also be of considerable concern. Diversions from the Sacramento River also have the potential to result in minor impacts to species listed as threatened or endangered under the federal Endangered Species Act.

Substantial additional facilities would be required under this alternative including, but not limited to, injection and withdrawal wells, additional distribution pipelines, spreading basins, and groundwater treatment facilities. Also, active operation of the groundwater basin could result in environmental effects such as saturation of near-surface soils, which could lead to impacts on structures due to increased settling. In addition, operation of the groundwater basin may result in substantial fluctuations of groundwater levels, possibly affecting existing groundwater users, particularly if groundwater levels are further reduced as a result of significant withdrawals during dry years.

Technical and Operational Criteria

While groundwater banking is generally considered technically feasible, there is substantial uncertainty regarding whether this alternative would be operationally feasible. Limited information is available to accurately determine how stored groundwater would interact with native groundwater and whether stored groundwater would be available when it is needed for withdrawal.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation of both surface and groundwater facilities. Major permits/approvals include state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act. Additional permits from the California Department of Health Services and from the Office of Toxic Substances would be required. These approvals will be difficult to obtain but they have been obtained by other projects. In addition, significant agreements with the City of Sacramento may be required to make use of City rights-of-way and other public facilities. The City has indicated opposition to certain of the surface water delivery alternatives.

There are many uncertainties associated with implementing a groundwater recharge and recovery program. No clear legal or institutional framework currently exists in Zone 40 service area or the Galt area groundwater basin within Sacramento County. The feasibility of obtaining the necessary agreements and approvals to operate the groundwater basin as an active recharge and recovery area is highly uncertain. A number of entities within the county are in the initial stages of exploring such a concept. The outcome of that process will likely not be known for 2–5 years. Creation of governance and physical implementation

would take a similar additional amount of time. Thus it would be anywhere from 5–10 years before implementation of this alternative could begin.

Economic/Cost Criteria

The current estimated cost of this alternative is approximately $600 million to implement and is significantly higher than other alternatives available to EBMUD.

Water Quality Criteria

It is assumed that this alternative may meet EBMUD's water quality criteria, although substantial additional studies would be required to ensure that the quality of water recovered would be essentially identical to the quality of water recharged.

Timing/Schedule Criteria

While this alternative is capable of being physically constructed within a reasonable time frame, the operational feasibility and the jurisdictional and governance issues described above indicate that this alternative would not be implemented within a reasonable time frame.

Water Supply Reliability Criteria

There is uncertainty regarding whether stored water supplies would be available as assumed under this alternative. Substantial additional study would be required to determine how the groundwater basin would respond to the active operations required under this alternative.

Conclusion

Although this alternative meets the water quality criteria, it fails to meet the economic/cost criteria. In addition, it is speculative whether this alternative is able to meet the environmental and biological, technical and operational, jurisdictional, timing/schedule, and water supply reliability criteria. Groundwater banking/exchange has the potential to increase the local benefits of a surface water diversion project. The FRWA agencies also recognize the local interest in such programs, and SCWA is an active participant in the planning process that could develop these programs. Therefore, the EIR/EIS will include a programmatic analysis of a groundwater banking/exchange program to generally identify potential benefits and impacts of such programs. This alternative will therefore be carried forward to third stage screening.

Delta Diversion

There are conceptually a large number of potential locations from which to withdraw water from the Delta. Based on previous efforts, the alternative configuration described below appears to be the most feasible and cost effective. This configuration would generally be applicable to any EBMUD Delta diversion alternative.

Under this alternative, EBMUD would construct a new intake structure on the bank at Indian Slough immediately adjacent to the Mokelumne Aqueducts. The intake facility would be located on an existing intake channel from Indian Slough. There are two potential options under this alternative that use different water treatment approaches. Under Option 1, the water would be treated to drinking water standards and then placed into the Mokelumne Aqueducts for delivery to the EBMUD service area. The following facilities would be required:

- A new intake structure with pumping facilities located on Indian Slough, with a capacity of up to 100 MGD; and
- A new 100-MGD treatment and pumping plant.

Under Option 2, EBMUD would construct an advanced water treatment plant, probably including reverse osmosis, to produce water equivalent to its existing water quality.

- A new intake structure with pumping facilities located on Indian Slough, with a capacity of up to 100 MGD;
- A 100-MGD advanced treatment plant using brackish water reverse osmosis dfederal Endangered Species Actlination located near the site;
- A brine disposal pipeline to convey concentrated salts approximately to Suisun Bay where it could be discharged into waters of a more similar quality; and
- A new conveyance pipeline within the existing Mokelumne Aqueducts right-of-way to convey the treated water directly to EBMUD's distribution system.

Although this location is not specifically authorized in EBMUD's amendatory CVP contract, it is assumed that EBMUD would divert up to 133,000 af per year from the Delta pursuant to its CVP contract (taking shortage provisions into account), with diversions being limited to a total of 165,000 af over a consecutive 3-year drought period. Hodge Decision flow requirements would not apply to this location.

Screening Evaluation

Environmental and Biological Criteria

Under this alternative, construction related impacts would be relatively minor as most construction activity would be limited to existing rights-of-way and/or lower density housing areas. Diversions from the Delta have the potential to result in impacts to species listed as threatened or endangered under the federal Endangered Species Act. This location and most other potential Delta locations available to EBMUD are within the primary spawning habitat for delta smelt, a listed species. In addition, increased diversions within the central Delta have the potential to result in the movement of juvenile salmonids listed under the federal

Endangered Species Act into the central Delta where their survival is greatly reduced.

Option 2 of this alternative would also require the disposal of highly saline brine into the San Francisco Bay complex. There are likely to be significant environmental concerns associated with such a discharge.

Technical and Operational Criteria

Option 1 would meet these criteria. Delta water is successfully treated by a large number of entities.

Under Option 2, while desalination is a continually improving technology that is used in the Middle East, there has been little experience with it in North America. In addition, the facility required by EBMUD would be one of the largest facilities in the world. Currently in California, there are several small desalination facilities. The largest of these has a capacity of about 7 MGD. Several agencies in Southern California are pursuing desalination as a supplemental supply. Agencies in the Monterey California area have studied desalination as a potential water supply source for several years. In Tampa, Florida, a 28-MGD facility is expected to be online by mid-2003. Several agencies in California are exploring the construction of facilities up to 50 MGD. However, no one in North America is currently proposing any facility nearly as large as that required under Option 2 this alternative. The technology to construct and reliably operate a desalination plant of this magnitude does not reliably exist.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include amending EBMUD's CVP water service contract, state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act. These approvals will be difficult to obtain although they have been obtained by other projects. Obtaining a permit to discharge brine under Option 2 may be problematic. No such discharge permit for a desalination facility of this size has ever been issued in California. The ability to obtain such approval is highly speculative.

Economic/Cost Criteria

The estimated cost of Option 1 is approximately $150 million.

The current estimated cost of Option 2 is approximately $850 million, which substantially exceeds the costs associated with other feasible alternatives available to EBMUD. In addition, desalination is an energy intensive use. Estimated annual operation and maintenance costs associated with this alternative are approximately 300% greater than those of other alternatives.

Water Quality Criteria

Using Option 1, this alternative would meet the criterion requiring an alternative to meet drinking water standards. Option 1 would not, however, meet the criterion requiring an alternative to maintain current finished water quality.

Water quality under this option would be substantially poorer than EBMUD's current water supplies. EBMUD extensively evaluated the Delta water quality in its 2000 EIR/EIS and determined that without advanced treatment such an alternative is not feasible. Further discussion of water quality issues associated with a Delta source is included in this report as Attachment 3.

By providing advanced treatment under Option 2, this alternative would essentially meet most water quality screening criteria.

Timing/Schedule Criteria

Given the technical and permitting uncertainties associated with a large-scale desalination facility, it is highly unlikely that Option 2 could be implemented in a reasonable time frame.

Water Supply Reliability Criteria

This alternative would meet EBMUD's dry year water supply needs. It would also provide an alternative source of water to EBMUD's existing Pardee Reservoir supplies.

Conclusion

This alternative is screened from further evaluation. While Option 1 would generally meet most of the criteria, it fails to meet the environmental and biological, and water quality criteria. Option 2 fails to meet the environmental and biological, technical and operational, timing/schedule, and economic/cost criteria. The water supply reliability criteria would be met by this alternative.

This alternative has been suggested by other water users as one that may minimize effects on Delta water quality and Delta exports as compared to an upstream diversion location. To ascertain whether the alternative could minimize these effects, additional analysis was undertaken by the FRWA agencies. For purposes of this analysis, assumptions were made that SCWA would independently construct an upstream diversion facility similar to those described above, and that EBMUD would construct diversion facilities within the Delta. The analysis indicates that there would be little difference in effects on Delta water quality, Delta exports, or the position of X2 (Table 7-1) as compared to an alternative where both FRWA agencies took delivery of water at an upstream location.

Table 7-1. Summary CALSIM Modeling Statistics for EBMUD Delta Diversion Alternative.

	EBMUD/SCWA at Freeport 2001	EBMUD Bixler Diversion 2001/SCWA Freeport
Storage, TAF (End of Sept)		
Total CVP North Storage	-23	-27
CVP San Luis Storage	1	0
Oroville Storage	-20	-12
SWP San Luis Storage	0	0
Deliveries, TAF/yr		
CVP—North of Delta	0	-1
CVP—South of Delta	-6	-7
SWP	-8	-4
Delta Pumping, TAF/yr		
Tracy Pumping Plant	-7	-9
Banks Pumping Plant	-5	-3
X2 Position, feet		
Average movement upstream	65	98
Maximum Month (Feb-June)	1,086 (1 month)	1,086 (2 months)
Project Diversions, TAF/yr		
SCWA CVP at SRWTP*	9	9
SCWA CVP at Freeport	29	29
SCWA Excess	18	18
SCWA “Other Water”	13	13
EBMUD	23	23

As clearly demonstrated in Table 7-1, this alternative does not offer any measurable advantages as compared to the FRWP in terms of effects on the CVP or SWP. In addition, using the position of X2 as a measure of potential fishery and water quality impacts in the Delta, this alternative would result in slightly greater impacts than the FRWP.

Seawater/Brackish Water Desalination

Under this alternative, EBMUD would construct an approximately 55 MGD desalination plant at a location near or immediately upstream of the San Francisco Bay. One potential location would be at EBMUD’s existing

wastewater treatment plant located at the eastern end of the Bay Bridge so that the existing outfall could be used to dispose of brine. A new intake would have to be built. Other potential sites with existing intake and outfall structures and power generation capabilities (e.g., C&H Sugar at Crockett, Mirant Power Plants at Antioch and Pittsburg) could also be considered. This facility would be operated only in dry years to meet EBMUD's identified needs. Salt water would be pumped from the bay and treated through a reverse osmosis process. The treated water would be placed into EBMUD's distribution system and the concentrated brine would be discharged to the bay. The desalination facility would require approximately 5–10 acres. Specific locations have not been identified for a plant of this size, but it is assumed that suitable locations are available.

Screening Evaluation

Environmental and Biological Criteria

Construction and operation of the desalination facility itself would likely have minimal impacts. Desalination facilities are normally housed in typical industrial-style buildings and do not require an unusual amount of space. The facility would be located within an industrial area and would likely not involve disturbance to natural areas or surrounding land uses.

Construction and operation of a water intake structure in the Bay would result in some potential effects. Juvenile salmonids use the Bay as a migratory pathway to the ocean during early life stages. Other sensitive species may also be potentially affected by the intake facility.

Uncertainty exists in terms of the potential impacts of discharging the brine. Salts and other constituents would be highly concentrated in the brine; the potential environmental effects of such a discharge could be unacceptable and may depend on the availability of sufficient amounts of water to dilute the brine before discharge.

Technical and Operational Criteria

While desalination is a continually improving technology that is used in the Middle East, there has been little experience with it in North America. In addition, the facility required by EBMUD would be one of the largest facilities in the world. Currently in California, there are several small desalination facilities. The largest of these has a capacity of about 7 MGD. Several agencies in Southern California are pursuing desalination as a supplemental supply. Agencies in the Monterey, California, area have studied desalination as a potential water supply source for several years. In Tampa, Florida, a 28-MGD facility is expected to be online in mid-2003. Several agencies in California are exploring the construction of facilities up to 50 MGD.

Jurisdictional Criteria

This alternative would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include potentially

amending EBMUD's CVP water service contract (depending on the location of the alternative), state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, Section 106 of the National Historic Preservation Act, and NPDES permit from the RWQCB for the discharge of the brine. Obtaining a permit to discharge brine may be problematic. No such discharge permit for a desalination facility of this size has ever been issued in the San Francisco Bay Area. The ability to obtain such approval is highly uncertain.

Economic/Cost Criteria

The current estimated cost of this alternative is approximately $300 million and is in the same range of other alternatives available to EBMUD. However, desalination is an energy intensive use. Estimated annual operation and maintenance costs associated with this alternative are approximately 300% greater than those of other alternatives.

Water Quality Criteria

By providing advanced treatment, this alternative would meet most water quality screening criteria. However, the criterion regarding providing the highest quality source water available would not be met.

Timing/Schedule Criteria

Given the technical and permitting uncertainties associated with a large-scale desalination facility, it is highly uncertain as to whether this alternative could be implemented in a reasonable time frame.

Water Supply Reliability Criteria

This alternative would meet EBMUD's dry year water supply needs. It would also provide an alternative source of water to EBMUD's existing Pardee Reservoir supplies.

Conclusion

This alternative is screened from further evaluation. It fails to meet the technical and operational and water quality criteria. In addition, it is speculative as to whether this alternative could meet the environmental and biological, jurisdictional, timing/schedule, and economic/cost criteria. Other criteria could likely be met by this alternative.

Enlarged Reservoir Storage

Expanded Los Vaqueros Reservoir

Los Vaqueros Reservoir is a 100,000–acre-foot "offstream" storage facility owned and operated by the Contra Costa Water District (CCWD). Current operations of Los Vaqueros Reservoir are to provide 3–6 months (variable) emergency storage for CCWD, and to divert and store higher quality water (i.e., lower in chlorides) from the Delta to blend with lower quality water present in

the Delta in subsequent months in order to improve the quality of water delivered to CCWD customers.

As part of the permitting and approval process, substantial areas around the reservoir were dedicated as easements to provide habitat in perpetuity for the federally and state-listed San Joaquin kit fox and other species.

The CALFED Bay-Delta Program identified expansion of the existing Los Vaqueros Reservoir system as one of the specific surface storage projects that should undergo further study. The CALFED Program Record of Decision (CALFED ROD) included the following finding (in part):

> "Expand Los Vaqueros Reservoir by up to 400 thousand acre feet… with local partners as part of a Bay Area water quality and water supply reliability initiative."

There are three primary objectives for the CALFED study of the expansion of the Los Vaqueros Reservoir:

- improvement of Bay Area water quality,
- improvement of Bay Area water supply reliability, and
- contribution to enhancement of the San Francisco–San Joaquin Bay-Delta environment.

The CCWD Board of Directors adopted a set of principles (CCWD Principles) on April 19, 2000, that must be met by any project involving the existing Los Vaqueros Reservoir Project or the Los Vaqueros Reservoir site before CCWD will support a proposal for reservoir expansion. These principles are as follows:

- The project improves water quality and reliability for CCWD.
- The project enhances the Delta environment.
- The project protects and enhances the fishery and terrestrial species benefits provided by the existing Los Vaqueros Project.
- The project preserves and increases the recreational opportunities of the Los Vaqueros Project.
- CCWD must retain control of the watershed and operation of the reservoir.
- The project protects and reimburses the financial investment made by the CCWD customers who financed the existing $450 million Los Vaqueros Project.
- The proposal would be placed before the voters of the Contra Costa Water District.

The expansion of Los Vaqueros Reservoir is currently under active study. This alternative would involve the construction of a new dam, most likely downstream

of the existing dam. It would also involve the construction of new pipelines to the Delta, new pump stations, and recreational facilities.

The currently outlined process and schedule are as follows. A study team was established to manage the program. The CALFED ROD outlines a 4-year study process for the Los Vaqueros Reservoir Expansion Studies, which would be followed by permitting, design, and construction if the project were approved for implementation. During 2001 and early 2002, the study team developed a memorandum of understanding among CALFED agencies and Bay Area water agencies to guide the evaluation of the expansion.

The study team is currently developing project alternatives and implementing a process to assess the ability of each alternative to meet the CALFED Program objectives, comply with the CCWD principles, and address criteria regarding engineering, environmental, cost and funding, regulatory, and institutional factors. In mid-2003, the CCWD Board of Directors will decide whether to submit a Los Vaqueros Reservoir expansion project to CCWD voters, tentatively scheduled for November 2003, based on whether a project appears feasible and the CCWD Principles can be met. The current project schedule indicates that if the CCWD Board of Directors decides to submit the project to CCWD voters, and if the voters approve of continuing the study, environmental review and additional engineering studies will be undertaken during 2004, permitting would occur in 2005, and construction could begin as early as 2006.

It is assumed that EBMUD would require approximately 185,000 af of storage in an expanded Los Vaqueros Reservoir to meet its drought planning needs based on sizing studies completed for an Enlarged Pardee Reservoir. Three primary options appear to be conceptually feasible.

Option 1—Mokelumne River Supplies

Under this option, EBMUD would store excess (winter/wet year) flows in an expanded Los Vaqueros Reservoir. Presumably, new pipeline(s) and pumping facilities would be constructed from the existing Mokelumne Aqueducts to Los Vaqueros Reservoir to provide a connection to and from EBMUD's system.

Option 2—Delta Diversion with CVP Supplies

Under this option, EBMUD would construct or participate in the construction of new Delta diversion facilities that would be operated in conjunction with an expanded Los Vaqueros to divert supplies (during winter/wet years) to avoid or minimize water quality, water supply, and fisheries effects. It appears that a new pipeline connection would be needed between the reservoir and the Mokelumne Aqueducts.

Option 3—FRWP with CVP Supplies

Operationally, this option would be similar to Option 2, except that the water would be diverted through joint FRWP facilities and delivered to the reservoir via the Mokelumne Aqueducts as under Option 1.

Treatment

With each of the options described above, a sub-option is to add advanced water treatment, which would be required to provide EBMUD customers with a quality of delivered water consistent with Mokelumne finished water. Although there are optional treatment technologies, the most likely technology would involve the construction of an approximately 55-MGD reverse osmosis plant. Disposal of highly saline brine from the treatment process would also be required.

Screening Evaluation

Environmental and Biological Criteria

There are substantial potential environmental issues associated with the expansion of the Los Vaqueros Reservoir. The environmental review process for the original project was highly complex because of the environmental sensitivity of the watershed lands. Several listed species occur within the watershed or have the potential to occur, including:

- California red-legged frog
- longhorn fairy shrimp
- vernal pool fairy shrimp
- San Joaquin kit fox
- bald eagle

Most of these species occur or have the potential to occur in areas in immediate proximity to the existing reservoir. In addition, much of the land immediately surrounding the existing reservoir was placed into easements to protect the habitat in perpetuity for the San Joaquin kit fox. Federal Endangered Species Act consultation would need to be reinitiated with the U.S. Fish and Wildlife Service with respect to most of the biological opinions obtained for the original Los Vaqueros Reservoir Project. The California Endangered Species Act Memorandum of Understanding for the Los Vaqueros Reservoir Project would also require substantial revision.

The watershed was also determined to be highly sensitive with respect to cultural resources. A total of 56 historic and prehistoric sites were identified during the original studies. In addition, numerous Native American burials were uncovered during excavation of the dam site. It is considered highly likely that additional

resources, potentially including more burials, would be found during excavation at a new dam site downstream.

Although the extent of impacts cannot be determined at this time, the overall environmental sensitivity of the watershed indicates that there are potentially serious environmental issues that have the potential to preclude the expansion of the reservoir.

Disposal of brine from the water treatment process also would result in uncertain environmental impacts. It is likely that the brine would need to be diluted before being discharged into Suisun Bay.

Technical and Operational Criteria

Insufficient studies have been conducted to determine whether this alternative is technically and operationally feasible. Substantial additional engineering and geotechnical studies are required to confirm that it is technically feasible to construct a dam downstream. In addition, there are issues regarding the operation of the existing Los Vaqueros Reservoir during construction of an enlarged facility that have not been thoroughly addressed at this time.

While desalination is a continually improving technology that is used in the Middle East, there has been little experience with it in North America. In addition, the facility required by EBMUD would be one of the largest facilities in the world. Currently in California, there are several small desalination facilities. The largest of these has a capacity of about 7 MGD. Several agencies in Southern California are pursuing desalination as a supplemental supply. Agencies in the Monterey, California area have studied desalination as a potential water supply source for several years. In Tampa, Florida, a 28-MGD facility is expected to be online by mid-2003. Several agencies in California are exploring the construction of facilities up to 50 MGD.

Jurisdictional Criteria

See discussion above under “Environmental and Biological Criterion”. The ability to obtain permits and approvals needed for the project is highly uncertain. Major permits and approvals needed include state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act.

There is a large degree of uncertainty associated with the studies with regard to definition of projects, approvals needed simply to move forward with studies, and a final decision-making process that has not yet been defined. Some of the process-related concerns are described below.

The development and analysis of potential operations and alternatives is exceedingly complex. The limitations on potential reservoir sizing and the different types of demands (water supply/quality versus drought storage) may be contradictory. It is not clear how alternatives will be developed that will meet each potential partner’s needs. It is also not clear how alternatives will be able to be described at an appropriate level in a CEQA/NEPA analysis to move forward

with a project at the conclusion of the studies given that no clear process for developing a specific proposed project has yet been identified.

The identified objectives and constraints on the expansion of Los Vaqueros Reservoir may not be consistent with EBMUD's needs and amendatory CVP contract.

Moving forward with any project is entirely dependent on approval of the CCWD Board of Directors. The CCWD Board may not take action on such an approval until as late as July 2003.

Even if the CCWD Board determines that the studies should be continued, voter approval will be required from CCWD ratepayers in November 2003. If the CCWD ratepayers do not approve the continuation of the studies, they will presumably be terminated.

Economic/Cost Criteria

The costs associated with reservoir enlargement and conveyance facilities under Options 1 and 2 above are likely to be within the range of costs determined to be acceptable. However, because this alternative would result in blending EBMUD's Mokelumne River supplies with Delta supplies, substantial water treatment may also be required. Total capital cost of expanding Los Vaqueros Reservoir to a total storage capacity of 300,000 af is estimated to be approximately $1 billion, of which CCWD would be expected to pay for approximately $250 million. If it were determined that a reverse osmosis facility were also required to meet the water quality objectives, the estimated cost of such a facility is approximately $250 million. In addition, desalination is an energy intensive use. Estimated annual operation and maintenance costs associated with this alternative are likely greater than those of other alternatives.

Water Quality Criteria

If reverse osmosis were provided, this alternative would meet most water quality screening criteria. Without reverse osmosis, the criterion requiring an alternative to provide water quality approximately similar to current finished water quality would not be met.

Timing/Schedule Criteria

Based on the CALFED study schedule, this alternative could not begin to be constructed until at least 2006. In addition, as described above, there is substantial uncertainty regarding whether and how an expansion of the Los Vaqueros Reservoir would proceed. There is a reasonable likelihood that, after spending 2 years on initial studies, the CCWD Board of Directors or CCWD voters could reject such an expansion. In addition, depending on how the studies proceed and how alternatives are formulated, it is conceivable that there would not be sufficient capacity in the reservoir or that operations required to meet the combined needs of multiple agencies would eliminate the potential for EBMUD participation. Finally, the expansion of the reservoir is an extremely complex undertaking and there is a reasonable probability that the schedule as proposed

will not be met, thereby delaying the implementation of any such expansion, should it ultimately be proposed and approved.

This alternative fails to meet this criterion for three reasons. First, there is uncertainty regarding whether this alternative will even be carried past the initial study stages. Second, there are substantial difficulties in organizing and describing potential operational scenarios and alternatives. Third, EBMUD would have little, if any, ability to influence whether the expansion is to be studied further and what alternative, if any, might ultimately be approved.

Water Supply Reliability Criteria

Conceptually, this alternative should be capable of meeting this criterion. Increased reservoir storage is a potential alternative for meeting EBMUD's dry year needs and the Los Vaqueros Reservoir site appears to have sufficient storage capacity. However, the operations of this alternative would required substantial additional clarification and study to determine whether this criterion would be capable of being met.

Conclusion

This alternative is screened from further evaluation. This alternative fails to meet the technical and operational, economic/cost, water quality, and timing/schedule criteria, and does not meet most of the basic project objectives. It is speculative and needs to be further studies and formulated. There are substantial environmental issues that would need to be addressed. There is also substantial uncertainty as to whether the CCWD Board of Directors and the CCWD ratepayers will approve study of the expansion. Finally, even if all of these issues are addressed, it is not clear that, given the potential for the reservoir to be used for a wide range of purposes, such as improving the reliability and quality of South Bay Aqueduct users and the Environmental Water Account, the operations associated with an expanded Los Vaqueros Reservoir would allow EBMUD to meet its dry year water supply needs.

Enlarged Pardee Reservoir

Pardee Reservoir has a total storage capacity of about 198,000 af. The reservoir is impounded by a 350 foot-high concrete curved gravity dam on the Mokelumne River. A separate uncontrolled spillway structure is located south of the dam.

This alternative would involve enlarging EBMUD's existing Pardee Reservoir by:

- constructing a replacement dam about 0.75 mile downstream of the existing dam, and constructing saddle dams;
- refurbishing the existing intake structure and intake tunnel;
- replacing the Pardee powerhouse and transmission lines;

- relocating Pardee Dam and Stoney Creek Roads, replacing the Highway 49 bridge crossing of the Mokelumne River, and removing the existing Middle Bar Road bridge, which is currently closed to traffic because of its poor condition; and
- Relocating recreation facilities above the new shoreline.

The enlarged reservoir would have a maximum water supply level of elevation 601 feet, which is 33 feet higher than the present maximum reservoir level. During winter and spring, the maximum reservoir water level would reach an elevation of 614 feet during periods of high river flows. Maximum reservoir storage would be increased to approximately 376,000 af.

Screening Evaluation

Environmental and Biological Criteria

Enlarging Pardee would result in impacts to biological and cultural resources within the pool of the enlarged reservoir, which would cover an additional 1,200 acres at its maximum elevation. Although it does not appear that the area affected supports unique or rare resources, the magnitude of the impact is large.

In addition, approximately 1–1.5 miles of the Mokelumne River channel would be inundated, resulting in potential recreation effects. The reservoir operation plan would minimize these effects by lowering the reservoir elevation during summer months to preserve the whitewater run, known as the Electra Run, upstream of the Highway 49 bridge.

Enlarging the reservoir could provide environmental benefits to the Mokelumne River downstream of Camanche Reservoir by potentially providing increased flows and additional cold water storage for releases to the river.

Technical and Operational Criteria

Based on the feasibility studies conducted by EBMUD, it appears that this alternative is technically and operationally feasible. The project would be sized to fully meet EBMUD's dry year water needs. The technology exists and the site is available to EBMUD.

Jurisdictional Criteria

Enlarging Pardee Reservoir would result in significant controversy. A number of entities may oppose the enlargement. Because the existing reservoir and powerhouse are licensed by FERC, FERC would be the federal lead agency to review an application for amendment of the license. In addition, it is likely that additional or revised water rights would have to be obtained from the California State Water Resources Control Board. This process is extensive and any application for additional water rights would likely be opposed by several entities.

Economic/Cost Criteria

The current estimated cost of this alternative is approximately $360 million. This cost is within the same range of other feasible alternatives available to EBMUD.

Water Quality Criteria

This alternative would fully meet all water quality criteria and would provide water quality identical to EBMUD's current supply.

Timing/Schedule Constraints

While this alternative is capable of being physically constructed within a reasonable time frame, the jurisdictional issues described above raise concerns regarding whether this alternative could be implemented within a reasonable time frame.

Water Supply Reliability

This alternative would provide additional water supply to meet EBMUD's dry year needs. It would also replace or refurbish some of the older portions of EBMUD's water supply system, including Pardee Dam, the intake structure, and the intake tunnel. However, it would not provide an alternative source of water to protect against a major incident on the Mokelumne River, nor would it protect against possible outages associated with a major earthquake that could disrupt the Mokelumne Aqueducts across the Delta.

Conclusion

This alternative will be carried forward to third-stage screening. Although it meets the technical and operational, economic/cost, and water quality criteria, there is uncertainty about its ability to meet the environmental and biological, jurisdictional, timing/schedule, and water supply reliability criteria.

Summary of Second Stage Screening

Based on the above screening analysis, a number of alternatives are eliminated from further consideration. The alternatives eliminated are listed in Table 7-2.

Table 7-2. Alternatives Eliminated during Second Stage Screening

SCWA Alternatives Eliminated	EBMUD Alternatives Eliminated
American River—Diversion at Fairbairn Water Treatment Plant	American River—Diversion at Folsom South Canal
American River—Diversion at I-5 location	American River—Diversion at Site 5
Diversion at Sacramento River—Options 1 and 2	Diversion at Sacramento River Water Treatment Plant
	Delta Diversion
	Desalination
	Expanded Los Vaqueros Reservoir

The alternatives remaining under consideration for each agency are listed in Table 7-3.

Table 7-3. Alternatives Not Eliminated during Second Stage Screening

SCWA Alternatives	EBMUD Alternatives
▪ Diversion at Freeport: Sacramento River Diversion—Option 3	▪ Diversion at Freeport
	▪ Enlarged Pardee Reservoir
▪ Surface water diversion with groundwater banking/exchange	▪ Surface water diversion with groundwater banking/exchange

Alternatives to Be Analyzed in the EIR/EIS

Section 15126(d) of the State CEQA Guidelines state that an EIR must describe and evaluate a reasonable range of alternatives that would feasibly attain most of the basic project objectives, and would avoid or substantially lessen any of the significant impacts of the project as proposed. NEPA also requires that a "reasonable range" of alternatives be considered in an EIS. Clean Water Act Section 404(b)(1) Guidelines require that project applicants identify the "least environmentally damaging practicable alternative." For the FRWP, analysis and third-stage screening of alternatives will take place within the EIR/EIS being prepared for the project. For purposes of analysis in the EIR/EIS, independent alternatives for SCWA and EBMUD will be combined to meet each agency's basic project purpose. Given the independent alternatives that remain after second-stage screening, the following logical combined action alternatives can be formulated:

- Combined SCWA/EBMUD diversion at the Freeport location,

- SCWA diversion at the Freeport location, combined with EBMUD enlarged Pardee Reservoir, and
- Combined SCWA/EBMUD surface water diversion at Freeport with groundwater banking/exchange (see discussion below).

Additionally, a no action alternative will be evaluated in the EIR/EIS as required by NEPA and CEQA.

During the environmental and engineering studies to be conducted prior to and as part of the EIR/EIS process, specific information regarding facility locations and project operations will be developed. As part of that process, additional facility and operational variations of these base alternatives may be identified for examination in the EIR/EIS, thus generating additional action alternatives. The EIR/EIS will serve not only as compliance with CEQA and NEPA, but also as the third stage of the alternatives screening process and will be used to identify the least environmentally damaging, practicable alternative in compliance with the Section 404(b)(1) Guidelines.

Evaluation of Surface Water Diversion with Groundwater Banking/Exchange Alternatives

As fully described above, there is substantial uncertainty associated with groundwater banking/exchange programs in the Sacramento area; these alternatives may not meet the alternatives screening criteria to be evaluated in the EIR/EIS.

Groundwater banking/exchange was suggested during the EIR/EIS scoping process as an alternative that could minimize effects on Delta exports and Delta water quality as compared to surface water diversions proposed as part of the FRWP. It is anticipated that implementation of a groundwater banking/exchange program would result in very slight differences in Delta exports and Delta water quality as compared to alternatives that do not include such a program.

However, the FRWA agencies also recognize the local interest in such programs, and that SCWA is an active participant in the planning process that could develop these programs. Groundwater banking/exchange has the potential to increase the local benefits of a surface water diversion project. Therefore, the EIR/EIS will include a programmatic analysis of groundwater banking/exchange alternatives to generally identify potential benefits and impacts of such programs.

Chapter 8

Third-Stage Evaluation Results

This chapter will be published with the Final Environmental Impact Statement/ Environmental Impact Report.

Chapter 9

Mitigation for Least Environmentally Damaging Practicable Alternative

This chapter will be published with the Final Environmental Impact Statement/ Environmental Impact Report.

Chapter 10
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Attachment 1

Current East Bay Municipal Utility District and Sacramento County Water Agency Water Quality Information

June 2002

Water quality information has been provided to East Bay Municipal Utility District customers for 16 years. This edition of *Water Quality & Supply* reports data about EBMUD water quality for the year 2001.

Water Quality & Supply

Annual Water Quality Report, Year 2001

A message from the USEPA and DOHS*: In order to ensure that tap water is safe to drink, the U. S. Environmental Protection Agency (USEPA) and the California Department of Health Services (DOHS) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The DOHS regulations establish limits for contaminants in bottled water that provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. Environmental Protection Agency's Safe Drinking Water Hotline (800) 426-4791.

It includes information about where your water comes from, what is in it and how it compares with the regulatory standards set by the California Department of Health Services. EBMUD treats its water according to DOHS regulations.

Water Quality & Supply also provides updates on security, the Seismic Improvement Program, our efforts to secure a dry-year water supply, water conservation and water recycling.

Public Participation

For more information or specific questions about water quality, call (510) 287-1122 to talk with an EBMUD water system inspector. Regular meetings of the District Board of Directors are the second and fourth Tuesdays of each month at 1:15 p.m., 2nd floor, 375 Eleventh Street, Oakland. Board meetings are open to the public, which is welcome to attend and participate in decisions affecting drinking-water quality and other matters.

**** Information in italics is wording provided at the direction of DOHS or USEPA.***

Contents

Water Quality Data for Year 2001

The Water System

The East Bay Municipal Utility District water system serves more than 1.3 million people in a 325-square-mile service area on the east side of San Francisco Bay. Since its founding 79 years ago, EBMUD has provided its customers with the highest quality water possible.

Where Your Water Comes From

The most important factor in water quality is its source: the purer the source, the better the water. Most of EBMUD's water comes from the 577-square-mile protected watershed of the Mokelumne River, which collects Sierra Nevada snowmelt that flows into Pardee Reservoir in the Sierra foothills near the town of Valley Springs. The watershed on the west slope of the Sierra Nevada is mostly undeveloped land, little affected by human activity.

The water travels 90 miles to the East Bay in three steel pipelines—the Mokelumne Aqueducts—and is protected from pesticides, agricultural and urban runoff, municipal sewage discharges and industrial toxins. Local watershed runoff accounts for about 10 percent of the District's water supply.

The Mokelumne River water goes to three East Bay water treatment plants: Lafayette, Orinda and Walnut Creek. Water from the East Bay reservoirs goes to the San Pablo, Sobrante and Upper San Leandro (USL) treatment plants.

CONTAMINANT	MCL	PHG (MCLG)	AVERAGE	LAFAYETTE	ORINDA	SOBRANTE	SAN PABLO	USL
Total Coliforms, percent positive detected/month	5%	0	<0.3%	NR	NR	NR	NR	NR
Turbidity (NTU), maximum levels, except for average	TT = 5 NTU	NS	0.05	0.06	0.06	0.24	0.07	0.13
	TT=0.5 NTU 95% of the time	NS	NR	100%	100%	100%	100%	100%
Inorganic Contaminants								
Aluminum (mg/l)	1	0.6	<0.05	<0.05-0.08	<0.05	<0.05-0.07	<0.05	<0.05-0.10
Arsenic (ug/l)	50	NS	<2	<2	<2	<2	<2	<2-3.4
Fluoride (mg/l) *	2	1	<0.1	<0.1	<0.1-0.15	0.1	0.1	0.13
*Fluoride reported above reflect levels in the source waters. Fluoride was added in the range of 0.9 to 1.0 mg/l, to help prevent dental caries in consumers.								
Radioactive Contaminants: Sampled last in 1999. Required every four years.								
Alpha activity (pCi/l)	15	NS	<1	<1 - 2	<1 - 2	<1 - 1	<1 - 1	<1 - 2
Beta activity (pCi/l)	50	NS	<4	6	<4 - 6	<4	<4	<4
Organic Contaminants								
Trihalomethanes - (ug/l)	100	NS	53**	34-62	31-54	21-59	O/S	20-40
Acrylamide in treatment chemical (one hundredth of one percent)	TT = 5 Max. Dose allowed	0	<5	0	<5	<5	<5	<5
**This represents the highest quarterly running annual average in 2001. The annual average for calendar 2001 was 41 ug/l.								
Contaminants which have Secondary MCLs								
Aluminum (ug/l)	200	NS	<50	<50-80	<50	<50-70	<50	<50-100
Chloride (mg/l)	500	NS	9.3	4.5	5	14	13	15
Odor--Threshold (TON)	3	NS	1.2	0	1.4	1.1	2.8	1.8
Specific Conductance (umho/cm)	1600	NS	205	65	73	262	254	467
Sulfate (mg/l)	500	NS	17	1.3	1.3	28	36	37
Total Dissolved Solids (mg/l)	1000	NS	102	44	37	160	170	100
Turbidity (NTU), maximum levels, except for average	5	NS	0.05	0.06	0.06	0.24	0.07	0.13
Zinc (mg/l)	5000	NS	<50	<50	<50	<50-99	<50	<50
Unregulated Contaminants	**AL**	**PHG (MCLG)**	**Average**	**Lafayette**	**Orinda**	**Sobrante**	**San Pablo**	**USL**
Boron (ug/l)	1000	NS	<100	<100	<100	<100	<100	<100-110

LEAD AND COPPER: Last sampled in 1999. Required every three years.

	AL	PHG	90th percentile Level Found	# of Sites found above the AL
Copper (ug/l)	1300	170	74	No sites out of 51 sites
Lead (ug/l)	15	2	<5	One site out of 51 sites

TERMS USED

AL = regulatory action level. The concentration which, if exceeded, triggers treatment or other requirements that a water system must follow. An advisory AL for Boron has recommended, but not required measures.

NTU = nephelometric turbidity units

PHG = public health goal. The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

pCi/l = pico Curies per liter, a measure of radioactivity

MCL = maximum contaminant level. The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Primary Drinking Water Standard or PDWS. MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

NR = not required for meeting regulations

WALNUT CREEK	TYPICAL SOURCES
NR	Naturally present in the environment
0.09	Soil runoff
100%	Soil runoff
<0.05	Erosion of natural deposits; residue from some surface water treatment processes
<2	Erosion of natural deposits; runoff from orchards, glass and electronic industry production wastes
<0.1	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
<1 - 2	Erosion of natural deposits
6	Decay of natural and man-made deposits
34-55	By-product of drinking water chlorination
0	Added to water during water treatment
<50	Erosion of natural deposits; residue from some surface water treatment processes
4.4	Runoff/leaching from natural deposits; seawater influence
0	Naturally occurring organic materials
65	Substances that form ions when in water; seawater influence
1.2	Runoff/leaching from natural deposits; industrial wastes
44	Runoff/leaching from natural deposits
0.09	Soil runoff
<50	Runoff/leaching from natural deposits; industrial wastes

Walnut Creek	TYPICAL SOURCES
<100	Runoff/leaching from natural deposits
	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
	Internal corrosion of household plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

INFORMATION COLLECTION RULE

The USEPA developed the Information Collection Rule (ICR) to identify and measure types and levels of disinfection by-products and selected microbial organisms. This information is being used by the USEPA to support development of new drinking-water standards. The table includes data collected in 1998. Personal judgments about individual health risk should not be based on these data, since they are not used to determine compliance with drinking-water regulations. Aldehydes and bromate are by-products of ozonation. EBMUD uses ozone at Sobrante and USL water treatment plants. All samples for the ICR are collected from the treatment plant effluent or the distribution system.

INFORMATION COLLECTION RULE & DISINFECTION BY-PRODUCTS

Parameters	Average	Lafayette	Orinda	Sobrante	USL	Walnut Creek
Aldehydes (ug/l)	4.8	NR	NR	3.0-3.3	4.4-8.4	NR
Bromate (ug/l)	2.5	NR	NR	1.3-2.3	1.5-3.8	NR
Chloral hydrate (ug/l)	2.7	0.69-3.9	<0.5-6.7	<0.5-6.5	<0.5-7.0	<0.5-4.3
Chlorate (ug/l)	335	150-220	71-190	200-990	160-1400	100-270
Total Chlorine Residual (mg/l)	1.5	0.8-2.0	0.1-2.2	0.1-2.2	0.2-1.9	0.8-2.1
Chloropicrin (ug/l)	0.8	<0.5-0.84	<0.5-0.87	<0.5-3.3	<0.5-3.3	<0.5-0.74
Cyanogen Chloride (ug/l)	0.7	1.1-1.4	<0.5-1.1	<0.5-2.6	<0.5-1.1	1.1-1.4
Haloacetic acids, 5 species (ug/l)	24.4	17.5-23.0	17.3-29.0	1.4-26.9	17.5-54.3	17 -27
Haloacetonitriles (ug/l)	1.0	<0.5-2.1	<0.5-1.8	<0.5-2.7	<0.5-6.1	<0.5-2.3
Haloketones (ug/l)	0.7	<0.5-1.2	<0.5-0.8	<0.5-2.2	<0.5-4.1	<0.5-1.3
Total Trihalomethanes (ug/l)	67.7	42-68.8	32.3-74.2	41.6-96.3	95-177	35.3-68.6
Total Organic Halides (ug/l)	168	93-150	84-200	80-220	190-420	85-170

The following table includes measurements of other water quality constituents that might be of interest to our consumers.

OTHER WATER QUALITY PARAMETERS

	Lafayette	Orinda	San Pablo	Sobrante	USL	Walnut Creek
Alkalinity, Bicarbonate (mg/l as CaCO3)	20	21	74	70	104	20
Alkalinity, carbonate (mg/l as CaCO3)	0.4	1.5	1.8	3.9	4.4	0.2
Calcium (mg/l)	4.4-6.1	4.5-8.0	18.4-20.4	18.4-23.9	22.3-29.6	4.7-5.9
Hardness (mg/l as CaCO3)	15-21	18-30	70-78	70-90	110-130	15-22
Magnesium (mg/l)	0.8-1.3	0.9-1.6	6.1-7.0	6.0-14.6	10.3-13.1	0.8-1.2
pH (pH units)	8.7-9.0	9.1-9.5	8.6-8.9	8.5-8.9	8.6-9.0	8.8-9.1
Potassium (mg/l)	0.5-0.6	0.5-0.6	1.0-1.1	0.9-3.5	1.1-1.5	0.5-0.6
Silica (mg/l)	8.8-8.9	8.8-8.9	13.0	13.0	2.8-9.7	8.8-8.9
Sodium (mg/l)	4.5-6.0	5.3-7.8	21.8-24.6	20.0-84.9	18.9-28.6	4.3-5.5

Customers with industrial dishwashing and cooling equipment often need to know the hardness of the water in "grains per gallons." To convert the hardness values into "grains per gallons," divide the values shown in the tables in milligrams per liter by 17. For example, water hardness in areas served by the Orinda Water Treatment Plant had a range from 15 to 42 mg/l, which is equivalent to 0.9 to 2.5 grains per gallon.

Secondary Drinking Water Standard Secondary MCLs are set to protect against contaminants that affect the aesthetic qualities of water, such as tastes, odors and appearance.

TON = threshold odor number, a measurement of odors in water

MCLG = maximum contaminant level goal. The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.

NS = no standard (MCL or PHG for example) established

TT = treatment technique. A required process intended to reduce the level of a contaminant in drinking water.

mg/l = milligrams per liter, or parts per million (ppm)

ug/l = micrograms per liter, or parts per billion (ppb)

umhos/cm = micromhos per centimeter, a measure of conductance

90th percentile = 90 % of samples had lower values than indicated

Where Your Water Comes From

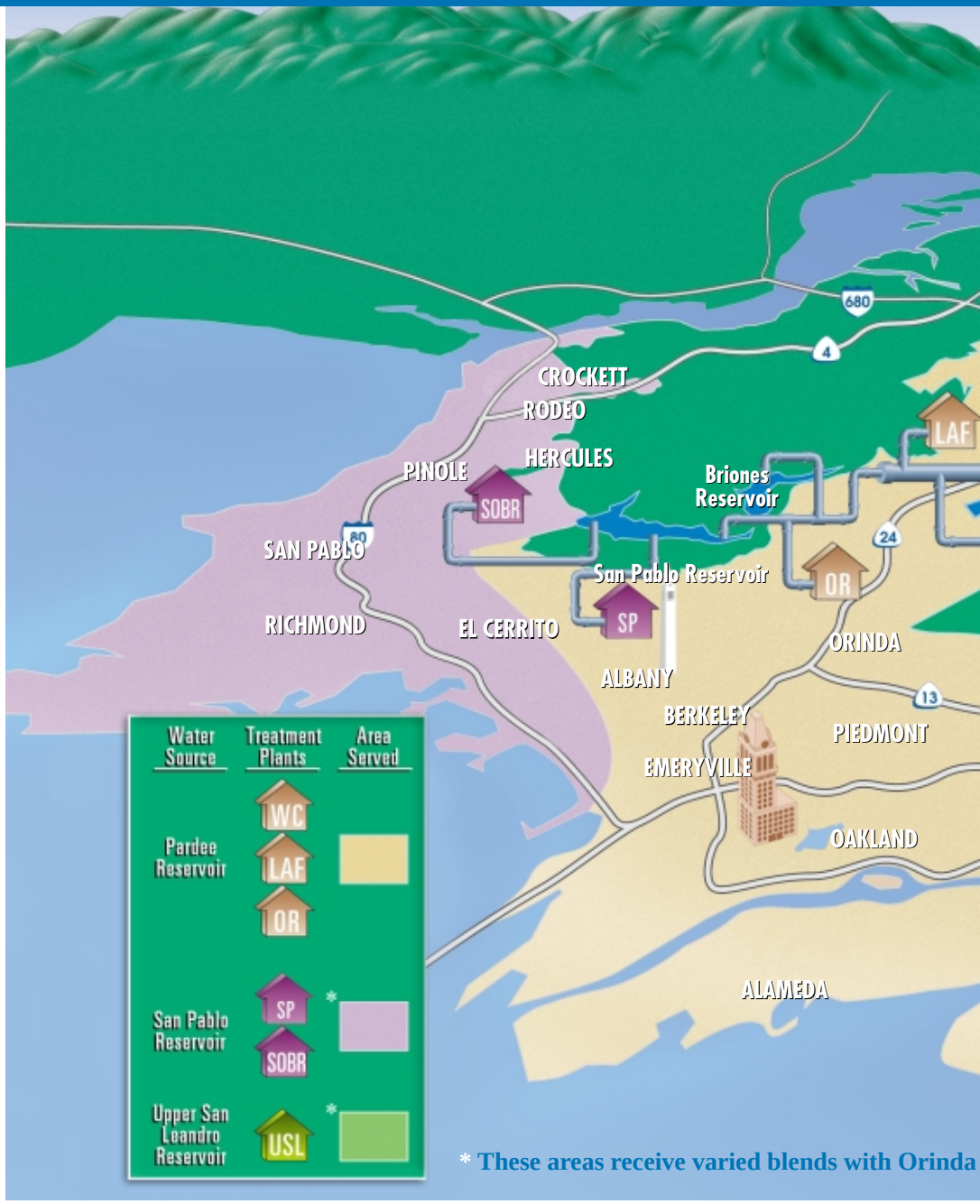
Treating Your Water Water treated at each plant is disinfected with chlorine and chloramine to reduce waterborne bacteria, viruses or other pathogens. The water is coagulated with chemicals to reduce particles when filtered. Every drop of EBMUD water is filtered before it goes to consumers.

Sobrante, San Pablo and the Upper San Leandro water treatment plants settle the water for removal of particles. Sobrante and USL also use ozone to remove unwanted taste and odors.

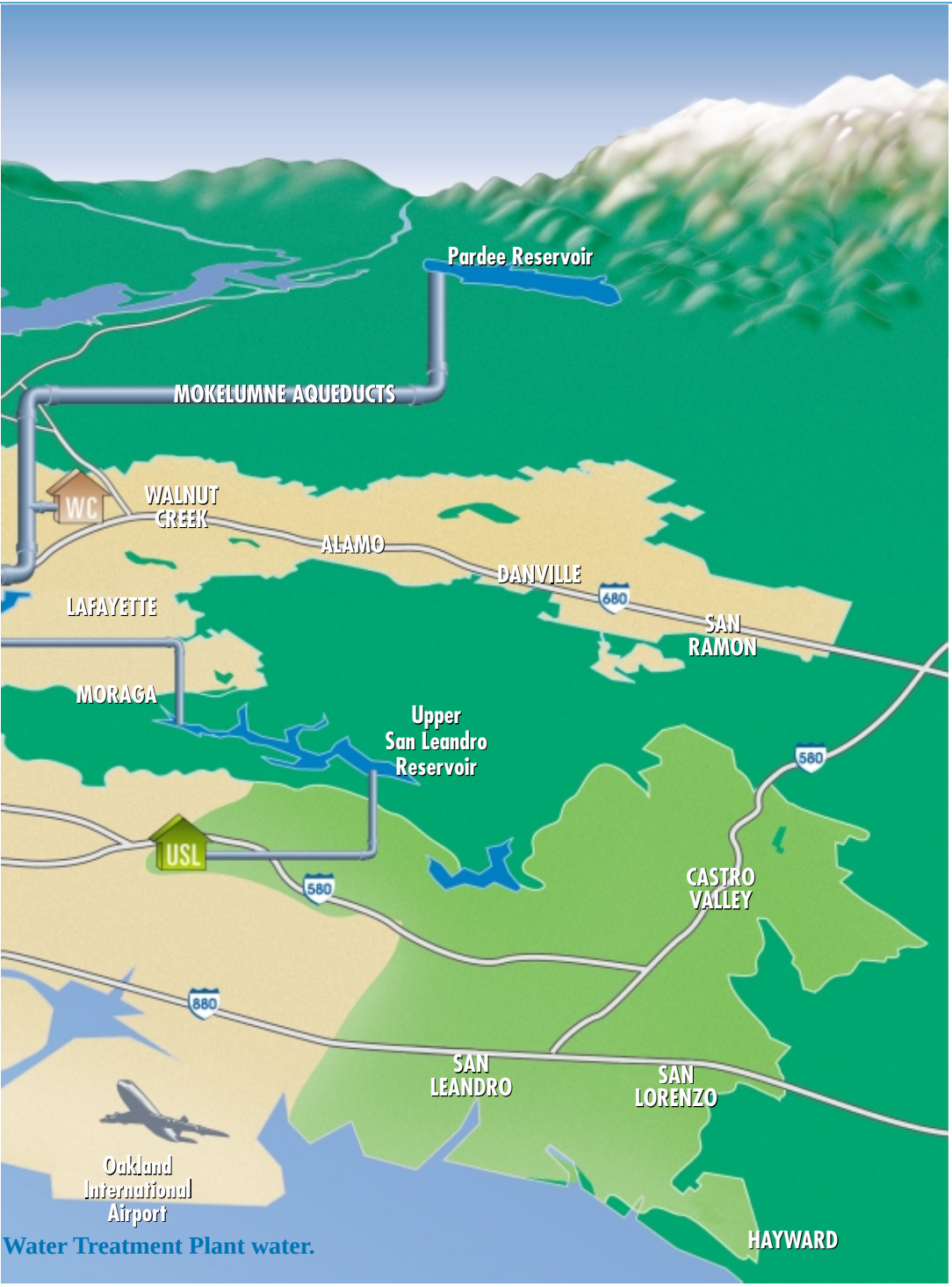
Contaminants in Drinking Water A message from the USEPA about contaminants that may be in drinking water: *The sources of drinking water—both tap water and bottled water—include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.*

Contaminants that may be present in source water include:

- *Microbial contaminants, such as viruses, bacteria and protozoa, such as* Cryptosporidium, *that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.*
- *Inorganic contaminants, such as salts and metals that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.*
- *Pesticides and herbicides that may come from a variety of sources such as agriculture, urban storm water and residential uses.*
- *Radioactive contaminants that can be naturally occurring or be the result of oil and gas production, and mining activities.*
- *Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.*



Cryptosporidium *is a microbial contaminant found in surface water throughout the U. S. Although filtration is highly effective in removing* Cryptosporidium, *the most commonly used filtration methods cannot guarantee 100 percent removal. Current test methods cannot determine if the organisms are dead or are capable of causing disease. Ingestion of* Cryptosporidium *may cause abdominal infection with symptoms including nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their physician regarding appropriate precautions to avoid infection.*



Water Treatment Plant water.

Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium *and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791) or www.epa.gov/safewater.*

Protecting Water Quality

After treatment, EBMUD water is piped to neighborhood reservoirs where it is stored for consumer use. Before the water comes to your tap, many steps are taken to ensure its quality and safety. These include carefully managing and protecting watershed lands, routinely sampling and monitoring the water, analyzing results of the sampling and adjusting treatment, flushing pipes through hydrants and repairing pipes. Water samples are tested at the treatment plants and in the distribution system and analyzed daily in the District's environmental laboratory.
the laboratory handled more than 32,000 samples that produced over 295,000 analytical results. Only12 regulated contaminants for which monitoring is required were detected in EBMUD water.

Monitoring and Sampling

Because of the high quality of EBMUD's source water, the DOHS allows EBMUD to monitor less than once a year for selected contaminants, including synthetic organic chemicals, asbestos and radioactivity.
Turbidity—Water samples for turbidity and aluminum are taken at the treatment plants. Fluoride and radioactivity samples are taken from source waters.

Cryptosporidium *must be ingested to cause disease, and it may be spread through means other than drinking water.*

Low Resistance—A message from the USEPA about drinking water and low resistance to infection: *Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease*

Asbestos—Sampling for asbestos was last done in 1996 and asbestos was not detected.
Lead and Copper—EBMUD has detected little or no lead or copper in its water treatment and distribution systems. However, lead has been detected (at levels within state regulations) at customers' drinking-water taps. Home plumbing fixtures, especially older ones that contain lead, may add lead above the level in the water delivered by EBMUD. Choose plumbing fixtures that use approved materials for potable water consumption and install them according to local building codes. Hot water systems can contain elevated levels of lead and copper. Consuming from hot water taps is inadvisable.

Trihalomethanes (THMs)— THMs are by-products of chlorination, formed when chlorine reacts with natural organics in water. Samples for THMs are taken at the water treatment plants and in the distribution system.

Synthetic Organic Chemicals—These are pesticides and herbicides, which are monitored to determine sources of industrial and agricultural contamination. No regulated synthetic organic chemicals (SOCs) were detected in EBMUD water. Because there is little or no activity using SOCs on the District's watersheds, DOHS has waived the SOC monitoring requirement until 2003.

Volatile Organic Chemicals—These are by-products of industrial processes and petroleum production. Volatile organic chemicals (VOCs) can come from gas stations, urban storm water runoff, air pollution and septic systems. No regulated VOC contaminants were detected in source water intakes or water treatment plants. Only four unregulated VOCs were detected in EBMUD drinking water. These four contaminants are components of THMs and are by-products of disinfecting water.
Unregulated Contaminants—These are chemicals that the USEPA and DOHS require EBMUD to monitor, but no maximum contaminant levels have been established. Monitoring like this helps regulatory agencies determine where certain contaminants occur and whether they need to be regulated. Samples for unregulated contaminants are collected in the water distribution system.

Water Quality Improvements Are Ongoing

Partnership for Safe Water

In 1996, EBMUD joined with the American Water Works Association, the USEPA and other water utilities nationwide in the Partnership for Safe Water. Through the partnership, EBMUD works to improve the quality of drinking water by voluntarily assessing our treatment plants for particle removal to reduce the possibility of the pathogen *Cryptosporidium* occurring in our supply. Since 1996, we have made improvements in all six water treatment plants.

In 2001, EBMUD received the Partnership for Safe Water Director's Award for improving treatment processes at the Walnut Creek, Lafayette, Sobrante, and Upper San Leandro water treatment plants. EBMUD received a similar award for the Orinda WTP in 2000.

New Drinking-Water Regulations

In 2002 the USEPA introduced a number of new regulations for water utilities. Two of these regulations require monitoring for by-products from disinfecting drinking water and treating water to remove *Cyrptosporidium*.

The Interim Enhanced Surface Water Treatment Rule addresses *Cryptosporidium* and focuses on more stringent particle removal at water treatment plants, which EBMUD has done since 1996 through participation in the Partnership for Safe Water. EBMUD is well-positioned to meet this regulation.

The Disinfectant/Disinfection By-Product Rule requires water agencies to comply with maximum contaminant levels (MCL) for new contaminants such as haloacetic acids and bromate, and reduce levels of THMs. Levels of these by-products in EBMUD water are typically well below—and have never exceeded—state or USEPA prescribed MCLs. EBMUD uses chloramine to disinfect water in the distribution system and averages less than half of the allowable maximum residual disinfectant level of chloramine prescribed by the new rule.

The recently renovated Orinda Water Treatment Plant treats drinking water for more than half of EBMUD customers.

Ongoing Improvements

NDMA (N-nitrosodimethylamine) is an emerging, unregulated contaminant. The USEPA classifies NDMA as a probable human carcinogen based on laboratory experiments with rats and mice, but has not set a drinking-water standard for it. NDMA is also present in some food and beverage products.

Evidence suggests that NDMA is formed during drinking-water disinfection. The 2001 non-regulatory action level established by DOHS for NDMA is 20 parts per trillion (ppt); one of 23 EBMUD samples taken in 2001 had an NDMA level above 20 ppt.

In 2001, EBMUD undertook an extensive research program and cooperative effort with DOHS to determine NDMA sources and proactively reduce NDMA levels well before regulations are established.

Chloramine Helps Reduce THMs
EBMUD began treating water with chloramine in 1998. THMs in the distribution system dropped significantly, from an average of 76 parts per billion (ppb) to 41 ppb in 2001. The current MCL for THMs is 80 ppb.

Assuring a High-Quality Future Water Supply EBMUD initiated work on its strategic plan for water treatment and transmission facilities during the past year. This master plan will establish the blueprint for continued water system facility improvements so EBMUD can continue to deliver safe, high-quality drinking water over the next 30 to 50 years. The plan will be completed in 2002, followed by environmental studies and project implementation. The plan's objectives are to:

- Meet anticipated water supply needs for our service area
- Stay ahead of future drinking-water regulations
- Anticipate and exceed customer expectations for quality and service reliability
- Achieve these goals as cost-effectively as possible

Seismic Retrofits On Schedule

Now in its seventh year, EBMUD's 10-year, $189-million Seismic Improvement Program is on schedule and will safeguard our ability to serve water after major earthquakes. Most of the program's key components have been completed, including upgrades to 38 reservoirs, 22 pumping plants and five water treatment plants.

Work on one major project—the Southern Loop Pipeline—will be completed this summer. The Southern Loop is an emergency pipeline that will provide an alternate water supply route to either side of the East Bay hills at the southern end of the EBMUD water distribution system.

Preliminary work has begun on another major project, the Claremont Tunnel retrofit. Built between 1926 and 1929, the tunnel brings up to 175 million gallons of water per day to customers west of the Oakland-Berkeley hills.

Sacramento River To Be Tapped For Drought Supply

In February 2002, the Sacramento County Water Agency and EBMUD signed a joint powers agreement to develop a project taking water from the Sacramento River at Freeport to serve both areas' needs. The newly created Freeport Regional Water Authority, with two members each from the Sacramento County Water Agency Board and the EBMUD Board, is the governing agency for the Freeport Regional Water Project.

The project will provide a supplemental high-quality water supply—up to 100 million gallons of water a day (MGD) in dry years—to protect EBMUD's 1.3 million customers from the potential devastation of a severe drought. The project will provide up to 85 MGD to Sacramento County to protect its overdrafted groundwater basin. If all goes as planned, Freeport water will reach East Bay customers by 2006 and Sacramento customers by 2010.

Summer Water and Energy Savings Needed

Conserving water is always important, even in wet years. Wise water use can save energy, too. Follow these easy tips to save water, energy and money:

- Take short showers instead of baths
- Wash clothes in cold water
- Use clothes washers and dishwashers only when full
- Repair leaks and drips inside your home and in your sprinkler system
- Use water-saving irrigation systems and time automatic sprinklers to water at night

Call the EBMUD Water Conservation Office at (510) 287-0590 for details about high-efficiency clothes washer rebates and community events where you can learn more about water conservation practices and programs.

Water-wise gardening can produce a beautiful garden and help conserve water for dry years.

Recycled Water Stretches Our Supply

EBMUD supplies more than 8 million gallons a day (MGD) of recycled water and other nonpotable water for irrigation (golf courses, cemeteries and landscaping), industrial processes, and equipment wash-down. By using recycled and nonpotable water for these purposes, the drinking-water supply goes further in droughts. By 2020, EBMUD plans to recycle an additional 8 MGD, for a total of 5.8 billion gallons a year.

With the support of a State Water Resources Control Board grant, the East Bayshore Recycled Water Project will serve parts of Alameda, Albany, Berkeley, Emeryville and Oakland with up to 2.5 MGD of recycled water. As part of the project, a new high-rise in downtown Oakland was built with dual plumbing to use recycled water for toilet flushing. EBMUD helped fund the project, which will save 20,000 gallons of water a day.

The Dublin San Ramon Services District - East Bay Municipal Utility District Recycled Water Authority—known as DERWA—is working on the San Ramon Valley Recycled Water Project. A State Water Resources Control Board grant will support Phase 1 construction; the project will save about 2.4 MGD of drinking water for EBMUD customers when all phases are completed. The recycled water will be used for landscape irrigation in EBMUD's service area.

Safeguarding Your Water

Ensuring the safety of public water supplies is EBMUD's top priority. We have increased security of our water and wastewater systems, following recommendations of the Federal Bureau of Investigation, the American Water Works Association and the California Office of Emergency Services.

These agencies advise water and wastewater systems to guard against intrusion, review emergency response plans and increase vigilance. EBMUD has taken all these steps and more.

Terrorism experts say water and wastewater systems have a low relative likelihood of experiencing terrorist acts, but no one is taking chances. Our security efforts include multiple methods of controlling access to our facilities.

EBMUD uses a multibarrier approach of physical, chemical and operational controls to safeguard the water we provide to consumers. We are working with federal, state and local law enforcement and utility organizations to assess potential threats and minimize risks.

In the event of any unusual circumstance, EBMUD would immediately cut off the water source, determine the source of the problem and issue appropriate public notices. We will continue to add security measures as warranted to protect local water supplies.

If you have questions about water quality, call EBMUD's System Water Quality Section at (510) 287-1122.
For other information about EBMUD, call the Public Affairs Office at (510) 287-0138.

The water quality information in this report is available in Spanish, Tagalog, Cambodian, Vietnamese and Chinese. Call the EBMUD Public Affairs Office, (510) 287-0138, to request the information in one of these languages.

La información acerca de la calidad del agua potable que este informe contiene se puede solicitar y obtener en español llamando al Tel. (510) 287-0138.

Ang kaalaman tungkol sa kaurian ng inuming tubig na nasa ulat na ito, sa wikang Tagalog, ay maaring makuha kung kayo ay tatawag sa telepono bilang (510) 287-0138.

Thông tin về chất lượng nước trong bản báo cáo này có sẵn bằng tiếng Việt. Hãy gọi Văn Phòng Giao Tế Công Cộng EBMUD tại số (510)287-0138 để xin một bản sao.

該報告的水質資訊部份現有中文版本提供。如有需要，請聯絡 EBMUD 公眾事務辦公室，電話：(510) 287-0138

ពត៌មានស្តីអំពីគុណភាពនៃទឹកនៅក្នុងសេចក្តីរាយការណ៍នេះ មានជូនជាភាសាខ្មែរ។ សូមទូរស័ព្ទទៅការិយាល័យកិច្ចការសាធារណៈជនៃ EBMUD, (៥១០) ២៨៧-០១៣៨, ដើម្បីសុំនូវសេចក្តីនេះជាលាយលក្ខណ៍។

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About This Report This Special Report meets federal and state requirements for annual customer notification regarding water quality. It was produced and mailed to residences and businesses in EBMUD's service area at a cost of $0.23 per copy. Direct mailing of this report allows EBMUD to provide virtually all of its consumers with information they should have about drinking-water quality, supply and system reliability in a cost-efficient manner.

What You Should Know About...

The California Department of Health Services requires the following language about radon, lead, arsenic and nitrate be used by water agencies that have traceable amounts of these substances in their water systems.

These do not apply to most of SCWA's water system; where found, the amounts do not exceed acceptable federal and state standards. Additional information is provided about fluoride and hardness to help answer customers' frequently asked questions. It is important to realize that the majority of water quality issues apply to both tap and bottled water.

Radon

Radon is a radioactive gas that you cannot see, taste or smell. It is found throughout the United States. Radon can move through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call the state Radon Program at 1-800-745-7236 or U.S. EPA's Radon Hotline at 1-800-SOS-RADON.

Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water.

Arsenic

While your drinking water meets the current standard for arsenic, it may contain low levels of arsenic. The standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The California Department of Health Services continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

The Public Health Service set the Maximum Contaminant Level (MCL) for arsenic in drinking water at 50 parts per billion (ppb) in 1943. Recent studies conducted by the American Water Works Association, U.S. EPA and National Academy of Sciences have found that levels of arsenic in drinking water above 50 ppb may cause adverse health effects.

On February 22, 2002, the U.S. EPA published the Arsenic in Drinking Water Rule, which requires all water agencies to comply with a new MCL of 10 ppb by January 23, 2006.

Most of the wells in the SCWA systems have non-detectable levels of arsenic. Wells that had arsenic levels above the current standard of 50 ppb have been removed from service. SCWA is conducting a study to determine what type of treatment would be most economical to remove arsenic from wells that do not meet the new limit. The study is expected to be complete by the end of 2002. All wells requiring treatment will be upgraded before the 2006 deadline or will not be put back into service.

Nitrate

Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.

Additional information on these and other contaminants is available from the U.S. EPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at www.epa.gov/safewater.

Fluoride

SCWA does not fluoridate its well water. However, a portion of our well water is mixed with fluoridated surface water from the city of Sacramento. During winter months, this is the primary source of water in the Laguna area. Levels of fluoride in the Laguna system vary depending on the amounts of well water that is mixed with the surface water and are significantly lower in summer months.

All customers east of Highway 99 and all other areas served by SCWA (Northgate, Arden Park Vista, Sunrise, Mather, Southwest Tract, Vineyard, Country Creek Estates, Laguna, Hood and Grantline) do not have fluoride treatment. However, low levels of naturally-occurring fluoride are present. Fluoride is an essential element for normal human growth and development, especially in the formation of bones and teeth.

Fluoride in drinking water at levels of approximately 1 ppm may reduce the occurrence of dental cavities. However, levels of fluoride greater than 2 ppm may cause dental fluorosis —a brown staining or pitting of the permanent teeth.

Hardness

The majority of SCWA's water comes from underground sources with a high naturally-occurring mineral content, including iron and magnese. As a result, is harder than surface water from rivers, streams or reservoirs.

Most groundwater is moderately hard, varying in hardness from 40 to 310 mg/l. Hard water is not a health hazard, but it does require more soap than soft water and will, over time, leave mineral deposits on pipes and valves.

You can reduce water hardness with packaged water softeners or with a mechanical ion exchange softening unit. If you are considering purchasing a water softener, moderate water hardness is equivalent to 2 to 18 grains (10 grains is equal to 171 mg/l).

Important Drinking Water Information

The United States Environmental Protection Agency (U.S. EPA) requires the following language in all Water Quality Reports for all drinking water systems throughout the country.

- Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.
- The sources of drinking water, both tap and bottled, include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. It can also pick up substances resulting from the presence of animals or from human activity.
- In order to ensure that tap water is safe to drink, the U.S. EPA and DHS prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. DHS regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife;

Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming;

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses;

Organic chemical contaminants, including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum productions, can also come from gas stations, urban storm water runoff and septic systems; and

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling U.S. EPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at www.epa.gov/safewater.

Information for Sensitive Populations

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS of other immune system disorders, some elderly and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers.

USEPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from USEPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at www.epa.gov/safewater.

The Sacramento County Board of Supervisors is the governing board of the Sacramento County Water Agency.

Agendas for the Board of Supervisors meetings are provided online at **www.co.sacramento.ca.us** or can be obtained at 700 H Street, Room 1450, Sacramento, CA.

Get Involved!

The Board of Supervisors convenes each Tuesday and Wednesday at:
County Administration Center
700 H Street, Room 1450
Sacramento, CA

Currently, night meetings are scheduled on the third Wednesday of each month beginning at 6:00 p.m. All other Tuesday and Wednesday meetings begin at 9:30 a.m. The public is invited to attend.

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For More Information

If you have questions about this report, would like to request additional copies or would like a complete list of tested constituents, please contact us at:

Sacramento County
Water Agency
(916) 875-RAIN

Chuck Williams
Associate Civil Engineer
williamsch@SacCounty.Net

Sarah Grant
Principal Engineer Technician
grantsa@SacCounty.Net

Or visit our Web site at
www.saccodwr.org

This report contains important information about your drinking water. Please translate it, or speak with someone who understands it.

Este informe contiene informacion muy importante sobre su agua potable. Traduzcalo o hable con alguien que lo entienda bien.

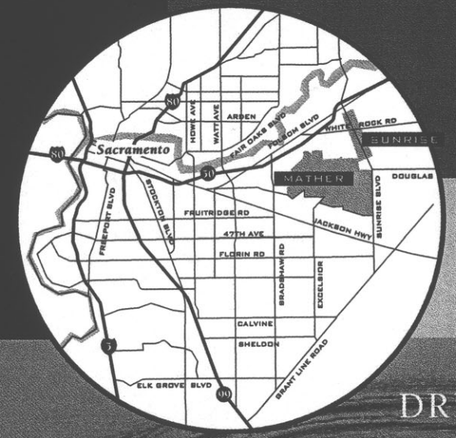
Information included in this report is required by law to be provided to every water user. Property owners —please share this information with your tenants!

Printed on recycled paper. Every ton of recycled paper saves 7,000 gallons of water.

Sacramento County Water Agency

Consumer Confidence Report

2001 Water Quality Report



This report has been developed for the Mather/Sunrise service area.

Drinking Water
Standards
Contents
Limits
Safety

Dear SCWA Customer,

The Sacramento County Water Agency is dedicated and committed to supplying you with safe and reliable drinking water. Before water reaches your home or business, it is tested and treated to ensure it is of the highest quality.

This Consumer Confidence Report is provided to enhance your understanding of where your water comes from and what it contains. The California Department of Health Services requires us to include information on constituents that may not be in your water at all, or if they are, they are just traceable and well within established health standards. Most importantly this report confirms that your drinking water continues to meet or exceed all state and federal drinking water standards.

If you have any questions about this report, please call (916) 875-4915 or visit us online at www.saccodwr.org. We look forward to continuing to serve you. Have a great summer!

Keith DeVore

Keith DeVore
Director,
Sacramento County Department of Water Resources

The Consumer Confidence Report (CCR)

is a summary of the results of tests conducted to detect contaminants in drinking water. This report is provided to educate you, our customer, about the quality of your water. The California Department of Health Services (DHS) and United States Environmental Protection Agency (U.S. EPA) require all water agencies to provide this information each year.

The CCR includes a comparison of Sacramento County Water Agency's (SCWA) water to the standards set by the DHS and U.S. EPA.

About Your Water Supply

SCWA provides water to approximately 29,500 households in 11 services areas (Northgate, Arden Park Vista, Sunrise, Mather, Southwest Tract, Vineyard, Country Creek Estates, Laguna, Hood and Grantline) throughout Sacramento County.

Most of our customers receive all of their drinking water from groundwater sources (wells), except for customers in the Laguna and Sunrise service areas who receive a portion of their drinking water from surface water (rivers, lakes and streams).

SCWA owns and operates 50 groundwater wells. Most of the wells range from 220 feet deep to 500 feet deep. Our shallowest well (140 feet deep) is located in the Hood service area and the deepest (1,087 feet deep) is located in the Vineyard service area.

Understanding the Water Quality Chart

1. Locate your service area by referring to the map on the cover.
2. Identify constituents in the left-hand column.
3. Compare the detection range to the state (MCL/PHG) and federal (MCLG) standards.
4. Confirm your drinking water meets all federal and state drinking water health standards.
5. Contact Chuck Williams at SCWA at (916) 875-4915 if you have any questions.

Source Water Assessment

The Drinking Water Source Assessment and Protection (DWSAP) program has been developed to assess the vulnerability of drinking water sources to potential contamination. It is meant to help protect the quality of existing and future groundwater supplies.

The assessment component consists of defining protection areas around water sources and conducting an inventory of possible contaminating activities. The protection component consists of managing activities around water sources to prevent contamination and planning for contingencies. The DWSAP program was developed by the California Department of Health Services and is required by state and federal law.

SCWA's DWSAP program is currently in progress. The program is expected to be completed in early 2003 and a comprehensive report will be made available to the public at that time. Watch for more information about the program in future issues of SCWA's newsletter, WaterSpouts.

Mather/Sunrise Service Area

Customers in the Sunrise service area receive approximately 50 percent of their water from a connection with the Arden Cordova Water District. SCWA purchases a mix of groundwater (wells) and surface water (rivers, lakes and streams) from Arden Cordova to meet this area's water demand. The other 50 percent of the Sunrise area's water is provided by groundwater sources located in Mather Park.

An Explanation of Testing and Reporting Data

SCWA regularly tests your water for over 100 contaminants at a state-certified laboratory. The schedule for these tests is set by the U.S. EPA and the DHS and may be done on a weekly, monthly or annual basis. Test results are compared against state and federal standards to confirm that your water meets all drinking water health standards.

Water Quality Definitions

The following definitions will help you understand the terminology used in the Water Quality Chart.

- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set by the DHS. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.
- **Primary Drinking Water Standards (PDWS):** MCLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.
- **Secondary Drinking Water Standards (SDWS):** MCLs for contaminants that affect taste, odor or appearance of the drinking water. Contaminants with SDWSs do not affect health at the MCL levels.
- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected health risk. The USEPA sets MCLGs.
- **Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. The EPA sets PHGs.
- **Average:** The annual average of all tests for a particular substance.
- **Range:** The range between the lowest and highest values of a specific substance measured throughout the course of the year.
- **Regulatory Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Detection Limit for Reporting:** The limit at or above which a contaminant is detected for which it is required to be reported.

We are required to report all contaminants at levels above the Detection Limit for Reporting threshold. In the water quality chart, we have included each contaminant that exceeds that threshold and a comparison to the Maximum Contaminant Level and Public Health Goal set by the California Environmental Protection Agency.

2001 Water Quality Chart

Mather/Sunrise 8 Wells — See Note 1

						SURFACE WATER		GROUND WATER	
						RANGE	WEIGHT	RANGE	WEIGHT
PRIMARY STANDARDS — Mandatory Health-Related Standards Established by California Department of Health Services									
	CONSTITUENT	UNITS	PHG or MCLG	MCL	MAJOR SOURCES IN DRINKING WATER	LO – HI	AVG.	LO – HI	AVG.
MICROBIOLOGICAL									
	Coliform Bacteria (positive tests)	MPN	0	1	Naturally present in the environment	0.04 – 0.22	NA	0	0
UNREGULATED CONTAMINANTS WITH ACTION LEVELS									
	Boron	PPB	n/a	AL = 1000	Naturally occurring in deposits below the earth's surface	–	–	ND – 130	51.29
	Chromium VI (Hexavalent Chromium)	PPB	n/a	n/a	Discharges from industries involved with chrome plating, dye and pigments, leather tanning and wood preserving	–	–	ND – 3.3	0.83
VOLATILE ORGANIC CHEMICALS									
	Tetrachloroethylene (PCE)	PPB	0.06	5	Discharge from factories, dry cleaners, and auto shops (metal degreaser)	ND – 1.4	0.1	ND	0
	Trichloroethylene (TCE)	PPB	0.8	5	Discharge from metal degreasing sites and other factories	ND – 1.7	0.2	ND	0
INORGANIC CHEMICALS									
	Aluminum	PPB	600	1000	Erosion of natural deposits	ND – 120	45.00	ND	0
2	Arsenic	PPB	n/a	50	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes	ND – 3.1	0.2	ND	0
	Barium	PPM	2	1	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits	ND – 0.15	0.03	ND	0
	Chromium	PPB	2.5	50	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits	ND – 3.7	0.8	0.01 – 10	5
3	Fluoride	PPM	1	2	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories	ND – 0.11	0.02	0.10 – 0.11	0.11
4	Lead	PPB	2	AL = 15	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits	ND – 13	5.5	ND	0
	Nickel	PPB	12	100	Erosion of natural deposits; discharge from metal factories	ND – 23	2	ND	0
	Nitrate (as NO3)	PPM	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits	ND – 20	6.3	7.6 – 8.3	8
	Nitrite (as N)	PPM	1	1	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits	ND – 0.2	0.02	–	–
RADIOACTIVITY									
	Gross Alpha Activity	pCi/l	n/a	15	Erosion of natural deposits	ND – 6	1.4	ND – <1.0	0
	Uranium	pCi/l	0.5	20	Erosion of natural deposits	ND – 7.85	0.97	ND – <2.0	0
SECONDARY STANDARDS — Aesthetic Standards Established by California Department of Health Services									
	CONSTITUENT	UNITS	PHG or MCLG	MCL	MAJOR SOURCES IN DRINKING WATER	LO – HI	AVG.	LO – HI	AVG.
	Color	Units	n/a	15	Naturally-occurring organic materials	ND – 5	0.4	0	0
	Turbidity	NTU	n/a	5	Soil runoff	0 – 2.7	0.20	<0.5	0
	Chloride	PPM	n/a	500	Runoff/leaching from natural deposits; seawater influence	2 – 21	8.0	2.4	2.4
4	Copper	PPM	0.17	AL = 1.3	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	ND – 0.46	0.21	ND	0
	Corrosivity (Langelier Index at 60°C)	LI	n/a	non-corrosive	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors	NA	NA	–0.91 – (–0.79)	–0.85
	Aluminum	PPM	n/a	0.2	Erosion of natural deposits	ND – 0.12	0.05	ND	0
	Iron	PPM	n/a	0.3	Leaching from natural deposits; industrial wastes	ND – 0.05	0	ND	0
	Manganese	PPB	n/a	50	Leaching from natural deposits	ND – 52	2	ND	0
	Sulfate	PPM	n/a	500	Runoff/leaching from natural deposits; industrial wastes	3 – 28	10	1 – 1.8	1.4
	Specific Conductance (E.C.)	umhos/cm	n/a	1600	Substances that form ions when in water; seawater influence	100 – 570	255	110 – 120	115
	Total Dissolved Solids	PPM	n/a	1000	Runoff/leaching from natural deposits	85 – 390	183	94 – 130	112
ADDITIONAL CONSTITUENTS ANALYZED									
	CONSTITUENT	UNITS	PHG or MCLG	MCL	MAJOR SOURCES IN DRINKING WATER	LO – HI	AVG.	LO – HI	AVG.
	pH	Units	n/a	MO	Due to chemicals naturally occurring in the soil below the earth's surface.	7.4 – 7.9	7.7	7.8 – 7.9	7.9
5	Hardness (as CaCO3)	PPM	n/a	MO		47 – 290	108	40 – 41	41
	Total Alkalinity (as CaCO3)	PPM	n/a	MO		NA	NA	40 – 46	43
	Bicarbonate (HCO3)	PPM	n/a	MO		NA	NA	40 – 56	48
	Sodium	PPM	n/a	MO		4 – 20	12	7.5 – 8.5	8
	Calcium	PPM	n/a	MO		11 – 65	28	10	10
	Potassium	PPM	n/a	MO		1.8 – 5.6	3.2	1.3	1.3
	Magnesium	PPM	n/a	MO		4 – 30	11	3.7 – 4	3.9
6	Total Trihalomethanes (Total THM's)	PPB	n/a	100	Byproduct of drinking water chlorination. Some people who use water containing trihalomethanes in excess of the MCL over many years experience liver, kidney or central nervous system problems, and may have increased risks of getting cancer.	ND – 10	2	–	0

Legend

MPN	Most Probable Number
NTU	Nephelometric Turbidity Units
PPM	Parts per million (mg/l)
PPB	Parts per billion (ug/l)
pCi/l	pico Curies per liter
MFL	Million Fibers Per Liter
MO	Monitored Only
ND	Non Detectable
NA	Not Analyzed
NR	Not Required
AL	Regulatory Action Level
LI	Langelier Index
n/a	not applicable

1 The Sunrise service area has been receiving water from Mather Field as well as from Arden-Cordova Water District since April 1998.

2 MCL to be revised to 10 PPB in 2006.

3 Standard depends on temperature.

4 Lead and Copper concentrations are obtained from the 90th percentile of tapwater samples. The MCL is considered an "Action Level."

A Regulatory Action Level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

5 Hardness units are PPM. Most commercial companies use "grain" units.

Conversion: 171 PPM = 10 grains

6 Total Trihalomethanes = sum of results for Chloroform, Bromoform, Dibromochloromethane, & Bromodichloromethane

Water Quality Data is based on data years 2000 through 2001. For more detailed water quality information, call (916) 875-4915.

Attachment 2

Major Issue Response regarding San Joaquin County Conjunctive Storage from the 2000 EIR/EIS for the East Bay Municipal Utility District Supplemental Supply Project

3) San Joaquin County Conjunctive Storage

Comment:

Several comments assert that the EIR/EIS should consider a joint conjunctive-use groundwater storage project in San Joaquin County. Some assert that the EIR/EIS must consider a Mokelumne-only conjunctive-use groundwater storage alternative [U.S. Fish and Wildlife Service (USFWS); Contra Costa Water District (CCWD); Environment Defense Fund (EDF)]. Others assert that the EIR/EIS must incorporate a San Joaquin County storage component in any American River diversion and conveyance project to avoid "piecemealing" what is asserted to be a single project [East San Joaquin Parties Water Authority (ESJPWA), Stockton East Water District (SEWD), San Luis & Delta-Mendota Water Authority (SLDMWA)].

Response:

The major issue responses on Screening of Alternatives and Segmentation/Piecemealing provide a legal framework for consideration of the San Joaquin conjunctive-use issues. For both issues there are four specific reasons why an East San Joaquin groundwater banking project is too speculative and uncertain for analysis in this EIR/EIS and therefore cannot be reasonably implemented. San Joaquin County has:

(1) No effective control of groundwater overpumping by overlying agencies and pumpers;

(2) No legal framework for EBMUD recovery of stored water that would justify investment in a conjunctive-use project;

(3) No strong local authority with clear boundaries and sufficient powers to join EBMUD in such a project; and

(4) No consensus among the local water users that a conjunctive-use project with EBMUD is desirable.

These result in major legal, institutional, technical and economic uncertainties that make any long-term conjunctive-use project speculative and remote, despite more than a decade of proactive investigation and pilot projects supported by EBMUD. Therefore, such a project is infeasible and does not require consideration in the EIR/EIS.

A lead agency has the discretion to determine whether proposed project components or alternatives are too speculative or uncertain. This is true under both CEQA[1] and NEPA[2].

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1 See, e.g. Residents ad Hoc Stadium Comm. v. Board of Trustees (1979) 89 Cal. App. 3d 274, 286 (In an alternatives analysis, CEQA does not demand what is not realistically possibly given the limitation of time, energy and funds. Crystal ball inquiry is not required.)

2 See, e.g. Friends of Ompompanoosue v. FERC, 968 F 2d 1549, 1558 (2d Cir. 1992)(FERC need not consider conservation as an alternative to hydroelectric power station).

As part of its ongoing water supply planning, EBMUD is continually evaluating alternatives to increase available long-term storage. However, such long-term storage (whether in deep aquifers in the EBMUD Service Area, Sacramento County, a raised Pardee Dam or San Joaquin County, or some other storage project) is not a part of the Supplemental Water Supply Project. (Animal Defense Council v. Hodel, 840 F. 2d 1432 [9th Cir] 1998.) Although, in response to comments and requests from interested parties, EBMUD and Reclamation have included a broad programmatic assessment of groundwater storage in the 2000 REIR/SEIS, a more detailed analysis of San Joaquin conjunctive storage is not included in this EIR/EIS because of the following constraints, none of which are subject to control by the lead agencies:

1) **Legal and institutional uncertainty as to how San Joaquin County overpumping will be managed by the overlying agencies and water users.**

There is no single clearly defined groundwater basin in San Joaquin County ("County," or "the County"). Rather, underneath the County lie multiple complex aquifers that flow to and from the Delta, neighboring counties, the Delta-Central Sierra Basin, and the massive San Joaquin Valley Basin. The historic east-to-west general hydraulic gradient that formerly served to repel saline water has been reversed by unregulated overpumping during the last half century in the eastern County. Such unregulated groundwater pumping has led to seriously declining groundwater levels in and to the east of Stockton and consequent saline intrusion around Stockton. In the past decade, EBMUD has spent more than $2,500,000 on studies of potential groundwater projects in the County. One DWR study defined an "East San Joaquin Aquifer" using political boundaries, while recognizing that those political boundaries are not congruent with hydrologic reality. (See DWR Bulletin 118-80 at p. 38). Outlying agencies and water users within the County do not agree about groundwater management, and several oppose a conjunctive-use project. (See, Nickles, "Divided Over Water: Competing Interests Hurt County," Stockton Record, May 4, 1998, p. 1 (attached). The lack of groundwater management in the County is a prime example of the "Tragedy of the Commons."

There is no comprehensive plan for controlling overpumping in the County, which suffers annual overdraft of more than 70,000 acre-feet. There is no agency or other authority with the power to regulate the ongoing overpumping in the County. EBMUD's service area does not overlie any part of the County. EBMUD has no authority to regulate any groundwater pumping in the County.

In 1996, after years of discussion, EBMUD proposed that the San Joaquin parties join in an effort to use American River Water as one supply component of a conjunctive-use storage program in the County. Certain San Joaquin Parties presented EBMUD with "Principles for Further Negotiation Relative to a Conjunctive-use Project" (attached). These "Principles" would have restricted EBMUD recovery of water stored underground if groundwater levels continue to fall. EBMUD export of water stored underground would have been constrained by minimum groundwater elevation provisions. Those provisions would likely prevent EBMUD from extracting banked groundwater during a critical drought. Since any anticipated EBMUD extractions would amount to less than two percent of County-wide

groundwater pumping, EBMUD was in effect being requested to completely solve the County's groundwater overdraft as a pre-condition to export of banked, stored water. After further discussion, the San Joaquin Parties modified the groundwater elevation constraint somewhat, but clarified that they were not prepared to contribute any financial support to the project they were proposing Without a clear framework for local control of overpumping, the County's proposals leave EBMUD with a financial obligation and no assurance of an increase in long-term water supply reliability to justify (and finance) a feasible project.

2) **Legal and institutional uncertainty about whether and how local San Joaquin County entities can provide for long-term EBMUD rights to export any water stored underground.**

The attorneys for the County and the East San Joaquin Parties Water Authority (ESJPWA) have identified complex and uncertain approval requirements in several state statutes (Water Code Section 1220; 1011.5) that, if applicable, would allow veto of any conjunctive-use project by neighboring, outlying agencies that have chosen not to participate in County efforts to address overdraft. (See March 10, 1997 letter to George Barber from Tom Shephard and Michael McGrew, attached). Counsel for the County and ESJPWA concluded, for example, that under existing law, the counties of Sacramento, Stanislaus, Amador and Calaveras might have veto power over any conjunctive-use project in San Joaquin County, even though such outlying counties would suffer no harm from a conjunctive-use groundwater project that provides a net groundwater elevation benefit over time. Counsel for the County and ESJPWA have therefore concluded that clarifying legislation is required in order to eliminate the uncertainty of which entities must approve any conjunctive-use project. Once the County and other local parties agree, EBMUD is prepared to support such legislation. However, in the absence of such local agreement, there is no feasible project.

In May 1996, the County adopted a Groundwater Export Ordinance (S.J. Co. Ord 5-8300 et seq) that further complicates any long-term conjunctive-use storage project.. This Ordinance regulates the export of groundwater from the County and adds additional permitting steps and institutional uncertainties. In order to explore the institutional issues raised by this Ordinance and the County's interest in conjunctive-use, EBMUD took the proactive step of obtaining a water transfer for a pilot project to inject up to 3,000 acre-feet from the Mokelumne Aqueduct into a nearby test well operated by the ESJPWA. Pursuant to agreement with the ESJPWA, EBMUD applied for a permit or exemption in September 1997 from the Export Ordinance for up to one-half of the injected water. The County did not approve the permit for extraction of one-half of the water injected by this pilot replenishment project. Approximately 400 acre-feet of EBMUD water was injected in 1998. Local stakeholders are still trying to develop a way to advance conjunctive-use efforts. In June 2000, the San Joaquin County Board of Supervisors passed amendments to the Export Ordinance that provided additional protections to overlying landowners, but added additional restrictions. (The revised ordinance is attached) . Those restrictions include: elimination of the exemption for projects providing a net

groundwater recharge; a requirement for a contract with the overlying local agency prior to application; ten specific determinations made by the Board of Supervisors on the application; a requirement for three or more monitoring wells plus other conditions deemed necessary by the Board of Supervisors; operation of the project within a band of groundwater elevations; an assumed loss rate of five percent or greater for each year the groundwater is in storage; an independent environmental assessment paid for but without the involvement of the applicant; and creation of a Monitoring Committee empowered to recommend new project operations subject to binding arbitration. Furthermore, the revised Ordinance fails to specify criteria that, if met, would provide the applicant some certainty that a Permit would be granted. The Ordinance requires demonstrated compliance with the ambiguous Water Code Section 1220, but does not specify what the County requires to demonstrate compliance. Thus, since the comment was submitted in 1998, even more hurdles to a successful groundwater storage project in San Joaquin County have arisen.

There is no legal framework that would bind the County water users to any long-term agreement with EBMUD. A future County Board of Supervisors could amend the Export Ordinance or adopt a new ordinance that would eliminate any water supply benefit to EBMUD from groundwater storage in the County. Without the assurance of a clear state legislative framework authorizing recovery of water from the County's overdrafted aquifers, a future County Board of Supervisors could restrict the benefits to EBMUD from such a project.

3) **Uncertainty about the membership, authority and budget of the East San Joaquin Parties Water Authority for any conjunctive-use banking project involving EBMUD.**

The association known as the East San Joaquin Parties Water Authority (ESJPWA) was established in October 1996. Its constituent entities are Woodbridge Irrigation District, the North San Joaquin Water Conservation District, the Central San Joaquin Water Conservation District, the Stockton East Water District, the City of Lodi, the City of Stockton, and the San Joaquin County Flood Control and Water Conservation District. The ESJPWA is empowered to perform pilot and planning studies, but does not have the power to fund necessary joint project capital construction. All Authority decisions must be unanimous. The ESJPWA has recently authorized Lodi & NSJWCD to negotiate an agreement with EBMUD, but it is unclear whether ESJPWA members or the Board of Supervisors will approve of an agreement with these two entities. As noted, many of entities in San Joaquin county have previously asserted that EBMUD would be responsible for all conjunctive-use replenishment project costs, as well as maintaining a minimum groundwater elevation.

The seven ESJPWA entities have limited ability to fund capital facilities in a Joint Program. The County's voters would probably have to approve special taxes and bond measures. ESJPWA proposals that EBMUD fully fund and ESJPWA fully control project facilities have not been accompanied by parallel assurances of EBMUD rights to export water for its use.

The San Joaquin parties themselves have chosen not to participate in a joint project for conveyance from the American River. In 1996, EBMUD invited San Joaquin

representatives into discussions with Sacramento-area interests. For a short period, The ESJPWA participated as observers, but subsequently stated that their "willingness to entertain greater exports by the East Bay Municipal Utility District from the 'watersheds of origin' is dependent on there being a total solution to the water needs of the subject 'watersheds of origin.'" (June 4, 1996 letter from Robert Cabral to Dennis Diemer).3 Such a statement of position, without participation in project planning or any commitment for financial support, does not make San Joaquin participation in an American River conveyance project any less speculative, remote or uncertain.

4) **No clear agreement within San Joaquin County about the desirability or scope of a conjunctive-use project with EBMUD or any other entity.**

More than thirty years ago, the California Department of Water resources noted the factionalism and division among San Joaquin County water interests. A May 1998 two-part report in the Stockton Record (attached) documents the current state of such local factionalism:

> ... San Joaquin County's major water players, historically independent and protective of their own interests, continue to feud.
>
> They have been unable to agree on who's to blame for the steady deterioration of the groundwater, what should be done about it, and who should pay for it. Nickles, "Running on Empty: San Joaquin's Groundwater Basin Is In Jeopardy" (Stockton Record, May 3, 1998).

A later article in the series noted:

> San Joaquin County has more than two dozen independent water districts, each with its own turf to protect and mission to achieve. They rarely act as though they are on the same team. ...
>
> "What the county lacks is a cohesive water policy that is represented by a single agency for the benefit of all of the inhabitants of San Joaquin County," said Assemblyman Michael Machado, D. Linden, Chairman of the Assembly's Water, Parks and Wildlife Committee." Nickles, "Divided over Water: Competing Interests Hurt County" (Stockton Record, May 4, 1998).

A subsequent article stated:

> The county's reputation for being unable to agree with itself threatens to lead outside interests to look elsewhere for partners in water-storage development, all the while looking for new ways to siphon the life-giving natural resource often found in abundance in our own backyard...This classic San Joaquin County quandary visits us once again as a majority of narrow-minded members of the county's Advisory Water Commission let some scared farm interests block attempts to further an experiment by the mighty East Bay Municipal Utility District (Stockton Record, September 24, 1998).

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3 For response to the claim that San Joaquin Country has such area of origin rights, see Area of Origin Major Issue Response.

The San Joaquin County Farm Bureau has opposed the EBMUD conjunctive-use pilot project in the County (attached). Several County water agencies and water users who do not belong to the ESJPWA have also raised objections to the pilot groundwater replenishment project. Such objections would likely be amplified for a larger project.

Summary:

For a decade, EBMUD has expressed strong interest in a cooperative groundwater replenishment and conjunctive-use project in San Joaquin County. However, by itself, EBMUD cannot resolve any of the four issues identified above. Without resolution of all four issues, a conjunctive-use program in the County is not a feasible alternative to the Supplemental Water Supply Project, as any water storage benefit is too uncertain and speculative to support the financial investment and may well cost more than other long-term storage options. On the other hand, in light of potential mutual benefits, EBMUD welcomes efforts by the San Joaquin parties to address the four issues identified above, and has agreed to support the required enabling state legislation. If a project is selected by the ESJPWA and a dependable legal framework created, further environmental documentation for any groundwater storage and conjunctive-use project will be undertaken at that time.

As noted in the "Project Segmentation/Piecemealing" major issue response, the lead agencies are is not required to include uncertain or speculative future actions in the EIR/EIS analysis. San Joaquin groundwater banking is not a necessary precedent for the Supplemental Water Supply Project, nor does the Project commit EBMUD or USBR to completing a conjunctive-use groundwater storage project in the County. Because the Supplemental Water Supply Project has independent utility and does not commit EBMUD or USBR to any conjunctive-use or other storage project in the County, the project does not irretrievably commit future resources related to County groundwater.

In addition, as set forth in the alternatives screening major issue response, to be feasible, an alternative must take into account economic, legal and social factors. Alternatives that require significant changes in governmental policy or legislation need not be analyzed in depth, if they are remote or speculative. In Animal Defense Council v. Hodel, 840 F. 2d 1432 (9th Cir. 1987), the court rejected a NEPA challenge concerning construction, operation and maintenance of Phase B of the Tucson Aqueduct portion of the Central Arizona Project. Among other claims, plaintiffs advocated a local groundwater recharge proposal as an alternative. The EIS indicated that, although the groundwater proposal had been extensively reviewed, Reclamation had decided to eliminate groundwater as a viable alternative because the proposal was less cost effective and lacked support from the City of Tucson and the Southern Arizona Water Resources Association (840 F. 2d at 1437). The district court held that the EIS did not have to address the merits of an alternative groundwater recharge proposal because recharge was a method of water storage and not part of the federal CAP project (840 F. 2d at 1441). Because the recharge project required local decisions to implement, it was not part of the CAP. The location of the aqueduct did not foreclose future use of a recharge system, but the decision about whether a recharge system would be utilized was the responsibility of the City of Tucson.

Similarly, a conjunctive-use storage project in San Joaquin County would require a significant change in San Joaquin County water policies and a related state legislative

framework. After extensive studies with San Joaquin parties, EBMUD has decided to treat any potential future San Joaquin County conjunctive-use and underground storage as a separate project from the EBMUD CVP water conveyance project. The Supplemental Water Supply Project does not commit resources that would foreclose a future conjunctive-use storage project in the County, or any other long-term water storage option for EBMUD.

Taking into account the significant impediments outlined above, the 2000 REIR/SEIS responds to comments received and requests from interested parties by providing a program level analysis of banking in the groundwater basins of both San Joaquin County and Sacramento County. Because of the uncertain and speculative nature of such a banking program, and the absence of a project description for either San Joaquin County or Sacramento County that is adequate to provide a basis for detailed project-level environmental review, the 2000 REIR/SEIS provides a general programmatic assessment of groundwater storage use. If a specific project can ultimately be developed through negotiation with interested parties and affected stakeholders, further environmental documentation will be undertaken at that time.

List of Attachments:

Nickles, "Running on Empty: San Joaquin's Groundwater Basin Is In Jeopardy," (Stockton Record, May 3, 1998); and "Divided Over Water: Competing Interests Hurt County," Stockton Record, May 4, 1998. (Two part series) .

Principles for Further Negotiation Relative to a Conjunctive-use Project (1996), San Joaquin County.

Letter to George Barber from Tom Shephard and Michael McGrew of March 10, 1997.

San Joaquin County Groundwater Export Ordinance (S.J. Co. Ord. 5-8300 et seq.). As revised in June 2000.

"S.J. Water storage opportunity lost?" (Stockton Record, September 24, 1998).

Dogen Hannah, "Water banking reviewed," (Stockton Record, February 13, 2000).

SJ Farm Bureau, " Efforts to Draw Outsiders into Groundwater Aquifer lacks Support" San Joaquin Farm Bureau News, August 2000.

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A Special Report

S.J. County's groundwater basin is in jeopardy

By Jim Nickles
Record Staff Writer

Paul Sanguinetti is counting on his farm having water in the next century.

"Someday my kids are going to be farming, I hope," said Sanguinetti, a fourth-generation farmer who raises cattle, wheat, sugar beets and walnuts east of Stockton. "If there's no water, there's no farming, there's no income, there's no living. We'll go to town to get a job. I mean, will we all have to go to town to get a job?"

Crisscrossed by rivers, astride the largest freshwater estuary on the West Coast and at the hub of California's vast water-delivery system, San Joaquin County nevertheless finds itself in a most ironic plight:

It needs more water.

Not that most people would notice, especially in this year of near-record rainfall.

But area water agencies say that unless they secure at least 250,000 additional acre-feet of surface water a year, the vast underground basin that supplies most of the county's needs could be permanently damaged or lost -- contaminated by saline groundwater creeping in from the Delta.

The Stockton urban area alone uses about 60,000 acre-feet a year. (An acre-foot, about 326,000 gallons, is about what two average-size families use annually.)

That doomsday scenario may be as little as two decades away, say water officials, who cite a litany of studies going back to the 1960s that have found San Joaquin County slowly depleting its groundwater basin, or aquifer.

What's at stake, many officials and water experts say, are the continuing growth of Stockton, Manteca, Lodi and other cities, and the viability of thousands of acres of farmland.

"By 2020, if we do nothing, we would be in serious trouble," said Edward Steffani, general manager of Stockton East Water District, Stockton's wholesale water supplier. "We're not in serious trouble today. It happens slowly. ... Some areas will run out of water."

Like the state as a whole, San Joaquin County will be short of water in the next two or three decades, according to a new state study.

California will face shortages of between 2.9 million and 7 million acre-feet by 2020, says the draft State Water Plan, released recently by the Department of Water Resources.

The region that includes most of San Joaquin County will face an annual shortage -- in normal rainfall years -- of 283,000 acre-feet.

"You've got a microcosm of what the state is facing," said Assemblyman Mike Machado, D-Linden, chairman of the Assembly's Water, Parks and Wildlife Committee.

While only the portion of the county east of the San Joaquin River relies directly on the basin -- Tracy gets groundwater from a western basin -- its health has countywide and regional implications, economically and otherwise.

And while 2020 may seem far off, it's already a pocketbook issue for ratepayers in the Stockton area, who have seen their water bills double in the past decade to fund a variety of water-acquisition efforts, most of which have yielded little.

The eastern groundwater basin is at the center of flaring disputes between farmers and cities; between Delta water users and those upstream; and between San Joaquin County and the state and federal agencies that control most of California's water.

Delta farmers, worried about maintaining freshwater flows into the troubled estuary, oppose attempts to divert water from the Stanislaus and American rivers to replace groundwater.

Meanwhile, Stanislaus River water originally earmarked for the eastern county via Stockton East's $65 million New Melones Reservoir conveyance project is instead being used by the state and federal governments to dilute pollution in the south Delta.

"We are all involved in this groundwater basin," said John Pulver, the county's water-resources coordinator. "It's a countywide issue."

Pipelines send it on

Of all the ironies of San Joaquin County's water plight, none is greater than that the county is the center, the Grand Central Station, of California's water supplies.

Water destined for San Francisco, the East Bay, Los Angeles and the southern San Joaquin Valley passes through San Joaquin County in giant pipelines, concrete-lined canals or the channels of the Delta.

But for decades, San Joaquin County has been left to fend for itself while state and federal agencies shipped subsidized water past Tracy to irrigate lawns in Southern California and cotton fields near Bakersfield.

Now is the time to change that, many officials say.

A coalition of state and federal agencies known as the CALFED Bay-Delta Program is studying long-range, multibillion-dollar measures to improve the Delta and California's overall water supplies. Among the alternatives under discussion is an around-the-Delta channel similar to the Peripheral Canal plan defeated by the state's voters in 1982.

San Joaquin County should play a strong role in CALFED, not only to protect the Delta but to improve its own water supplies, Machado said.

Instead, San Joaquin County's major water players, historically independent and protective of their own interests, continue to feud.

They have been unable to agree on who's to blame for the steady deterioration of the groundwater, what should be done about it and who should pay for it.

Because of the county's internal divisions, "We really haven't been at the table in terms of the CALFED discussions," Machado said.

He likened the squabbling to "a man and a wife that are arguing with the front door open. While they're

arguing in the kitchen, the neighborhood is coming in and stealing the house blind. In essence, that's kind of where we're at."

Urban water providers accuse farmers, who use the lion's share of San Joaquin County's water, of overpumping the basin while doing little to help bring in more surface water.

"The ag community is not using as much surface water now as they were back in the early to mid-1980s and the 1970s," said Gary Ingraham, Stockton's assistant city manager. "From that standpoint, they have made the situation worse."

Farmers say they are trying to do their part, using more surface water and irrigating efficiently. But it's the urban area's relentless growth that's putting pressure on water supplies, they say.

"We're actually using less water than we did 30 years ago," Sanguinetti said. "We been farming out in this area since the late '40s, right after the war. But how big has the city grown?"

Water underneath us

Unbeknownst to many people, most of the water consumed in San Joaquin County comes not from rivers or reservoirs but a vast aquifer that stretches from the foothills in the east to the Delta and from the Mokelumne River in the north to the Stanislaus River in the south.

It's not an underground lake, but layers of rock and sand hundreds of feet thick that contain an estimated 6 million acre-feet of water -- 50 percent more than is in Lake Shasta.

According to the state Department of Water Resources, an estimated 860,000 acre-feet -- more than 14 times the amount of water used in Stockton alone -- is pumped each year from wells that dot both the verdant farm country and the burgeoning urban areas.

On average, though, more water comes out of the ground each year than is replenished naturally by rainfall or snowmelt.

The annual deficit -- or "overdraft" -- amounts to about 70,000 acre-feet, according to studies conducted in recent years by the state and federal governments and local agencies.

But not everyone agrees the basin is in trouble.

In many areas, the water table has actually risen the past few years, replenished by the abundant rain and snow, said Mike Clark, whose family-owned company, Clark Well Inc., has been tapping the basin since the 19th century.

He accused Stockton East and other agencies of exaggerating the threat to the aquifer to justify spending millions of dollars on ill-fated projects.

"If you talk about the county as a whole (being short of water), it's just a big lie," he said.

Others say the threat is real and growing.

While the basin has risen somewhat since the end of the drought in the early 1990s, the overall trend remains downward, officials said.

"We're not going to have these wet years continuously," Steffani said, denying any misrepresentations by Stockton East.

"Compared to what (the basin) was 50 years ago, it's still in really bad shape," said consulting engineer Anthony Saracino, who's working on a groundwater-recharge project for several county water agencies. "For over 50 years, groundwater levels have been steadily declining. There is just no argument about

that."

Amid wet years and dry, El Niños and droughts, the groundwater table under Stockton and the eastern half of the county has dropped nearly 2 feet a year over the past half-century.

Near Sanguinetti's ranch on Highway 4, the groundwater has dropped nearly 80 feet since his grandfather began farming the land in the late 1940s, according to records compiled by Stockton East.

In 1949, the water level at Highway 4 and Jack Tone Road was at 26 feet above sea level, the district said. By 1996, the groundwater was 52 feet below sea level -- a drop of 78 feet.

Impure water advancing

Aside from the overdraft itself, which could be damaging the aquifer in unknown ways, the overpumping is allowing a front of saline water to move east from the Delta.

As the level of good-quality water east of Stockton declines, the saline water moves into the void like a stream flowing off a mountain, said Mike Callahan, a senior engineer with San Joaquin County who conducts twice-a-year groundwater surveys.

"I tell people to visualize it like mountains and valleys," he said. "The water is going to flow downhill."

In 11 years, from 1985 to 1996, the saline front moved eastward more than two miles -- from just east of Interstate 5 in downtown Stockton to east of Airport Way, according to the county's Fall 1996 Groundwater Report, the most recent evaluation of the saltwater intrusion.

Despite the recharge provided by the past few wet years, "the front is still going to be moving," Callahan said.

He added:

"My understanding is that once salt water gets into a basin like that, you can't get it out."

If the annual overdraft is now 70,000, it could grow to 130,000 acre-feet by 2030, given the county's growth trends and its inability to obtain additional surface water, a 1996 federal report concluded.

The study, the American River Water Resources Investigation, was conducted by the Bureau of Reclamation with funding from San Joaquin and four other area counties.

Moreover, to bring the basin back to full health, the study said, the county could need an additional 70,000 acre-feet a year -- and possibly as much as 120,000 acre-feet.

That's a grand total of 250,000 acre-feet the county needs over the next 20 to 30 years.

"What these numbers add up to is this is the amount of supplemental surface water supply we would need to put this basin back to the condition it was in 1990," said Pulver, the county's water coordinator.

Since the 1960s, the federal government has promised water from the American and, later, Stanislaus rivers to ease pressure on San Joaquin County's groundwater.

But those promises have yielded little.

The Folsom-South Canal, originally designed to bring American River water to eastern San Joaquin County, was never completed after the federal government scuttled the Auburn Dam because of seismic, financial and environmental concerns.

Stockton East Water District and several partners, including the city of Stockton, spent $65 million on a

40-mile-long conveyance system from the Stanislaus River to the district's treatment plant east of the city.

The federal Bureau of Reclamation, which operates New Melones Dam, pledged to deliver up to 101,000 acre-feet a year to Stockton East and 49,000 to the Central San Joaquin Water Conservation District.

That project was completed five years ago.

But just as it was finished, the federal government reallocated the reservoir's water to provide more freshwater flows to the Delta, sharply curtailing San Joaquin County water deliveries.

Only in the past two years has water been available. But the system has carried only 50,000 acre-feet a year -- not 150,000.

But even if Stockton East or other agencies obtained additional water, one big question is whether it would be cheap enough and readily available for the county's biggest water users, farmers.

City officials say Stockton has used increasing amounts of surface water since Stockton East completed its water-treatment plant in the late 1970s. In recent years, Stockton's biggest water retailers -- the city and California Water Service Co. -- have gotten about two-thirds of their supply from the treatment plant.

Paying the price

And Stockton's ratepayers have borne most of the burden of bringing in supplemental supplies, largely underwriting the New Melones project as well as numerous studies, legal fights and lobbying efforts. The fairness of charging urban ratepayers to correct an overdraft caused largely by farmers is the underlying issue in a lawsuit filed by the city and Cal Water against Stockton East.

"The urban area cannot afford to solve that problem," Ingraham said. "We can't burden our ratepayers with the cost to replace 200,000 acre-feet of water."

But the bureau's American River study concluded that urban growth will create most of the demand for more water in San Joaquin County between now and 2030.

While agriculture's water usage will remain about the same and may actually decrease -- from 1.1 million acre-feet in 1990 to just over 1 million acre-feet in 2030 -- the county's cities will use more than twice as much water -- from 111,500 acre-feet in 1990 to 236,700 acre-feet in 2030.

"The city is not conserving water," Sanguinetti said.

Sanguinetti, a former San Joaquin Farm Bureau president and an outspoken advocate for family farmers, says he uses as much surface water as he can. During the past few years of abundant rainfall, when he's been able to take much of his irrigation water from nearby Duck Creek and Mormon Slough, he has seen the groundwater level come up.

But surface water is not as reliable as groundwater, and many farmers have no way to get it to their fields.

And especially in dry years, he still relies heavily on his wells, some of which go down 250 feet or more.

"Whatever's the cheapest, that's what we're going to do. If it's cheaper for me to pump out of the ground than to use surface water, I'm going to pump it out of the ground," he said. "If we plant trees or something, we've got to have a reliable source of water."

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A Special Report

Competing interests hurt county

By Jim Nickles
Record Staff Writer

San Joaquin County's water woes are due as much to politics -- local, state and federal -- as to hydrology, the science of water.

How else to explain how a county blessed with two major rivers -- the Stanislaus and the Mokelumne -- a huge groundwater basin and the largest freshwater estuary on the western coast of North America could be running out of water?

While the state and federal governments are considering a number of options to improve the Delta and bolster water supplies statewide, the county's diverse water interests are launching a number of costly, controversial and often competing ventures.

But what the county needs -- aside from more water -- is better, more cohesive water management, a growing number of area officials and water experts say.

San Joaquin County has more than two dozen independent water districts, each with its own turf to protect and mission to achieve.

They rarely act as though they're on the same team.

As a result, the county's waterways are controlled mostly by water interests from other regions.

"We have been totally carved out," said Gary Ingraham, Stockton's assistant city manager. "We are a Johnny-come-lately. This county has virtually no perfected water rights that I am aware of. None. And those are things that everybody else did back 50 years ago."

As water has become a more and more precious commodity, ratepayers in the Stockton area have felt the squeeze.

"I think (rates are) too high," said resident Parminder Mahil, a real estate investor who owns several rental properties. "All I know is the city wants money -- more and more."

In the past decade, Stockton's water rates have virtually doubled, with much of the money going to finance a quest for supplemental surface water to ease demands on groundwater.

But those efforts -- most notably a $65 million tunnel-and-canal system to bring New Melones Reservoir water to farmers and the city -- have yielded only marginal results.

Officials say that if the county were more unified, it could exert greater influence in California's latest water struggles. A coalition of state and federal agencies known as the CALFED Bay-Delta Program is focusing on long-range measures to improve the Delta and water supplies for the entire state.

One option under consideration is an around-the-Delta channel that would carry high-quality water from the north Delta past Stockton to the state and federal pumps near Tracy. Opponents -- including Delta

farmers, environmentalists and most San Joaquin County water agencies -- say such a channel would devastate an estuary already troubled by a lack of fresh water.

"Geographically, we're in the crosshairs of the debate," said state Sen. Patrick Johnston, D-Stockton.

Unfortunately, many officials say, the county hasn't played much of a role in CALFED, either to protect the Delta or obtain its share of any new water supplies.

"We better make sure our voices are heard on this or else we're going to get bypassed again," said Rep. Richard Pombo, R-Tracy.

Effort begins to organize

In recent weeks, a small group of elected officials and business leaders has been trying to organize a countywide series of meetings on water issues similar to the Sacramento Water Forum, which has brought together Sacramento County's diverse business and environmental interests.

Beyond that, at least some officials believe the county -- or at least the area east of the Delta that is overpumping its groundwater basin -- needs a single, powerful water agency similar to the Metropolitan Water District of Southern California.

"There should be one water district for eastern San Joaquin county. One district," said Edward Steffani, general manager of Stockton East Water District.

Proponents say a countywide agency could resolve internal squabbles, negotiate more effectively with other regions and have the financial capability to take on large-scale water projects.

"What the county lacks is a cohesive water policy that is represented by a single agency for the benefit of all the inhabitants of San Joaquin County," said Assemblyman Michael Machado, D-Linden, chairman of the Assembly's Water, Parks and Wildlife Committee.

Such an agency has been contemplated since at least 1967, when the state Department of Water Resources studied the declining groundwater supply in eastern San Joaquin County.

But in a county divided between east and west, north and south, water "haves" and "have-nots" -- in fact, for many of the same reasons Machado and others say a superagency is needed -- the idea has never gotten very far.

"No one wants to give up that authority," Steffani said. "No one wants someone from outside their little fiefdom telling them what to do. No one wants to give up anything to solve this problem. As a result, the problem gets worse and worse."

The county is simply too fractured, with too many competing interests, to be represented by one agency, said county Supervisor Dario Marenco, who proposed forming a countywide water district nearly two decades ago.

"Water is too precious today to have any district unify. It's not going to happen," he said. "That's a great idea on paper. But today you couldn't do it. Back then (in the early 1980s), it was an opportunity. But that window has closed a long time ago, in my view."

Dwindling supply

The vast groundwater basin east of the Delta and between the Mokelumne and Stanislaus rivers is being drawn down by farms and cities at a rate of 70,000 acre-feet a year -- more than is used annually in the entire Stockton urban area.

An acre-foot, about 326,000 gallons, is about what two average-size families use in a year.

Because of that deficit, or "overdraft," saltwater intrusion could threaten the integrity of the entire basin in the next 10 to 20 years unless the county can secure at least 250,000 acre-feet annually of additional surface water, area water officials say.

Others say the shortage could be even worse.

Planners for the state Department of Water Resources say San Joaquin County could be short, in normal rainfall years, 283,000 acre-feet by 2020.

And in drought years, the shortfall could be as much as 404,000 acre-feet, they say in a draft State Water Plan released earlier this year.

In some respects, San Joaquin County's water plight reflects its unique geography, particularly an abundant groundwater supply that met most of the needs of cities and farms through the first half of this century.

By the time the county's elected leaders realized groundwater would not be enough, other regions -- the Bay Area, Southern California, farmers in the southern Valley -- had locked up the major rivers.

San Francisco flooded Hetch Hetchy Valley in Yosemite National Park to capture the Tuolumne River.

East Bay Municipal Utility District built Pardee and Camanche dams to take over the Mokelumne River.

Much of the Stanislaus River is controlled by the federal Bureau of Reclamation and two water-rich irrigation districts, South San Joaquin and Oakdale, which secured abundant water rights in the early years of the century.

The bureau also diverted the San Joaquin River at Friant Dam, sending most of its flow to farmers in the south.

And the Delta itself is under the thumb of the state and federal governments, which ship water to Southern California and the southern Valley.

Storage difficult

As the floods of 1997 demonstrated, plenty of water can still flow through San Joaquin County in wet years.

But the county has few ways to capture it.

For years, area agencies -- particularly Stockton East Water District -- have studied such measures as enlarging Farmington Dam or building a large-scale groundwater-recharge project.

But each has been hampered by political infighting, financing problems or lack of a water source.

"Our supply options are very limited and very difficult to acquire. There is not a clear answer about where any new source would come from," said Will Price, a University of the Pacific business professor who serves on the county's Advisory Water Commission. "There's just nothing left for us."

Johnston agrees. "If anybody had an affordable, practical way to give everybody all the water they wanted at an affordable cost, I guess it would have happened," he said.

In the absence of any countywide plan, individual districts and cities are pursuing a number of new projects -- often over their neighbors' objections.

For instance:

* San Joaquin County this month will consider granting East Bay Municipal Utility District a permit to export half the water it stores in the depleted groundwater basin in a pilot recharge project with several local districts. Proponents say the plan would help the basin while giving East Bay MUD additional storage for drought years. But critics, including the San Joaquin Farm Bureau Federation, oppose giving anyone permission to export water from a basin that is already in trouble.

* Stockton is on the verge of spending upwards of $1 million to study the feasibility of taking up to 125,000 acre-feet a year out of the Delta for municipal use. But Stockton East Water District, the city's current major wholesale supplier, says diverting water from the Delta is a bad idea because water quality is poor and because the state water-rights board would never approve the diversion anyway.

* Mean-while, the city, Stockton East and other agencies are negotiating to spend up to $1.65 million a year to buy Stanislaus River water from the Oakdale and South San Joaquin irrigation districts. The plan is opposed by farmers worried about its impact on groundwater and water quality in the south Delta.

* And four south county cities -- Ripon, Lathrop, Manteca and Tracy -- are studying a $120 million plan to use Stanislaus River water to supplement their groundwater supplies. Water agencies in the Delta oppose the idea of sending water to Tracy, outside the Stanislaus River watershed, when it could be used to improve water quality in the rivers and replace groundwater in the eastern county.

East Bay MUD's request for an export permit promises to be a major battle when it is considered later this month by the Advisory Water Commission.

The Oakland-based district is asking for permission to export half the water it is recharging into the basin in a $600,000 pilot project with a group of water agencies known as the East San Joaquin Parties Water Authority.

So far, the recharge well, east of Lodi, has put less than 100 acre-feet into the ground, using Mokelumne River water provided by East Bay MUD. Under its proposed permit, East Bay MUD could then pump up 50 acre-feet in the future for shipment to its customers in Alameda and Contra Costa counties.

But proponents say the project could be the first step in using excess water from the Mokelumne or American rivers in years of heavy runoff -- such as this year -- to replenish the basin artificially. The East San Joaquin Parties Water Authority, formed only last year, is considering a first-phase recharge project costing $24 million that would put an average of 3,500 acre-feet into the groundwater basin.

"There's no doubt whatsoever that if we had a number of these (recharge wells) surrounding the area, it would be a great benefit," said Anthony Saracino, a geologist working for East San Joaquin.

John Lampe, East Bay MUD's director of water and natural resources, agreed.

"Even if the county got no water directly, just the fact that we were storing water in the groundwater basin and raising the groundwater table is of significant benefit to the county," he said.

Exports feared

But area farmers, worried about giving East Bay MUD authority to export critical groundwater supplies, are gearing up for a fight.

"My feeling with that East Bay MUD deal, hey, I just think we're playing with a loaded gun," said Paul Sanguinetti, a Stockton area farmer and former Farm Bureau president. "Because when we get a lot of dry years in a row, there's no way that we're going to stop them from exporting that water out of the county. No way. What happens is we'll have to stop pumping out here."

Joe Waidhofer, a retired veterinarian who has been a one-man lobbying force on water issues for five

decades, said the project won't provide enough water to do the groundwater basin any good.

The basin needs 300,000 acre-feet to bring it back to health, he said.

"This is the biggest boondoggle," he said. "This deal with East Bay MUD is a disaster for us."

Steffani said the proposed project is too expensive -- as much as $485 per acre-foot -- for too little water.

Others say a recharge project, properly structured with guarantees against overpumping, could be one small step in helping the county out of its water dilemma.

"In my experience, it's easier to make the incremental deals, the incremental solutions, as long as you don't harm yourself in the long run," said John Pulver, the county's water-resources coordinator.

Saracino said anything would be better than the current stalemate and inaction.

If the first phase is successful, it could be expanded into a large-scale recharge effort.

"Even if we're only getting 10 acre-feet a year (of additional water), it's still better than nothing. It demonstrates that the project is viable and something can happen," he said.

EBMUD

The Record

Date 5-4-98 Page A4

Wateropoly

San Joaquin County's endless water wars sometimes seem like a giant board game, with each player trying to grab more water supply — or protect an existing supply — at everyone else's expense. But the only winners seem to be lawyers. Here's a look at some of the current maneuvering:

Stockton

Seeking a state-granted right to divert water from the San Joaquin River. City officials, including Municipal Utilities Director Morris Allen, are suing Stockton East Water District, the city's major water supplier, over how it has managed millions of dollars in water fees.

Stockton East Water District

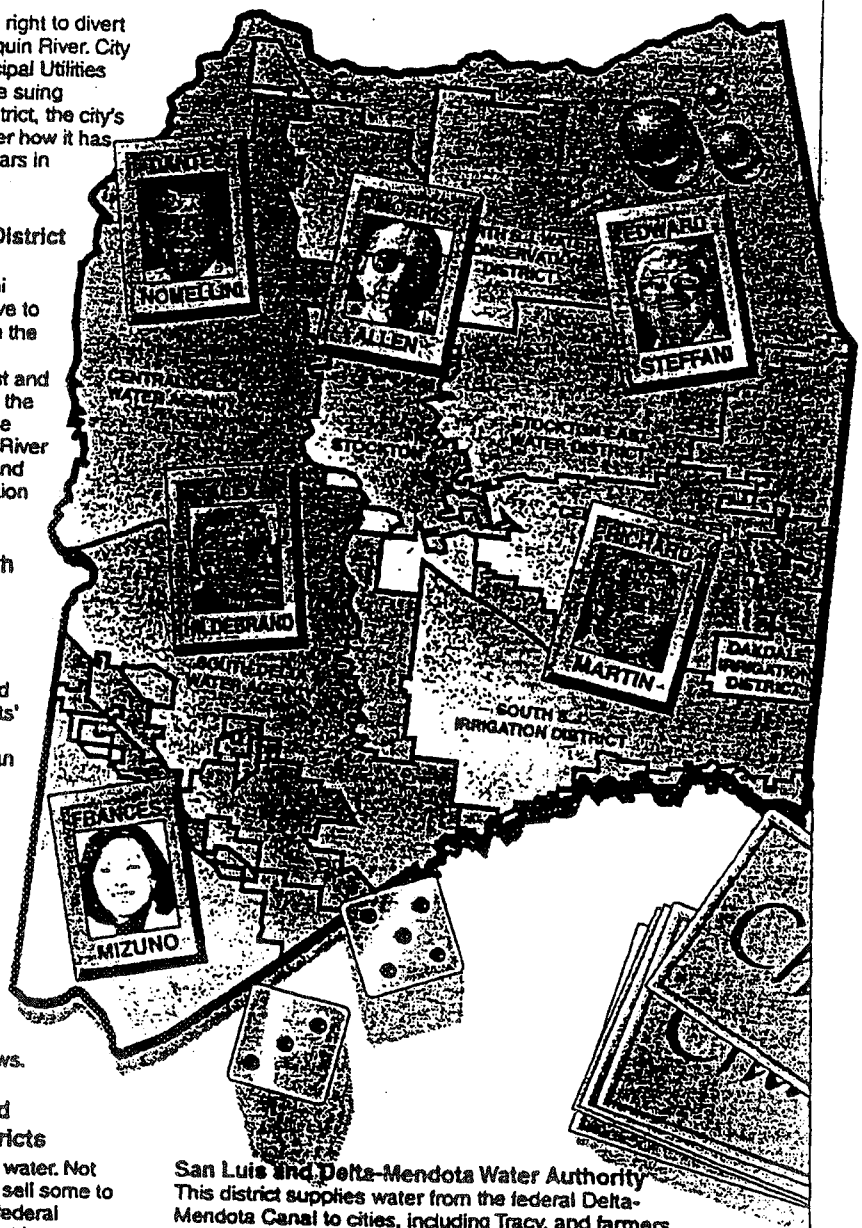
Stockton East General Manager Edward Steffani objects to Stockton's move to get water on its own from the San Joaquin River. Meanwhile, Stockton East and other agencies, including the city, are trying to purchase supplemental Stanislaus River water from the Oakdale and South San Joaquin irrigation districts.

Central Delta and South Delta water agencies

The South Delta Water Agency, in charge of protecting water quality, objects to the Oakdale and South San Joaquin districts' selling Stanislaus River water to the Stockton urban area. Director Alex Hildebrand says the diversion will reduce freshwater flows in the Delta. The Central Delta Water Agency, represented by Dante Nomellini, is suing the Oakdale and South San Joaquin districts over their sale of water to the federal Bureau of Reclamation for fishery flows.

South San Joaquin and Oakdale irrigation districts

These districts have lots of water. Not only are they attempting to sell some to the Stockton area and the federal government, but they are putting together a supply plan for Manteca, Tracy, Lathrop and Escalon. Stockton East Water District officials may oppose that project if they find it hurts the groundwater basin or reduces Stockton's Stanislaus River supply. Pictured is South San Joaquin's manager, Richard Martin.



San Luis and Delta-Mendota Water Authority

This district supplies water from the federal Delta-Mendota Canal to cities, including Tracy, and farmers south of the Delta. Assistant Executive Director Frances Mizuno says it opposes an East Bay Municipal Utility District attempt to divert American River water in Sacramento County and send it through San Joaquin County. While other San Joaquin County agencies want to tap into that project, Mizuno's agency says the project will reduce Delta inflow, thus reducing the amount that can be exported south.

Source: San Joaquin County Flood Control and Water Conservation District; Record research

Sheldon Cordier-Carpenter/Record

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October 24, 1995

John B. Lampe
Director of Water Planning
East Bay Municipal Utility District
Post Office Box 24055
Oakland, CA 94623

Re: Conjunctive Use Project

Dear John:

Here is a copy of letter and principles that went to each of the cities and districts, as well as the county.

Very truly yours,

THOMAS J. SHEPHARD, SR.
Attorney-at-Law

TJS/jd
Enclosure

45279-1

...ach AVENUE
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STOCKTON, CALIFORNIA 95202

FOURTH DISTRICT

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THORNTON: 794-2784
STOCKTON: 943-6363

BILL BISHOFBERGER
Legislative Assistant

October 17, 1995

The Honorable Board of Supervisors
County of San Joaquin
Courthouse, Room 701
222 E. Weber Avenue
Stockton, California 95202

Dear Members of the Board:

RE: CONJUNCTIVE USE PROJECT

As you know, we have been working for some time on a possible joint conjunctive use project with the East Bay Municipal Utility District (EBMUD). A study has been undertaken jointly with EBMUD at a cost of over $600,000 with over $300,000 provided through the Board of Supervisors by way of a San Joaquin County Flood Control and Water Conservation District assessment and the other half provided by EBMUD. That study has been completed. Our work has been done in connection with a Technical Committee and a Policy Committee to which you have appointed representatives.

Since the study is now complete, it is time to move forward with substantive negotiations with EBMUD and perhaps other interested parties. The Policy Committee has asked that I write to you and ask that you endorse continued negotiations under the proposed Principles. The enclosed Principles are intended as guidelines under which the East San Joaquin Parties ("ESJP") will undertake negotiations.

We believe the project contemplated by the Principles would assist in meeting the water needs of the ESJP and EBMUD, and would particularly address the needs of our critically overdrafted groundwater basin.

The conjunctive use Policy Committee has worked very hard to assemble a set of Principles acceptable to all of the ESJP representatives. These Principles are by no means the final word on how a future project would look. Rather, they are a set of guidelines to steer the ESJP during the negotiation process with EBMUD. Any final agreement will be subject to approval by the

interested parties or by an overall agency formed by the interested parties. We have not reached that point yet.

We know a major issue for all concerned will be "how much will it cost" and "how will we pay for it." Until the project becomes more firm after negotiations we cannot come to any meaningful conclusion as to cost. We do know cost will be a major issue for all concerned.

Meanwhile, we would like your approval and the approval of all of the other involved agencies to be sure we are moving in the direction you desire.

While you have had representatives on the Technical and Policy Committees, if you would like someone to appear before your body, for a more detailed explanation, we would be happy to arrange for it.

Should you have any questions, please let us know.

Very truly yours,

George L Barber

GEORGE L. BARBER
Chairman
San Joaquin Conjunctive Use Policy Committee

GLB:TJS:EMS/ect
Enclosure

PRINCIPLES FOR FURTHER NEGOTIATION RELATIVE

TO A CONJUNCTIVE USE PROJECT

(10/16/95)

1. The following principles shall apply to a phased conjunctive use/water banking project (Project) to be undertaken jointly by the Eastern San Joaquin Parties (ESJP) and the East Bay Municipal Utility District (EBMUD).

2. Eastern San Joaquin County is an area suffering from an overdrafted groundwater basin and includes, among other areas, the territory within the boundaries of the Eastern San Joaquin Parties, that is, the Woodbridge Irrigation District, the North San Joaquin Water Conservation District, the City of Lodi, the Stockton East Water Conservation District, the City of Stockton, the Central San Joaquin Water Conservation District, and the adjoining County territory under the jurisdiction of the San Joaquin County Flood Control and Water Conservation District.

3. The ESJP will undertake joint negotiations with EBMUD and other interested parties including Sacramento County, if requested, but two way negotiations with EBMUD on matters of concern to the ESJP and EBMUD shall continue.

4. The priorities of the Project shall be in order, as follows:

FIRST: To stop the overdraft of the Eastern San Joaquin County basin;

SECOND: To restore the basin to an agreed upon progressively improving recovery level;

THIRD: To supply the water needs of the ESJP;

FOURTH: To supply the water shortage needs of EBMUD in dry years.

5. Project Conveyance Facility

5A. The ESJP continue to prefer a canal along the original alignment of the Folsom South Canal to allow water to move in both directions as needed.

5B. If EBMUD and the ESJP elect to construct a conveyance facility from the Folsom South Canal to the Aqueducts the facility should have the capacity to convey EBMUD's full entitlement of 150,000 acre-feet per year and the facility should have appropriate turnouts north and south of the Mokelumne River accessible to the NSJWCD and other interested water users in a manner which will provide gravity service as originally contemplated from the alignment of the Folsom South Canal.

5C. Even if EBMUD and the ESJP construct a facility from the Folsom South Canal to the Aqueducts, a conveyance facility should be constructed north from Peters to an agreed upon point north of the Mokelumne River.

6. Water Supply

6A. The minimum, acceptable supply of water to ESJP in wet years (as defined by DWR) is 300,000 acre-feet.

6B. 371,000 acre-feet of water should normally be available in wet years through the EBMUD entitlement from the American River, or an equivalent amount from the EBMUD Mokelumne River entitlement; the SEWD-CSJWCD entitlement from the Stanislaus River; all water on the Mokelumne River not now used by EBMUD or any downstream water right holders; any unregulated flows on the Calaveras River which can be put to use; and, any unregulated flows in Little Johns Creek which can be put to use.

7. Facilities which shall provide water shall include but will not be limited to:

7A. A conveyance facility extending at least to an agreed point north of the Mokelumne River and as far south as Peters.

7B. Gravity diversion structures from the Mokelumne and the Calaveras to the north-south conveyance facility.

7C. A combination of new agricultural distribution systems such as injection wells, surface water facilities, and in-lieu recharge systems with a minimum, total capacity of 265,000 acre-feet with a minimum of 10,000 acre-feet of annual, firm surface

water delivered to NSJWCD.

7D. EBMUD injection/extraction or in-lieu facilities with a minimum capacity of 70,000 acre-feet, which will operate within geologic formations in a manner which will in no way impair water quality within Eastern San Joaquin County and will create a common source of water for the ESJP and EBMUD.

8. Phase I Extraction Thresholds; Goals; Use:

8A. The Parties shall develop a dynamic base groundwater profile through groundwater and saline intrusion monitoring facilities as a means to set minimum, standard groundwater conditions for the area and to continuously monitor the basin. The profile will include information on water quality, salinity levels, and water table elevations.

8B. EBMUD shall not extract water for export if the groundwater levels in the basin drop below the groundwater levels reported for the fall of 1990 by the San Joaquin County Flood Control and Water Conservation District.

8C. The groundwater elevation goals are to be 30 feet below sea level east of Highway 99 and 20 feet below sea level west of Highway 99 and where groundwater elevations are now above those levels, then the current elevations. These groundwater elevation

goals shall be revised if warranted through analysis of the information obtained pursuant to the monitoring described in 8A in conjunction with other relevant data, water quality goals, groundwater levels, and salinity intrusion goals.

8D. Should the goals set forth in 8C not be met within ten years after the start of project operations, Phase II shall be implemented.

8E. Until the goals of 8C are met, EBMUD shall be allowed to extract an agreed upon percentage of the water stored by EBMUD within the groundwater basin. After the goals of 8C are met, the Parties shall be entitled to an equitable share of all waters stored in the basin as part of this project as agreed upon by the parties. All extractions by EBMUD shall remain subject to 8B.

9. Phase II shall be implemented if the goals set forth in 8C are not achieved within ten years of the Project's start of operations. The Agreement between the parties shall ensure that Phase II will be implemented by the parties when required.

10. Phase II may consist of one or more of the following:

10A. An enlarged and reconstructed Farmington Dam suitable for water storage as well as flood control.

10B. South Gulch Water Conservation Reservoir.

10C. Additional recharge facilities.

10D. Other facilities as may be agreed upon by the parties.

11. Use of Delta and/or Sacramento River water, if any, shall be proportionate between EBMUD and the ESJP.

12. Localized groundwater drawdown, caused by the Project, shall be minimized so as to avoid unnecessary impacts on groundwater users through prudent extraction site selection. Adverse impacts on groundwater users shall be fully mitigated. Seepage and high groundwater level impacts caused by the Project shall also be fully mitigated.

13. The ESJP continue to be opposed to the EBMUD approach set forth in Composite No. 2 of the Water Supply Management Program.

14. Integration of EBMUD's American River supply into the project is essential to develop a successful conjunctive use/water banking program between EBMUD and the ESJP. It is recognized that diversions from the American River by a joint American River project would be subject to the "Judge Hodge Decision," as it may be modified. EBMUD in consultation with the ESJP, shall, seek modification of the terms of the "Judge Hodge Decision", to allow for conjunctive use of both American and Mokelumne River waters. Integration of San Joaquin County's

filing on the American and Mokelumne Rivers and other local water entitlements as well as increased yields from combined operations, new facilities and supplies, should be evaluated for use in any conjunctive use project. Other reasonable alternatives should be considered in a study to provide information on yield, costs and constraints.

15. The cost of distributing water to the various parcels of agricultural lands within the territory of the ESJP will vary substantially depending upon the proximity to the sources of water and the extent of surface water distribution facilities already in place as well as such additional facilities as may be required in the Project. The inclusion of EBMUD's needs will require distribution of water to additional agricultural lands beyond those necessary to meet the needs of the ESJP. EBMUD's participation in the basin must not directly or indirectly impair providing for, or increase the cost of, meeting the water needs of the ESJP.

16. The conjunctive use study and joint plans for the Project shall not use land fallowing or other irrigation curtailment except reasonable conservation to develop water supply.

17. Costs shall be allocated in an equitable manner.

18. It is understood that the project may require further review under the California Environmental Quality Act (CEQA). If CEQA

review is found to be necessary for the project it will be pursued jointly.

19. If a favorable court ruling, allowing the use of EBMUD American River Contract water in a conjunctive use project utilizing American River and Mokelumne River water and the Eastern San Joaquin County groundwater basin, is not received within a mutually agreeable time of an agreement for conjunctive use between EBMUD and the ESJP, and if an alternate supply is not identified, then the agreement shall terminate.

20. These Principles are established under the assumption the groundwater basin will have sufficient capacity to store the amount of water needed by the ESJP and EBMUD.

21. Governance/Finance

21A. The current Policy and Technical Committees of the ESJP will recommend creation of an appropriate organization for the purposes of governance and finance of the ESJP share of the Project.

21B. In selecting the type of agency or organization to be created, the ESJP will enter into discussions on form weighing the factors of ease of implementation, taxing/assessment authority, degree of administrative efficiency upon formation, and boundary issues in making their decision.

21C. The governing board of the proposed agency will be comprised of members appointed by the East San Joaquin member parties. Each member party will appoint at least one representative to the governing board. Additional representation will be apportioned through the benefits to, and burdens on, the respective member parties. Members of the governing board shall be elected officials of the respective member parties.

22. Until such organization is formed, the present Policy and Technical Committees of the ESJP will take such actions as necessary to continue moving forward with the Project.

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THOMAS J. SHEPHARD, SR.

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March 10, 1997

George L. Barber, Chair
East San Joaquin Parties Water Authority
c/o San Joaquin County Board of Supervisors
Courthouse, Room 701
222 E. Weber Avenue
Stockton, CA 95202

Re: Conjunctive use - Legal Issues

Dear George:

With respect to any plan for the storage of water in the Eastern San Joaquin County Ground Water Basin and the export of some of that water from the Basin to the East Bay Area during dry years, or in the event of an emergency, there are a number of statutory provisions with which a project of that nature must comply. The following are the legal conclusions and recommendation of Mr. Michael McGrew, Assistant County Counsel, and the undersigned.

California Water Code Section 1220

The area that is normally termed the Eastern San Joaquin County Ground Water Basin is most but not all of the Delta-Central Sierra Ground Water Basin which term is used in governing statutes, and particularly Section 1220 of the Water Code. The Delta-Central Sierra Basin includes Eastern San Joaquin County extending from the Sacramento County Line to the Stanislaus River. It also includes the "triangle" portion of Stanislaus County, that is the Area east of San Joaquin County and north of the Stanislaus River. The Delta-Central Sierra Basin also appears to include very small sections of Amador, Calaveras, and Sacramento Counties.

The Eastern San Joaquin Groundwater Basin as it is now thought of by the East San Joaquin Parties Water Authority, includes only territory in San Joaquin County and excludes the area in San Joaquin County south of the

northern boundary of the South San Joaquin Irrigation District and also excludes the "dry land" area in the Eastern most part of the County. It should be noted that the eastern "dry land" area is getting smaller as more and more plantings of grapes are occurring in areas that were formerly unirrigated grazing land.

Section 1220 prohibits the pumping and exporting of ground water from the combined Sacramento and Delta-Sierra basins unless the pumping is done in compliance with a Ground Water Management Plan (GWMP) which has been adopted by ordinance by the county board of supervisors,in full consultation with affected water districts and that is approved by a vote of the counties or portions of the counties that overlie the ground water basin.

Section 1220 also says notwithstanding any other provision of law a county board of supervisors whose county contains part of the Delta-Sierra Basin may adopt GWMPs to implement the purposes of this plan. Generally, procedures for developing and adopting GWMPs are contained in Water Code sections 10753 et seq. (adopted by Assembly Bill 3030). Section 1220 appears to authorize the adoption of a GWMP without being subject to, or affected by, any other provision of law, including sections 10753 et seq. There is no legal authority to assist in interpreting whether this is what was intended by the legislature. The statute does not tell us if the GWMP required to be adopted by the Board of Supervisors is what is commonly called a "3030" plan or whether it is some other plan. As we understand it, most, but not all of the water agencies in overlying Eastern San Joaquin County Ground Water Basin have adopted "3030" Plans. A plan has not been adopted for the substantial area not within a local water agency and the plans have not been coordinated into a single plan which could be adopted by the Board of Supervisors. It would appear, however, that 1220 contemplates one plan adopted by the Board of Supervisors.

Section 1220 also contains a provision stating that a board of supervisors shall not exercise the powers authorized by section 1220 within the boundaries of another local agency that supplies water to that area without the approval of said local agency. If we apply this to any ESJP/EBMUD plan, it would mean that any one of the local water agencies which contain even a small portion of the basin or supply only a small amount of water within it, could in effect veto the entire project. While approval of the export of water generally may be a matter of great importance to a district, when we consider the project as

a whole will benefit the entire region by replenishing the basin, and that the water exported will be that which was pumped into the basin pursuant to the conjunctive use agreement, this would be an unacceptable result that most likely was not foreseen or intended by the legislature. In the present situation approval would be required by even the very small water distributing agencies which have not been a part of the project planning and by South San Joaquin and Oakdale Irrigation Districts which again have not been a part of the planning. Finally, we are left with the open question of whether the water agencies responsible for the small portion of Stanislaus County and the very small portions of Amador, Calaveras, and Sacramento Counties which are in the Delta-Central Sierra Basin must approve. The legislation seems to require that difficult task.

California Water Code section 1011.5.

A water user in a conjunctive use project needs to be assured that during the years in which it reclaims water that it has stored in a basin, it will not be relinquishing it's right to the surface water that it would otherwise use. This section is designed to protect the appropriative rights to unused surface water when ground water supplies are used instead of surface water pursuant to a conjunctive use program. Section 1011.5 is of state-wide application but until the year 2007 contains special "Eastern San Joaquin County Basin" provisions and it is those provisions to which we refer in this discussion. A substitution of ground water for surface water will be protected only if, among numerous other requirements, the extraction of the ground water substitute is from the Eastern San Joaquin County Basin and the conjunctive use program is in accordance with a local GWMP that has been approved by each water agency overlying the contemplated points of extraction and each agency that will benefit from the GWMP.

Additionally, 1011.5 states that to qualify, a conjunctive use program must be operated in accordance with a GWMP that complies with the requirements of section 1011.5. The problem is that it does not make clear whether such a GWMP must also comply with the general requirements for an overall GWMP at sections 10753 et seq. (a "3030 plan). This is the same ambiguity contained in section 1220.

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San Joaquin County Ordinance No. 3879.

San Joaquin County Ordinance No. 3879, enacted by the board of supervisors prohibits the pumping of ground water underlying the county, for use outside of the county, without first obtaining a permit. Any ESJP/EBMUD project will need to obtain a permit under the ordinance to reclaim and export the water which has been stored in the basin. Obtaining a permit is not seen as a difficulty since the project will have the agreement in advance of the East San Joaquin Parties including the County prior to even seeking a permit. The ordinance is now effective for wells and facilities located in the unincorporated area. The ordinance is not effective in the incorporated cities unless it is adopted by the cities. It is our understanding that none of the San Joaquin County cities, including Stockton and Lodi in the Eastern San Joaquin County Ground Water Basin have adopted the ordinance. A permit under the ordinance is one element needed to complete the project. It has been thought by some that the ordinance could constitute a GWMP to satisfy at least 1220 and perhaps 1011.5, if the ordinance is adopted by all agencies and is then approved by the voters. It is not clear to us, however, that the ordinance does qualify as a GWMP for purposes of 1220 or 1011.5. The question also arises as to where is the "basin" that must vote approval. The answer is unclear due to the ambiguity found in the statutes.

It should also be noted that section 1220 requires a vote of the citizens above the Delta-Central Sierra Basin in order to approve the relevant GWMP and hence the pumping and export of water, while section 1011.5 requires only approval by the affected local water agencies within the Eastern San Joaquin Ground Water Basin of the relevant GWMP to preserve appropriative rights and implement a conjunctive use program. Which type of a vote or approval is necessary for a conjunctive use program which incorporates pumping and the export of ground water to the party who stored it in the basin initially? That cannot be clearly answered. The only case law on the entire subject is a case involving a Tehama County extraction ordinance and that case dealt with other aspects of the issue.

Proposition 218

It is expected that an ESJP/EBMUD plan will require a new source of revenue within the ESJP area to finance its portion of capital and operating

costs for a joint project. We have always understood that at least most of the ESJP policy makers feel that whether required by law or not, any project should have the approval of a majority of the voters in the area to be charged and benefited. There are a number of possibilities for developing funds. A ground water assessment, a Water Conservation Zone assessment through the County-Wide District, or other charges or assessments on land or water use. As you know, the amendment to the Constitution of the State of California brought about by the passage of Proposition 218 has placed significant restrictions, both substantive and procedural, on the imposition of any new tax, assessment, fee or charge within California. There is also some amount of controversy as to the meaning and effect of certain elements of Proposition 218.

In particular with regard to whether charges relating to water are property related fees and charges which are addressed in section 6 of the Proposition, or are to be characterized as assessments which are covered by section 4. The procedures required by these two sections are substantially different and it is unfortunately not clear which was intended to apply to water charges. The proposition defines fees and charges as those imposed as an incidence of property ownership. Generally, prior to enactment of Proposition 218 it was believed that water services were not property related, but rather were consumable in the same manner as electric or gas service. However, because the Proposition specifically excepts sewer, water, and refuse collection from the group of property related charges which must be subject to the additional requirement of a majority approval of those subject to the charge, it has been suggested that the Proposition intends to put water service charges into the general category of property related services.

In addition section 5 of Proposition 218 directs that the Proposition shall be liberally construed to limit local government revenue and enhance taxpayer consent. This issue will most likely ultimately be decided by subsequent implementing legislation or litigation. The implementing legislation is now being prepared for introduction. We have had the opportunity to review an early draft of the legislation. The legislation, will however, undoubtedly undergo many changes prior to its adoption. Given these considerations, and in light of the uncertainty involved, the most conservative assumption is that a new charge on pumping of ground water will be deemed property related and hence will need to follow the procedures laid out in section 6 of the Proposition. We do believe, however, that there are several revenue

measures which could be implemented for the project which would require a majority rather than a two/thirds vote.

Discussion

If we interpret the statutes in the most conservative way and attempt to comply with each of the statutes that apply to the corresponding elements of the overall project it would mean a piece meal approach to the approval process. More importantly, there is also uncertainty as you can see by our discussion above. In essence, what we have is a collection of requirements that were each enacted to address a number of separate concerns which subsequently happen to also be applicable to a single project.

Besides the apparent inconsistencies and ambiguities in the relevant regulations, if we are to take each statute as written, then it appears that a single local agency within the basin can in effect veto the entire project by simply failing to approve a portion of the overall project. It also appears that if we are required to take a vote of all of the people who live above the basin, rather than or in addition to a vote of those within the proposed area to be assessed it would not be fair. Where the vote must be conducted is also a somewhat open question.

Conclusion

Given the above concerns and uncertainties, we suggest that the best approach would be to first devise the details of a project, how it should be approved, how it should be financed, and other details as may be appropriate. When that is done, we would then suggest that a statute be drafted which would provide the intended protections of sections 1220 and 1011.5 and would provide for the financing authority in a manner that complies with Proposition 218. Such legislation would be drafted to affect only the area to bear the cost of the project. This would take some time but it would eliminate the uncertainties and the involvement of areas that are not a part of the project. If all of the major water entities in the area involved and the EBMUD supported the legislation and if the legislation required a majority vote to institute the project and impose any assessments or charges, we believe passage of the legislation could be achieved.

We hope the foregoing will be of help to you. If you have any questions, please let us know.

Very truly yours,

THOMAS J. SHEPHARD, SR.
Attorney-at-Law

TJS:ect
cc: Each Member of the E.S.J.P. Water Authority
Each Member of the E.S.J.P. Technical Committee
Each Member of the Board of Supervisors

75850-1

SAN JOAQUIN COUNTY
FLOOD CONTROL & WATER CONSERVATION DISTRICT
P. O. BOX 1810
1810 EAST HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201
TELEPHONE (209) 468-3000
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MANUEL LOPEZ
DIRECTOR OF PUBLIC WORKS
FLOOD CONTROL ENGINEER

June 7, 2000

MEMORANDUM

TO: Attendees at Advisory Water Commission Special Meetings

FROM: John W. Pulver
Water Resources Coordinator

SUBJECT: GROUNDWATER EXPORT ORDINANCE

Following is a copy of the latest edition of the Groundwater Export Ordinance. The Ordinance will be considered during the continued Public Hearing **at 1:30 p.m.** on **Tuesday, June 13, 2000,** in the Board chambers.

JWP:to
GRNWTR\EXP-ORD\JUN-MAIL.MEM

BEFORE THE BOARD OF SUPERVISORS OF THE COUNTY OF SAN JOAQUIN
STATE OF CALIFORNIA

ORDINANCE NO. _____

AN ORDINANCE AMENDING DIVISION 8 TO TITLE 5 OF THE ORDINANCE CODE OF SAN JOAQUIN COUNTY REGARDING THE EXTRACTION AND EXPORTATION OF GROUNDWATER FROM SAN JOAQUIN COUNTY

- - - - -

The Board of Supervisors of the County of San Joaquin, State of California, ordains as follows:

SECTION 1. Division 8 (commencing with Section 5-8100) of Title 5 of the Ordinance Code of San Joaquin County is amended to read as follows:

CHAPTER 1

DECLARATION OF FINDINGS AND PURPOSE

SECTION 5-8100. REGULATION OF THE EXTRACTION AND EXPORTATION OF GROUNDWATER FROM SAN JOAQUIN COUNTY.

The Board hereby finds and declares:

(a) The groundwater underlying San Joaquin County has historically provided the people and lands of San Joaquin County with water for agricultural, domestic, municipal, and other purposes.

(b) The Board recognizes the principle developed in the case law of California that water may be appropriated from a groundwater basin if the groundwater supply is surplus and exceeds the reasonable and beneficial needs of overlying users.

(c) It is essential for the protection of the health, welfare, and safety of the residents of the County, and the public benefit of the State, that groundwater resource of San Joaquin County be protected from harm resulting from the extraction of groundwater for use on lands outside the County, until such time as needed additional surface water supplies are obtained for use on lands of the County, or overdrafting is alleviated, to the satisfaction of the Board.

(d) Much of the farm production of the County depends upon the use of groundwater to produce grapes, nuts, fruit, and vegetable crops which significantly contribute to the gross value of all agricultural crops produced in the County, estimated at over one billion three hundred million dollars ($1,300,000,000) for 1998.

(e) The groundwater of San Joaquin County also provides water to several communities in the County, particularly to the cities of Lodi, Stockton, Manteca, Lathrop, Escalon, Ripon, and Tracy, which rely almost exclusively on San Joaquin County groundwater.

(f) The groundwater of San Joaquin County will be a vital part of future water use in the County. The present population of the eastern portion of the County is nearly four hundred thousand (400,000) and is conservatively projected to increase by the year 2020 to six hundred fifty-five thousand (655,000). Groundwater resources will serve as an important source of water supply for this increased population. The population of the southwestern portion of the County is projected to significantly increase by the year 2020. As the water needs per acre of agriculture and urban areas are approximately equivalent for this region, and virtually all of the non-urban area is in irrigated agriculture, the consumptive demands on the groundwater lying beneath the southwestern portion of the County will remain essentially the same.

(g) Much of the groundwater lying beneath the Sacramento/San Joaquin Delta is saline; however, there are numerous wells producing fresh water which may be a part of the aquifers underlying the eastern portion of the County.

(h) Surface water supplies obtained in the future will be used conjunctively with groundwater. That is, surface water will be diverted in times of relatively high flows and groundwater will be used during dry periods when surface water is not readily available. In this regard, the greatest readily and economically available asset the County has in dealing with its water needs is its groundwater. Loss of the use of the groundwater in the eastern portion of the County would result in additional surface water needs of as much as one million (1,000,000) acre feet per year. Loss of the use of the groundwater in the southwestern portion of the County could also result in dramatic needs for additional surface water. It is vital that the groundwater resources be protected so that its capacity will be available for future conjunctive use.

(i) The California Department of Water Resources in Bulletin 118-80 identified the groundwater underlying the eastern portion of the County as "subject to critical conditions of overdraft." A basin is subject to critical conditions of overdraft, according to Bulletin 118-80, when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts. However, though portions of the groundwater underlying the County are subject to critical conditions of overdraft, the adverse impacts do not necessarily occur throughout the entire County, according to Bulletin 118-80. In fact, water levels may be rising in one portion of the County.

(j) A 1985 study conducted by the engineering firm of Brown & Caldwell, under the sponsorship of state, federal and local agencies, confirmed that serious overdrafting of the groundwater underlying the eastern portion of the County was occurring. The study found that if the County does not obtain additional supplemental water, by the year 2020 overdraft would result in a 1.9 foot drop per year in the regional water level and that the groundwater elevations in areas east of Stockton would be one hundred sixty (160) feet below sea level, or about one hundred (100) feet lower than then existing levels. The study

also predicted that an ancient saline front would advance eastward under the City of Stockton by a distance of 1.3 to 2.3 miles by the year 2020.

(k) Existing conditions tend to confirm the forecasts of Brown & Caldwell. According to the Fall 1993 Groundwater Report of the San Joaquin County Flood Control and Water Conservation District, the saline front underlying the City of Stockton has encroached further eastward under the City and the groundwater underlying a portion of the eastern part of the County has experienced decreases in water quality, despite the high levels of precipitation during the winter of 1992-93.

(l) Based on the Brown & Caldwell report, it has been concluded that an additional two hundred seventy thousand (270,000) acre feet of supplemental surface water per year is needed to achieve a balanced use of both surface and groundwater for the eastern portion of the County. The County and other public agencies in the County have worked with federal, state, and other agencies to attempt to secure this needed supplemental surface water in order to relieve or alleviate the burden placed on the groundwater lying beneath the eastern portion of the County.

(m) The County recognizes that effective conjunctive use of groundwater and surface water could reduce the groundwater overdraft in the County. Conjunctive use projects, including storage of surface water in the groundwater basin, are being investigated and pursued by the County and other public agencies within the County. The County encourages development of conjunctive use projects that would positively impact the critically overdrafted groundwater basin.

(n) The County seeks to foster prudent water management practices to avoid significant adverse overdraft-related environmental, social, and economic impacts. It is therefore essential for the protection of the County's important groundwater resources that the County require a permit to extract groundwater for use outside the County. This division requires a permit for the export of groundwater outside the County and is not intended to regulate groundwater in any other way.

(o) In adopting this division, the County in no way intends to limit either the County or other public entities to manage the groundwater in accordance with the Groundwater Management Act and any other applicable laws.

CHAPTER 2

DEFINITIONS

SECTION 5-8200. DEFINITIONS.

(a) "Aquifer" means a geologic formation that stores, transmits and yields significant quantities of water to wells and springs.

(b) "Board" means the Board of Supervisors of San Joaquin County.

(c) "Commission" means the Advisory Water Commission of the San Joaquin County Flood Control and Water Conservation District, which is advisory to the Board.

(d) "Conjunctive use groundwater replenishment project" means a project for artificial groundwater recharge and storage through methods which include, but are not limited to, (1) direct recharge by percolation using basins, pits, ditches and furrows, modified streambed, flooding, and well injection or (2) in-lieu recharge. In-lieu recharge means accomplishing increased storage of groundwater by providing surface water to a user who relies on groundwater as a primary supply, to accomplish groundwater storage through the direct use of that surface water in lieu of pumping.

(e) "Consumptive use" means water consumed by vegetative growth in transpiration and building plant tissue and water evaporated from adjacent soil, from water surfaces and from foliage. It also includes water similarly consumed and evaporated by urban and non-vegetative types of land use.

(f) "County" means the County of San Joaquin.

(g) "Director" means the Director of Public Works of the County or designee.

(h) "District" means a public entity wholly or in part located within the boundaries of the County, which is a purveyor of water for agricultural, domestic, or municipal use, or is an irrigation district.

(i) "Groundwater" means all water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water, but does not include water that flows in known and definite channels.

(j) "Groundwater Management Act" means Water Code Section 10750 et seq.

(k) "Hydraulic gradient" means the slope of the water table.

(l) "Hydrology" means the origin, distribution, and circulation of water through precipitation, stream flow, infiltration, groundwater storage, and evaporation.

(m) "Land subsidence" means the lowering of the land surface in elevation.

(n) "Overdraft" means the condition of a groundwater supply in which the amount of water withdrawn by pumping exceeds the amount of water replenishing the supply over a period of time and also the point at which extractions from the supply exceed its safe yield plus any temporary surplus.

(o) "Percolation" means the movement of water through the soil to the groundwater table.

(p) "Permeability" means the capability of the soil or another geologic formation to transmit water.

(q) "Piezometric surface" means the surface to which the water in a confined aquifer will rise.

(r) "Porosity" means voids or open spaces in alluvium and rocks that can be filled with water.

(s) "Recharge" means flow to groundwater storage from precipitation, irrigation, infiltration from streams, spreading basins and other sources of water.

(t) "Safe yield" means the maximum quantity of water, which can be withdrawn annually from a groundwater supply under a given set of conditions without causing overdraft or adverse water quality conditions.

(u) "Saline intrusion" means the movement of salt water into fresh water aquifers.

(v) "Specific capacity" means the volume of water pumped from a well in gallons per minute per foot of drawdown.

(w) "Spreading water" means discharging native or imported water to a permeable area for the purpose of allowing it to percolate to the zone of saturation.

(x) "Static water level" means the level at which water stands in a well when no water is being removed from the aquifer by pumping or free flow within 24 hours. It is generally expressed as the distance from the ground surface to the water level in the well.

(y) "Transmissivity" means the rate of flow of water through an aquifer.

(z) "Usable storage capacity" means the quantity of groundwater of acceptable quality that can be economically withdrawn from storage.

(aa) "Usable groundwater" means groundwater of acceptable quality that can economically be withdrawn by the user without adverse impacts.

(bb) "Water table" means the surface or level where groundwater is encountered in a well in an unconfined aquifer.

(cc) "Water year" means the year beginning March 1st and ending the last day of the following February.

(dd) "Zone of saturation" means the area below the water table in which the soil is completely saturated with groundwater.

CHAPTER 3

PERMIT PROCESS

SECTION 5-8300. PERMIT REQUIRED FOR EXPORT FOR USE OUTSIDE COUNTY.

It shall be unlawful to extract groundwater underlying County, directly or indirectly, for use of that groundwater so extracted, outside County boundaries, without first obtaining a permit as provided in this division.

This division shall not apply to the extraction of groundwater (1) to prevent the flooding of lands, or (2) to prevent the saturation of the root zone of farm land, or (3) for use within the boundaries of either a District or a contiguous parcel of any property owner which is in part located within County and in part in another County(s) where such extraction quantities and use are consistent with historical practices of the District or the property owner, or (4) for extractions to boost heads for facilities operated by the groundwater extractor, consistent with historical practices of the extractor. The groundwater extractor shall have the burden of supporting an assertion of an historical practice with competent evidence.

This division shall not apply to the incidental discharge of drainage and or sewage effluent where the discharge was neither for the purpose of serving other water uses nor for compensation, for usage outside County boundaries.

SECTION 5-8310. APPLICATION FOR A PERMIT.

(a) An application for a permit shall be filed with the Director on forms provided by the Director and shall contain all information required by the Director. Concurrently, a request for environmental review shall be filed as required by applicable County guidelines. The application for a permit and request for environmental review shall be accompanied by the fees which shall be established from time to time by the Board.

(b) An application for a permit shall be accompanied by a report prepared at the applicant's expense by a California Registered Civil Engineer or Certified Hydrogeologist with experience in geologic and hydrologic testing. The information provided in the application should provide information necessary to support the required findings and to establish appropriate conditions. The report must provide the following information:

(1) The location of the proposed project for extraction of groundwater for use outside County boundaries;

(2) The design of the project, the term of the project, and a description of the method of extraction and artificial recharge, if applicable;

(3) The quantity of water to be exported, artificially recharged and extracted on an annual basis and over the length of the entire project;

(4) The amount of the maximum monthly rate of export, artificial recharge and extraction;

(5) The location, size, spacing and depths of all extraction wells and any injection wells;

(6) A description of the monitoring plan and the location of the monitoring wells to measure groundwater levels and to evaluate gradient, flow direction, and water quality;

(7) If the application is not a conjunctive use groundwater replenishment project, the amount of historical consumptive use of water and historical applied water on the parcel, including historical evidence of cultivation and water usage of the parcel together with the water needs of the crops upon and/or water usage of the parcel;

(8) A hydrograph of water levels of representative wells in the surrounding area extending two miles from the boundary of the project, including the area of the project, for the previous twenty (20) years;

(9) If the application is part of a conjunctive use groundwater replenishment project the report must include the following information regarding the net addition to useable groundwater: (a) the portion of the groundwater basin affected by the project; (b) the rate of artificial recharge and the average annual net artificial recharge; (c) the rate and direction of groundwater migration; (d) the inflow into the portion of the basin affected by the project, both with and without the project; (e) the projected change in storage resulting from project operations on an annual basis and during the entire project; and (f) the quality of water to be injected, percolated or otherwise replenished,

supported with the results of current water quality tests of the proposed source waters; and

(10) Such other matters as the Director may require.

SECTION 5-8315. CONTRACT REQUIREMENT.

(a) The requirements of this Section shall apply to any application that is part of a conjunctive use groundwater replenishment project wherein either the groundwater recharge or groundwater extraction is proposed to be located wholly or partially within the boundaries of a District.

(b) Prior to submitting an application pursuant to Section 5-8310 of this Division, the applicant shall apply in writing to all Districts wherein either the groundwater recharge or groundwater extraction is proposed to be located wholly or partially, to enter into a contract to operate a conjunctive use groundwater replenishment project.

(c) Within thirty (30) days of the submittal, the District must enter into good faith negotiations with the applicant in an attempt to enter into a contract for a conjunctive use groundwater replenishment project. The contract should include the information required to be submitted to the Director pursuant to Section 5-8310.

(d) Any contract entered into between a District and an applicant shall be conditioned upon receipt of a permit pursuant to this Division. Upon successful completion and execution of such contract, the District and the applicant may apply for a permit pursuant to Section 5-8310.

SECTION 5-8320. PROCEDURES FOR PROCESSING.

(a) Within ten (10) calendar days of filing of the permit application, the Director shall post a notice on the Department of Public Works public bulletin board that an application has been filed, shall send a copy of the notice to the Districts and cities within the County which have lands overlying or adjacent to the location of the extractions, to all landowners, as shown on the latest tax roll, within two miles of the proposed extractions, and to any interested party who has made a written request to the Director for such notice within the last twelve (12) calendar months. The Director shall review the application to determine whether it is complete for purposes of proceeding under the County guidelines adopted pursuant to the California Environmental Quality Act requirements.

(b) The Director may review the matter of the application with the affected County departments, with the staff of the State Department of Water Resources, with the staff of the Regional Water Quality Control Board — Central Valley Region, and with any interested local water agency within whose boundary the proposed activity will occur. If the applicant is applying to pump groundwater from a District, city, or the unincorporated territory in which a groundwater management plan has been adopted pursuant to the Groundwater Management Act, the Director shall consider a groundwater management plan or any other relevant information provided by a District, city, or other local agency. Any interested person or agency may provide comments relevant to the matter of the extraction of

groundwater. Comments shall be submitted within thirty (30) days of the date of mailing the notice of filing the permit application.

(c) The environmental review shall be undertaken in accordance with the California Environmental Quality Act and County guidelines. All costs of the environmental review shall be the responsibility of the applicant.

(d) Upon completion of the environmental review, the Director may take one of the following actions: (1) approve the application without public hearing if the Director determines that the application meets the procedural requirements set forth in this section for Board approval and has not received written objections from any person or entity receiving notice to issuance of the permit, or (2) forward the application together with any written comments received, environmental documentation, and the Director's recommendation, to the Board. Upon receipt of the Director's recommendation, the Board shall immediately set a public review on the issuance of the permit which shall be noticed pursuant to Government Code Section 6061 and may not be held within fifteen (15) days of the time that the Board received the recommendation from the Director.

SECTION 5-8330. PUBLIC REVIEW CONCERNING ISSUANCE OF PERMIT.

Formal rules of evidences shall not apply to the public review of the application, but the Board may establish such rules as will enable the expeditious presentation of the matter and relevant information thereof. At the Board review, the applicant shall be entitled to present any oral or documentary evidence relevant to the application, and the applicant shall have the burden of proof of establishing the facts necessary for the Board to make the required findings. The Board may request any additional information it deems necessary for its decision, the cost of which, if any, shall be borne by the applicant. The Board shall also hear relevant evidence presented by other interested persons and entities, the Director, other County staff, and the public. The Board shall consider all effects that the granting of the permit application would have on the affected aquifer including, but not limited to, the hydraulic gradient, hydrology, land subsidence, percolation, permeability, piezometric surface, porosity, recharge, safe yield, saline intrusion, specific capacity, spreading water, transmissivity, usable storage capacity, usable groundwater, water table and zone of saturation.

SECTION 5-8335. FINDINGS FOR GRANTING OF PERMIT.

The permit may only be granted if the Board finds and determines that the extraction will not cause or increase an overdraft of the groundwater underlying the County, will not bring about or increase saline intrusion, will not unreasonably degrade the quality of the groundwater underlying the County, will not adversely affect the long-term ability for storage or transmission of groundwaters within the aquifer, will not exceed the safe yield of the groundwater basin underlying the County and will not otherwise operate to the injury of

the reasonable and beneficial uses of overlying groundwater users or of any municipality or utility which is a water purveyor which includes groundwater, is otherwise in compliance with Water Code Section 1220, will not result in an injury to a water replenishment, storage, or restoration project operating in accordance with statutory authorization, will not cause or contribute to land subsidence, or if part of a conjunctive use groundwater replenishment project, the extraction of water is from those areas projected to contain the replenishment water at the time of the extraction. The Board may issue the permit if the Board finds that the applicant has provided for mitigation which will offset any adverse effect that is determined to exist.

SECTION 5-8340. CONDITIONS FOR GRANTING OF PERMIT.

(a) If the permit is granted the Board shall impose appropriate conditions upon the permit so as to prohibit or mitigate overdraft or other adverse conditions as set forth in this Section. The mitigation measures within this Section shall not limit the requirements of the California Environmental Quality Act.

(b) The Board shall impose a requirement for at least three monitoring wells. The Board shall approve the number and location of the monitoring wells.

(c) The Board shall impose a condition limiting or prohibiting the amount of water approved for exportation as follows.

(1) If the extraction is part of a conjunctive use groundwater replenishment project the amount of water approved for exportation is limited to an amount that provides that the project will result in a net addition to usable groundwater underlying the project. The evaluation of net addition to useable groundwater will be based on the difference in groundwater storage resulting from the project.

(2) All other permits shall limit or prohibit the amount of water approved for exportation so that the combined extraction of water from applicant's parcel for exportation and use of water on the overlying parcel does not exceed historical consumptive use of water per acre of the parcel. In determining the amount of historical consumptive use of water per acre of the parcel, applicant shall provide historical evidence of cultivation and water usage of the parcel together with the water needs of the crops upon the parcel and/or water usage of the parcel. Public utilities, Districts, or cities which currently act as water purveyors for multiple parcels may include in the calculation the historical consumptive use of water on all parcels within the boundaries of the jurisdiction of the public utility, District, or city.

(d) The Board may impose conditions to regulate the manner of extraction to maintain or improve preproject water quality, to prevent significant decreases in water levels, and to determine the rate of water migration of project water. The conditions may include the following:

(1) appropriate spacing of extraction wells, based on the total amount of water approved for extraction;

(2) providing buffer areas between extraction wells and neighboring overlying users;

(3) limiting the monthly seasonal, and/or annual extraction rate;

(4) providing sufficient recovery wells to allow rotation of extraction wells or the use of alternate wells, if necessary;

(5) adjusting pumping rates or terminating pumping to reduce impacts, if necessary;

(6) imposing time restrictions between recharge, extraction, and/or injection to allow for downward percolation of water to the aquifer;

(7) providing recharge of water that would otherwise not recharge the Basin; and,

(8) requiring a reasonable relationship between the points of extraction and the points of injection or recharge.

(e) The projected minimum operating levels for the project monitoring wells will be established by the applicant and approved by the Board. If the water levels in any of the approved monitoring wells decline by more than five feet from the minimum approved operating level, the project extraction well causing this threshold exceedance shall be shut down for evaluation. The Monitoring Committee shall make a recommendation to the Board for continued operation based on the results of the evaluation.

(f) The project shall not create conditions that are worse than those that would have existed absent the project, unless mitigated. In lieu of mitigation affected overlying users may be compensated, with the overlying user's consent, for unavoidable adverse impacts, including but not limited to the following:

(1) the cost of lowering the pump bowls or deepening wells as necessary to restore groundwater extraction capability to such overlying user;

(2) the cost of providing alternative water supplies to such overlying user; and/or,

(3) providing financial compensation to such overlying user.

(g) The Board shall limit accounting for migration losses of a conjunctive use groundwater replenishment project to a minimum of 5% loss per annum. The Board shall have the discretion to condition the permit based on a higher loss rate.

(h) The Board shall impose a condition establishing monitoring requirements and reports by the Monitoring Committee consistent with Section 5-8345.

(i) The Board may impose other conditions that it deems necessary for the health, safety and welfare of the people of the County.

SECTION 5-8345. MONITORING COMMITTEE.

(a) If a permit is granted, the Board shall establish a five member Monitoring Committee whose members shall be appointed by the Board. The Monitoring Committee shall include the Director or the Director's designee; the Director of Environmental Health Division, San Joaquin County, Public Health Services, or designee; the permittee; a representative of the local agency that provides water service within the project; and a representative of the landowners owning land within two miles of the location of the proposed project.

(b) The Monitoring Committee may engage the services of suitable professional groundwater specialist to provide assistance to the Monitoring Committee.

(c) It shall be the duty of the Monitoring Committee at least annually, and upon receipt of a complaint regarding operation of the project, to review relevant facts and information and if necessary to recommend to the Board whether or not the project is operating within the terms and conditions of the permit issued for the project, whether or not the project is operating inconsistent with a required finding, and/or whether or not the project is operating to the injury of any party.

(d) The Monitoring Committee will maintain official records of recharge and recovery activities, which records shall be open and available to the public. The Monitoring Committee will have the right to verify the accuracy of reported information by inspection, observation or access to user records (i.e. utility bills).

(e) In response to complaints, the Monitoring Committee may establish criteria necessary to determine if well interference, other than insignificant interference, is attributable to pumping of project wells by conducting pumping tests of project wells following the installation of monitoring wells and considering hydrogeologic information.

(f) The Monitoring Committee may make recommendations to the Board and project permittee including, without limitation recommendations for modifications in project operations based upon evaluation of data.

(g) The cost of the Monitoring Committee shall be paid as follows:

(1) Each of the parties shall be responsible for the personnel costs of its representative on the Monitoring Committee, and for the time spent by those personnel in participation on the Monitoring Committee.

(2) All other groundwater monitoring costs, including employment of the professional groundwater specialist, collection, evaluation and analysis of data as adopted by the Monitoring Committee, shall be allocated among and borne by the permittee.

(3) The costs of the Monitoring Committee set forth in paragraph (2) above shall be estimated by the Monitoring Committee at the beginning of each year of operation of the project, and a budget submitted to the Board. Should the permittee object to the budget, the issue shall be submitted to arbitration before a single neutral arbitrator appointed by the Monitoring Committee. In the absence of agreement of the Monitoring Committee, the presiding judge of the San Joaquin County Superior Court shall appoint the

arbitrator. The neutral arbitrator shall be a California Registered Civil Engineer or Certified Hydrogeologist, with experience in geologic or hydrologic testing. The arbitration shall be called and conducted in accordance with the procedures set forth in California Code of Civil Procedure, §1282 et seq..

(h) All disputes regarding any condition or the operation of the project shall first be submitted by any party in writing to the Monitoring Committee for review and recommendation. The written request shall generally describe the request and the supporting facts. The Monitoring Committee shall meet and review all relevant data and facts, and recommend a fair and equitable resolution of the dispute.

(i) All actions and recommendations of the Monitoring Committee shall be by a supermajority vote of the members of the Monitoring Committee.

SECTION 5-8350. REAPPLICATION AFTER DENIAL.

Reapplication for a permit which has been denied may not be filed with the Director until the following water year unless denied without prejudice and must be accompanied with information that demonstrates a significant change in conditions in the groundwater and/or change in the proposed extraction.

SECTION 5-8360. DELETED.

SECTION 5-8370. CHALLENGE TO APPROVED PERMIT.

(a) Any interested party or public entity may challenge the continuation of the approved Permit during the term of the permit when information exists that: (1) there is a violation of the conditions of the permit; or (2) circumstances have changed or the project is operated in such a manner so that the findings specified in Section 5-8335 of this Division are no longer supportable.

(b) Before a challenge may be filed pursuant to this section the grounds for the challenge must first be submitted to the Monitoring Committee pursuant to section 5-8345 for review and recommendation by the Monitoring Committee. In the event that the Monitoring Committee fails to make a recommendation within sixty (60) days the challenge will be deemed rejected by the Monitoring Committee and the party may submit a challenge to the Board pursuant to this section.

(c) A challenge pursuant to this section is commenced by filing a written request, accompanied by the fees which shall be established from time to time by the Board, with the Director which alleges any one of the above situations and generally describes the supporting acts for such allegation. In such event, the Director shall within ten (10) days of receipt of such challenge, give notice of the challenge to the Board, the permittee, the

appellant, the Districts and cities within the County which have boundaries overlying or immediately adjacent to the location of the permitted extraction, all landowners, within two miles of the project extractions, as shown on the latest tax role, and any interested party who files a written request for such notice within the past twelve (12) months. A Board review shall be held on the matter following the procedures set out in Sections 5-8330, 5-8335, and 5-8340. The Board's decision may be to deny the challenge, grant the challenge and terminate the permit, or to establish modified conditions to the permit.

(d) The standard for review shall be substantial evidence. The burden of proof is upon the person or entity filing the challenge.

SECTION 5-8380. DURATION OF PERMIT.

All permits shall be valid for a term set by the Board, not to exceed three (3) water years from the date of the issuance of the permit, or, if the permit is for extraction as part of a conjunctive use groundwater replenishment project, the permit shall be for the term of the conjunctive use groundwater replenishment project. For purpose of calculation, the water year in which the permit is granted shall not be counted in determining the three-year time period if less than four (4) months remains in the then water year. Provided however, nothing contained in this division nor in the conditions of the permit shall be construed as to give exclusive right to groundwater to permittee nor establish a compensable right in the event that the permit is subsequently discontinued or modified by the Board after a hearing on a challenge to the permit.

SECTION 5-8390. LIMITATION OF PERMIT.

The permit process of this division is not to be construed as a grant of any right to entitlement but rather the permit evidences that the health, welfare, and safety of the residents of the County will not be harmed by the extraction and exportation of groundwater outside the County boundaries. The permit process in no way exempts, supersedes, or replaces any other provisions of Federal, State, and local laws and regulations and case law, including but not limited to Water Code Section 1220, the Groundwater Management Act, and any actions provided for in California groundwater law, well drilling and maintenance, or building permit requirements.

SECTION 5-8395 OTHER REMEDIES AS PROVIDED BY LAW

Nothing in this ordinance shall prevent any interested party from pursuing any remedy at law or equity in the event such party is damaged as a result of projects permitted hereby.

CHAPTER 4

INSPECTION

SECTION 5-8400. INSPECTION.

The Director or the Director's designee, with good cause, may at any and all reasonable times enter any and all places, property, enclosures and structures, for the purposes of making examinations and investigations to determine whether any provision of this division is being violated.

CHAPTER 5

EFFECTIVE DATE

SECTION 5-8500. EFFECTIVE DATE.

The provisions of the ordinance codified in this division shall become effective as to the unincorporated portions of the County within thirty (30) days of its passage. The provisions of the ordinance codified in this division shall become effective in the incorporated portions of the cities within San Joaquin County upon adoption of each city by an ordinance which makes the provisions of this division applicable to the incorporated area or which independently establishes an ordinance incorporating compatible provisions.

CHAPTER 6

VIOLATIONS

SECTION 5-8600. CIVIL PENALTY.

The County may elect to proceed with a civil action against a violator, including injunctive relief. Any person or entity who violates this division shall be subject to fines of up to five thousand dollars ($5,000.00) per separate violation. A person shall be deemed to have committed separate violations for each and every day or portion thereof during which any such violation is committed, continued, or permitted as well as for and each and every separate groundwater well with which any such violation is committed, continued, or permitted.

CHAPTER 7

SEVERABILITY

SECTION 5-8700. SEVERABILITY.

If any section, subsection, sentence, clause, or phrase of this division, as applied to any entity or person, is for any reason held to be illegal, invalid, unconstitutional, or outside the jurisdiction and/or the police powers of the County, as determined by any court of competent jurisdiction, such decision shall not affect the validity of the division as to other entities or persons. If any section, subsection, sentence, clause, or phrase of this division is for any reason held illegal, invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions thereof. The Board hereby declares that it would have passed this division and each section, subsection, sentence, clause, or phrase hereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared illegal, invalid, unconstitutional, or outside the jurisdiction and/or police powers of the County as to certain entities or persons.

SECTION 2. This ordinance shall be in force thirty (30) days after its passage, and prior to the expiration of fifteen (15) days from the passage thereof, shall be published once in The Record, a newspaper of general circulation published in the County of San Joaquin, State of California, with the names of the members voting for and against the same.

PASSED AND ADOPTED this _ _____ day of _____ 2000, by the following vote of the Board of Supervisors, to wit:

AYES:

NOES:

ABSENT:

ATTEST: LOIS M. SAHYOUN
Clerk of the Board of Supervisors
of the County of San Joaquin,
State of California

_____
EDWARD A. SIMAS, Chairman
of the Board of Supervisors
of the County of San Joaquin,
State of California

By_____(SEAL)
Deputy Clerk

EBMUD
The Record
Date SEPT 24 1998 Page B4

S.J. water storage opportunity lost?

Counterpoint

- S.J. Farm Bureau Federation president defends opposition to EBMUD deal
  — Saturday, Public Pulse

Stubborn, fractious San Joaquin County water interests are damming up another attempt to slake our area's ever-growing thirst.

The county's reputation for being unable to agree with itself threatens to lead outside interests to look elsewhere for partners in water-storage development, all the while looking for new ways to siphon the life-giving natural resource often found in abundance in our own back yard.

Once again, we could watch billions of gallons of water flow by on the way to the populous Bay Area or Southern California, yet not have the ability to tap into the streams ourselves for our growing urban and farm interests.

This classic San Joaquin County quandary visits us once again as a majority of narrow-minded members of the county's Advisory Water Commission let some scared farm interests block attempts to further an experiment by the mighty East Bay Municipal Utility District.

The district already pulls about 180,000 acre feet a year from the Mokelumne River and sends it on to customers in Alameda and Contra Costa counties. Years ago, San Joaquin County was invited to participate in building and benefiting from East Bay MUD's aqueducts.

No, the area said.

More recently, the district offered the county the opportunity to participate in a pilot project in which EBMUD pumps water it doesn't need right away from Pardee Reservoir into our depleted groundwater basin. (We hesitate to call any California water excess, just not properly channeled or stored.) It would ask only for up to half of it back.

That test started last December east of Lodi in cooperation with the East San Joaquin Parties Water Authority. The authority is made up of the county, Lodi, Stockton, Stockton East Water District, California Water Service Co., Central San Joaquin Water Conservation District and the North San Joaquin Water Conservation District.

The promising venture could lead to a 10-well recharge effort costing upward of $20 million.

As Assemblyman Michael Machado, D-Linden, and others have noted, the project in the long term could benefit both East Bay MUD, which needs a place to store water for drought years, and San Joaquin County, which would see its aquifer replenished, halting nasty, crop-ruining saltwater intrusion through the Delta. Higher aquifers also lower costs for drilling wells.

The project could grow into a major success if proven to be cost-effective and environmentally sound.

So comes time for part two of the test.

EBMUD sought a permit to withdraw from its underground bank up to half the water it pumped in, or about 200 acre-feet. That's not a lot. (If the project had started nearly eight years ago when first proposed, we'd have 250,000 acre-feet in the ground by now.)

The commission said no in an 11-3 vote. Dangerous precedent, it warned, sending water from one vital aquifer to another county.

We need to see community support, said Dante Nomellini, a Stockton attorney representing the Central Delta Water Agency.

That's the attitude over just a test.

On Tuesday, a dejected but still hopeful East Bay MUD ended its water injections, partly due to aqueduct maintenance, but also because there are no guarantees it can draw the water back out.

The vote, which can be appealed to the San Joaquin County Board of Supervisors, was awfully short-sighted. The potential for a long-term solution to San Joaquin's growing water needs for urban and agricultural growth was certainly worth pursuing.

Let's hope we haven't shut off the taps just yet.

EBMUD

MEDIA COVERAGE

Publication: The Record

Date: Feb 13, 2000 Page: B1

Water 'banking' reviewed

By Dogen Hannah
Record Staff Writer

San Joaquin County supervisors are taking another run at setting rules that would allow water agencies to export groundwater from the county while ensuring that the county's $1.3 billion agriculture industry isn't left thirsty.

Nearly 18 months after county water officials rejected the first — and so far only — request by an agency for a permit to "bank" groundwater in the county for export later, county staffers have proposed amendments to the ordinance.

Farmers who strongly opposed issuing a groundwater extraction and exportation permit to East Bay Municipal Utility District in late 1998 said recently that the proposed changes in the ordinance will ensure that county officials will control groundwater exports enough to ensure that farmers have water.

"What we've got is an overdrafted groundwater basin."

— **John Pulver,** water resources coordinator, San Joaquin County

"There's just a much better blueprint for how things will proceed," said Mary Hildebrand, chairwoman of the county Farm Bureau's water committee.

But Supervisor Jack Sieglock said the changes may create so many restrictions that agencies won't pursue groundwater banking projects. Sieglock represents the largely rural northern and eastern parts of the county that include many farmers and that is the site of East Bay MUD's proposed groundwater banking project near Lodi.

"We want to make sure we don't have an ordinance that cuts off our nose to spite our face," said Sieglock. "My goal is to make sure we protect San Joaquin County interests, but that we also don't have an ordinance that simply hamstrings people from being able to work with the county."

Groundwater banking could bring much-needed water to the eastern portion of the county. Groundwater levels there are dropping and will reach a crisis point if current water-management practices continue, according to state water officials.

"What we've got is an overdrafted groundwater basin," said John Pulver, the county's water resources coordinator. "So, it's good to have someone putting water in that basin."

At the time East Bay MUD's request for a permit was denied, it had stored 400 or so acre-feet of water underground in a pilot project with the East San Joaquin Parties Water Authority. The authority was formed to recharge the groundwater basin and is made up of two cities, Lodi and Stockton; the county; the Stockton East, Central San Joaquin, North San Joaquin and Woodbridge water districts; and one nonvoting member, California Water Service Co.

1 of 2

EBMUD

MEDIA COVERAGE

Publication: The Record

Date: Feb 13, 2000 Page: B5

WATER

Continued from B1

If the pilot project proves successful, East Bay MUD may expand it into a large-scale, $20 million recharge effort that would use the county's depleted underground basin to store excess flows from Pardee Reservoir.

East Bay MUD Spokesman Charles Hardy said he has not seen the proposed ordinance changes. But the agency has been working closely with county staffers who crafted the changes, Hardy and county officials said.

"We just want it to be workable," Hardy said. "We're making the (groundwater) situation better than we found it. But we have to have access to some of that water, or it makes no sense for us to be involved in the project."

So far, no agency other than East Bay MUD has expressed an interest in banking groundwater in the county, Pulver said. But that could change easily if the county sets rules that farmers and agencies can live with, he said.

The proposed changes to the ordinance generally would establish more-specific rules and some entirely new rules agencies would have to follow to get and keep a permit to export groundwater.

The changes would require an agency undertaking a groundwater banking project to provide detailed information about the project and its potential effect on groundwater levels. They also would enable the county to limit groundwater exports, create a committee to monitor groundwater banking projects and require groundwater banking projects to result in a net increase in groundwater.

"There was the simplistic idea that as long as the party was putting water in, it was safe to take it out."

— Mary Hildebrand,
chairwoman, S.J. County Farm Bureau's water committee

"There's pretty strong language in there," Hildebrand said. The changes should allay fears that agencies will be able to draw out so much water that farmers would suffer, she said.

"There was the simplistic idea that as long as the party was putting water in, it was safe to take it out," Hildebrand said. "There's too much we don't know about groundwater systems."

Supervisors are to consider adopting the amended ordinance Feb. 29.

To reach reporter Dogen Hannah, phone 546-8273 or e-mail dhannah@recordnet.com.

2 of 2

San Joaquin Farm Bureau News August 2000

What are people saying?

Efforts to draw outsiders into groundwater aquifer lacks support

The leadership of the San Joaquin Farm Bureau is increasingly concerned over the actions of a Joint Powers Authority to draw large metropolitan agencies into some scale of extraction/injection project of San Joaquin County groundwater. For this reason, the Farm Bureau's Executive Committee agreed to begin publishing the comments of elected officials and community leaders to show the true thoughts and ideas regarding this critical issue facing the community.

The Eastern San Joaquin Parties Water Authority is moving ahead with advertising to agencies that want to bring an extraction/injection groundwater program into San Joaquin County before the JPA has an opportunity to authorize such a project. Following are four questions and answers from the following elected officials and community leaders regarding this issue:

Robert Cabral, San Joaquin County Board of Supervisors
Steve Gutierrez, San Joaquin County Board of Supervisors
Susan Hitchcock, Lodi City Council
Gloria Nomura, Stockton City Council
Gary Giovanetti, Stockton City Council
Bill Stokes, Woodbridge Irrigation District Director
Bill Bechthold, SJFB Board member and past president
Duane Quaschnick, SJFB Board member
Rick Veldstra, SJFB Legislative Committee Chairman
Mary Hildebrand, SJFB Water Committee Chairman

1 Do you, as a San Joaquin County decision maker or landowner, believe it is good for this JPA to advertise around the state that we want a partner [like the Metropolitan Water District of LA or East Bay Municipal Utility District] to be able to extract groundwater from San Joaquin County based on "their" needs and not the needs of landowners in the county?

Cabral: "This is premature on their part in the sense that a permit is needed to export water. I don't see how the JPA can make a promise to extract."

Gutierrez: "We have protection with the import/export ordinance. However, we must be vigilant about this and open to finding the best ways to service all the water interests."

Hitchcock: "I'm leery of any interest that says, 'I'm not from your area, but I'm here to help you.' If an agency is local, it would be better because they'd have a stake in the groundwater situation and would work for both themselves and the area. Lodi has absolutely no rights to surface water anywhere and we'd better be a player at the water issues table."

Nomura: "No. I don't want extraction done by outside agencies. The needs of San Joaquin County should be first."

Giovanetti: "No. The problem is we've always had people on the San Joaquin River claiming water rights. We've not been treated fairly for years."

Stokes: "Anytime someone else is interested in San Joaquin County water we need to take a long, hard look at it."

Bechthold: "They're foolish for considering it. An important question that needs to be answered is: Will the county have enough money to pay for the lawsuit to get the outside agencies out? All we have to do is look at the history of the Owens Valley to see what happens when big outside agencies are involved. These outside agencies take water when they need it and they won't consider San Joaquin County's needs."

Quaschnick: "I'm afraid we'll lose our water rights."

Veldstra: "Absolutely not! In the first place, why advertise when it hasn't been decided if we can do it ourselves? Why let predatory agencies have access to our water aquifer? This would be like selling our birthright. Bringing in an outside agency is nuts!"

Hildebrand: "I haven't seen any ads yet. Water and who controls it and where it goes is a primary concern of Farm Bureau. We already have outside straws in our water: the CVP and the state water project. I'm very concerned. We've redrafted the San Joaquin County Export Ordinance and we're hoping the added protections will be adequate."

2 Do you believe it would be better for SJC to do its own groundwater recharge projects that are not based on exporting our groundwater for sale or for the purposes of another area?

Cabral: "I have no problem with extracting and exporting water if it will be a gain to the county aquifer."

Gutierrez: "Absolutely. Before we start exporting water we must be sure our water interests are secure. Anything that we do must not sacrifice what we now have."

Nomura: "Yes, we should do it ourselves to establish local control."

Giovanni: "The Army Corps of Engineers has been working on a project to do exactly that. They're looking at ponding and pooled water sites and are finding locations where water will percolate well in the area."

Stokes: "Absolutely. Our groundwater supplies should be controlled by the county or special districts within the county."

Bechthold: "There is some surplus water in the county, so why not inject it ourselves? There's a lot of water in this county that's not being used. Most water districts know about this but don't talk about it. Conservatively speaking we could put 30,000 acre feet of water into the ground every year. Injecting only is less expensive than extraction."

Quaschnick: "Whenever out-of-county bureaucracies are involved they want something in return with strings attached. Once they get access to the water it's harder to deny them."

Veldstra: "Yes! There's no reason to believe we can't do it ourselves and the general public is committed to water projects."

Hildebrand: "It's very much preferable to do it ourselves. But there's obstacles to that regarding infrastructure costs and where the additional water will come from."

3 Do these decision makers and landowners know that the ESJPWA is advertising around the state looking for a large municipal water district to join a groundwater export project from SJC?

Gutierrez: "I didn't know about it."

Nomura: "I don't think so. I haven't been fully informed about this and I didn't know that advertising of this nature was going on or was planned."

Giovanni: "No."

Stokes: "No. I haven't heard anything about this."

Bechthold: "They sure ought to know!"

Veldstra: "Of course they know! They're looking for someone with deep pockets because they think it's the easiest way out."

Hildebrand: "I don't know if our (Farm Bureau) members are even aware of it."

4 Do you believe landowners of San Joaquin County who own groundwater rights, will support a MWD, EBMUD or some other entity/entities extraction/injection project in SJC?

Nomura: "I don't appreciate it and water has been a long-time problem in this county. We're very sensitive to the issue of our water going south or anywhere else, for whatever the reasons."

Giovanni: "No, they wouldn't be supportive. We're struggling with a low water table and saline intrusion as it is. This is a tremendous problem and we want to preserve our territoriality because water is our life's blood."

Stokes: "There is no way landowners in this county will agree to something like this."

Quaschnick: "I'm afraid farmers will get rolled again. There have been more wars fought over water in this state than almost anything else."

Veldstra: "Not with an outside agency. If this was a county project it would be supported. Otherwise, absolutely not with an outside agency."

Hildebrand: "Our choices are to do it ourselves or bring outside agencies in. Recharging the groundwater must be done, regardless. The southern part of the county has had problems for years with surface water being taken by outside interests, so we already understand the problems and risks of bringing in outside interests."

San Joaquin Farm Bureau News

August 2000

Attachment 3

Summary of Delta Water Quality Issues

Attachment 3

Summary of Delta Water Quality Issues

Public health and water treatment experts have acknowledged that source water quality should be a primary consideration in any effort to secure additional water supplies. In particular, the State Water Resources Control Board has supported EBMUD's objective for the highest quality water supply by acknowledging that "[p]rudence requires that public water suppliers should minimize treatment uncertainties by seeking water from the best available source and as removed from the potential for degradation as possible" (pp.14, 15 in California State Water Resources Control Board 1988a).

Both the federal and state governments have established strong policies to encourage the use of the highest quality supply available for drinking water. These principles are embodied in the 1996 federal Safe Drinking Water Act (see for example 42 USC 300j-13 and 300j-14). More recently, the California Department of Health Services, Drinking Water Program have developed Policy Memo 97-005 Policy Guidance for Direct Domestic Use of Extremely Impaired Source. While this policy memo is generally directed towards uses of impaired drinking source waters, it contains several key statements that support obtaining the highest quality water for drinking purposes in the "General Philosophy" section of the memo. These statements include the following:

> The Drinking Water Program continues to subscribe to the basic principle that only the bast quality sources of water reasonably available to a water utility should be used for drinking.
>
> Where reasonable alternatives are available, high quality drinking water should not be allowed to be degraded by the planned addition of contaminants. In other words, the maximum levels should not be used to condone contamination up to those levels where the addition of those contaminants can be reasonably avoided.
>
> Drinking water quality and public health shall be given greater consideration than cost or cost savings when evaluating alternative drinking water sources or treatment processes.

In addition, the CALFED Bay-Delta Program has identified drinking water quality as a key concern. In the Final Water Quality Program Plan published in tandem with the Final EIR/EIS in July, 2000 (certified in August, 2000). CALFED states, in part:

Source water from the Bay-Delta poses treatment challenges and public health concerns for the 22 million Californians who drink the water. Low water quality reduces options for recycling the water and blending with other source, and increases utility costs of treating the water to meet drinking water regulations and protect public health. (page 3-4)

Several source water constituents create difficulties for the production of a safe drinking water supply from Delta sources. These include bromide, natural organic matter, microbial pathogens, nutrients, salinity, and turbidity. All are naturally occurring, to one degree or another, and some are magnified by anthropogenic actions. Changes in treating drinking water and reducing sources of contaminants can improve the quality of drinking water from the Delta. Future drinking water regulations may, however, require improvements beyond those that can be gained through the actions specified in this section. (page 3-1)

Pollutants in Delta waters come from tidal interaction with the ocean and from point and non-point sources located throughout the Delta and tributary watersheds. Other pollutants can enter the aqueducts and reservoirs of the drinking water supply system. Pathogens largely come from urban stormwater runoff; livestock operations; recreation users of the Delta; storage reservoirs; and, potentially, inadequately treated discharges of wastewater. Sources of organic matter, primarily organic carbon (usually expressed as total organic carbon [TOC]), include runoff from the following sources: soils, agricultural drainage, urban stormwater tidal wetlands as a result of natural plant decay, algae, and wastewater treatment plant discharges. The most important source of bromide is sea water intrusion, which also is reflected in agricultural drainage from areas irrigated with Delta water. Other sources of bromide may include geological formations, groundwater influenced by ancient sea salts, and chemicals used in the watersheds of the Delta. Salt, as reflected in TDS, comes from sea water intrusion and, to a lesser extent, from natural leaching of soils, agricultural drainage, wastewater treatment plants, and stormwater runoff. Turbidity results from storm events, all types of runoff, resuspended sediments, and phytoplankton populations. Nutrients largely result from erosion; agricultural runoff, including livestock operations; and wastewater treatment plant discharges. (p. 3-2)

Pathogens are a direct health concern., A primary purpose of drinking water treatment is to remove or inactivate pathogens. TOC and bromide react with disinfectants during the treatment process to form disinfection by-products (DBPs) that are a public health concern and will be more stringently regulated in the near future. Nutrients contribute to excess growth of algae in storage reservoirs and in aqueducts, which can result in treatment difficulties and production of unpleasant flavors and odors. (pp. 3-2 through 3-2)

High levels of TDS, salinity, and turbidity adversely affect consumer acceptance and treatment plant operations. High TDS reduces the ability to implement local water management programs, such as water recycling and groundwater replenishment, results in direct economic impacts on residential and industrial water users, and reduces options for blending with other supplies. (p. 3-3)

Delta waters are used to produce drinking water for approximately 22 million people in California. Utilities divert source water at several points in the Delta, each with distinct water quality characteristics. These waters are subsequently treated by a variety of technologies to control pathogens and other contaminants of concern, and to meet federal and state drinking water regulatory

requirements. Depending on the specific source water at the intakes, existing treatment plant configurations, attendant operational constraints, and regulatory requirements, utilities may have difficulty in simultaneously providing adequate supplies of drinking water while complying with drinking water regulations and meeting customer requirements for palatability. Therefore, two interrelated concerns arise from source water quality: (1) the treated water may not meet applicable drinking water standards, and (2) the treated water may not be aesthetically acceptable to the consumers. Because treated water quality is a product of source water quality and treatment methods, treatment options can be significantly narrowed based on source water quality and drinking water regulations. (p. 3-5)

The process of treating surface waters generally involves mixing coagulant chemicals with the source water. This process causes the removal of some dissolved organic material and also causes most of the particulates to aggregate and to settle out. The settled water is then filtered, usually through beds of special sand and anthracite mixtures, removing many more microbial contaminants. At one or more points in the process, chemical disinfectants and physical pathogen inactivation (ultraviolet, ozonation) are applied for specific contact times. Water that flows from the treatment facility into the pipes that distribute the water to homes and businesses must additionally contain a sufficient disinfectant residual (usually chloride or chloramine) to prevent regrowth of harmful bacteria or other organisms in the distribution system, up to the taps of customers. (p. 3-5)

The constituents on American River, Sacramento River, and Delta waters identified of most concern with respect to drinking water include microbial pathogens, bromide, natural organic matter, dissolved solids, salinity, turbidity, and nutrients. Some other contaminants of Delta waters, including pesticides, metals, and methly tert-butyl ether (MTBE), were evaluated and considered to be of limited significance to drinking water at this time because of their relatively low concentrations in Delta waters. (p. 3-5)

Microbial pathogens are a direct threat to public health. The primary purpose of drinking water treatment is to remove or kill pathogens. Under the 1989 Surface Water Treatment Rule (SWTR), surface water must be treated by filtration or disinfection to minimize disease risks from microbes. In addition, turbidity, which can compromise disinfection, must be removed. Emphasis in this rule was on reducing risks from *Giardia*, *Legionella*, and viruses. The Interim Enhanced Surface Water Treatment Rule was promulgated in December 1998 and adopted more stringent turbidity removal requirements. The Long-Term 2 Enhanced Surface Water Treatment Rule (to be promulgated by May 2002) is expected to include requirements for the control of *Cryptosporidium*. (p. 3-6)

Filtration and disinfection are required for drinking water from Delta Sources. Levels of microbial pathogens in Delta waters do not specifically influence the degree of these treatments, since current regulations are based on uniform treatment requirements. However, future regulations may require treatment that is proportional to pathogen levels in source waters. Pathogen levels in Delta waters are largely unknown at this time. Primary disinfection by utilities using Delta water sources usually is accomplished by physical inactivation and oxidation with chlorine. An increasing number of utilities are using ozone or a combination of disinfectants. (p. 3-6)

Chlorine has been used as a primary disinfectant for drinking water for decades. It is effective for bacteria, viruses, and *Giardia* at technically feasible concentration and contact times. It is well understood, relatively simple, and inexpensive. However, it is not effective in inactivating *Cryptosporidium*. If future regulations required disinfection of *Cryptosporidium*, alternative disinfectants would be needed. (p. 3-6)

Some utilities have adopted ozone treatment in addition to other conventional treatment measures. Ozone is a strong oxidant that is effective for inactivation of most pathogenic microorganisms, including *Cryptosporidium*. However, in the presence of bromide such as found in Delta waters, bromate is formed. Bromate is a health concern and is the subject of new drinking water regulations and ongoing health effects research. Optimized conventional filtration is not completely effective to remove all *Cryptosporidium* from drinking water, and chlorinated disinfectants are relatively ineffective in killing or inactivating it. However, physical removal, including low-pressure ultrafiltration membranes, does effectively remove *Cryptosporidium* and *Giardia*, and may provide an alternative to additional ozone inactivation. Membrane filtration has been used successfully in small systems, but it is not known whether the technology is adaptable to large systems such as generally are used to treat Delta waters. For this and other reasons, more California water systems are considering converting to ozone for their primary pathogen inactivation. Ozone treatment is also very effective in controlling adverse tastes and odors that are frequently associated with algae in source water. Other emerging treatment technologies include ultraviolet and chlorine dioxide disinfection, but their potential to produce unwanted chemical byproducts and their economic feasibility are as yet unproven (p. 3-6, 7).

An unfortunate side effect of oxidative pathogen inactivation is the formation of unwanted chemical by-products, some of which result in adverse health impacts. Additionally, the objectionable taste and odor (T&O) characteristics of some DBPs affect consumer acceptance. Different oxidants and different sources of water yield different types and concentrations of by-products.

The Safe Drinking Water Act Amendments of 1996 directed EPA to set regulations that protect against microbial pathogens while simultaneously decreasing the occurrence if DBPs. EPA promulgated the first stage of rules (Stage 1 Disinfectants/Disinfection By-Product (D/DBP) rule and Interim Enhanced Surface Water Treatment rule) in December 1998. These rules must be implemented by December 2001. The Stage 1 D/DBP Rule lowers the maximum contaminant level (MCL) for total trihalomethanes to 80 µg/l, and sets MCLs for haloacetic acids (60 µg/l) and bromate (10 µg/l). EPA is required to promulgate the Stage 2 D/DBP Rule and Long-Term 2 Enhanced Surface Water Treatment Rule by 2002. These rules are currently being negotiated. (p. 3-7)

Ozone does not produce halogenated by-products such as chloroform and the other chloro-bromo-THMs, although it produces bromoform in the presence of organic carbon bromide. Therefore, ozone use, combined with chloramines, enables utilities to more easily meet lower TTHM standards. However, ozonation is more complex and expensive than chlorination. Ozonation of natural organic matter generates higher levels of assimilable organic carbon that can support bacterial regrowth in drinking water distribution systems. Because ozonation does not produce a disinfectant residual, other chemical disinfectants (generally chloramines) must be used to protect distribution systems from

> bacterial regrowth and to minimize TTHM formation in the distribution system. Perhaps more importantly, ozone produces chemical by-products of its own. In the presence of bromide, ozone produces bromate, which appears to have the highest cancer-causing potential of the DBPs measured to date. Apart from bromate, ozone has the capacity to produce a number of other oxidized organic by-products, the potentially harmful effects of which are unknown. However, these by-products may be reduced through biological filtration. (p. 3-7)
>
> Bromide is present in Delta water supplies because of sea water intrusion into the Delta and agricultural return flows into the San Joaquin River from Delta water (Bromide in agricultural return flows primarily due to recycling ocean-derived bromide from areas irrigated with Delta water). TOC from natural and human sources, and bromide react with disinfectant chemicals to produce a broad range of chemical DBPs with different effects, depending on the disinfectant employed. The presence of bromide in source waters shifts the proportion of bromide-containing DBPs to higher levels. Because of the higher molecular weight of brominated versus chlorinated by-products, it is more difficult for utilities to meet MCLs that are based on weight/volume. Moreover, recent health effects studies suggest that brominated by-products may cause more serious health problems than chloroform, including the possibility of causing miscarriages and birth defects. In addition, nutrients affect disinfection treatment indirectly by supporting the growth of algae and other organisms, which subsequently adds to the TOC concentrations of the water. (p. 3-8)

Additionally, in his opinion in EDF et al. v. EBMUD, Judge Hodge concluded that:

> "providing high quality drinking water is a significant public policy objective that is furthered by EBMUD's diversion at the Folsom-South Canal." (p. 2)

He further acknowledged that:

> "from the evidence presented, this court is satisfied that the health risk concerns of EBMUD are well founded." (p. 72)
>
> "and if defendant's (EBMUD) risk assessment proves prophetic, then it would have been a judicial act of exceptional irresponsibility not to have taken the safer course." (p. 73)

The court also determined "that water quality for municipal purposes is appreciably superior when drawn directly from the reservoir at the Folsom-South Canal". (p. 74)

The key concept in the configuration of alternatives is maintaining the quality if the existing EBMUD supply consistent with basic drinking water quality principles. The State Water Resources Control Board, the Hodge Decision, and CALFED each support taking water from the highest quality source and exceeding regulatory standards to minimize treatment and the risks associated with the production of DBPs. The fact that another water utility uses a different treatment process for existing operations (as opposed to future conditions) does not alter the basic principle. While Delta water can be treated to meet drinking water quality standards and that many users use these sources, these standards represent the minimum acceptable quality of water that can be provided for

potable uses. EBMUD's current water supply is of substantially better quality than those minimum standards and EBMUD's treatment systems are designed around that quality of water. The water quality criterion is appropriate because it protects the quality of EBMUD's delivered water supplies, it ensures a quality of water consistent with historic water supplies, and it minimizes risks to EBMUD customers.

Additionally, EBMUD staff developed a policy paper identifying the value of high quality source water and a protected water shed. (See attached.) This policy paper dated September 22, 2000 explains why selecting a high quality source water and source water protection are the best means of ensuring drinking water quality. EBMUD has adopted policy 81, which states that:

> "supplying water from the highest quality source water available is the safest and most prudent way to enable the district to make current and future state and federal health base drinking water quality standards. Given current and future increasingly stringent drinking water standards, EBMUD will minimize public health risks by seeking the best available water source, protected from potential degradation, thereby reducing the uncertainty of technologies ability to eliminate health risks and the potential for added risks from treatment by products."

Selecting and protecting a high quality water source is a logical and prudent step in responding to higher customer drinking water quality expectations, more stringent regulatory requirements and the uncertainties presented by the growing number of microbiological and chemical drinking water contaminants of concern.

THE IMPORTANCE OF SOURCE WATER
IN PROVIDING THE HIGHEST LEVEL OF PUBLIC HEALTH PROTECTION
SEPTEMBER 22, 2000

INTRODUCTION

This paper explains why selecting a high quality source water and source water protection are the best means of ensuring drinking water quality. It reviews the uncertainties and risks of choosing lower quality, unprotected sources of drinking water, and provides an important portion of the information base for future decisions concerning water supply sources for East Bay Municipal Utility District (EBMUD).

SUMMARY/CONCLUSIONS

All water agencies strive to supply their customers with high quality water, in reliable amounts at affordable rates. Selecting the highest quality source water available is endorsed by the American Water Works Association (AWWA):

> "AWWA is dedicated to securing drinking water from the highest quality water sources available and protecting those sources to the maximum degree possible."[1]

EBMUD has also adopted a policy (Policy 81) that supports this approach:

> "Supplying water from the highest quality source water available is the safest and most prudent way to enable the District to meet current and future state and federal health-based drinking water quality standards.
>
> "Given current and future increasingly stringent drinking water standards, EBMUD will minimize public health risks by seeking the best available water source, protected from potential degradation, thereby reducing the uncertainty of technology's ability to eliminate health risks and the potential for added risks from treatment by-products."[2]

EBMUD Policy 81 is consistent with the direction of the drinking water industry which is to integrate high quality source water selection and protection into a comprehensive approach to water quality that includes treatment and distribution system management. Selecting and protecting a high quality source water is a logical and prudent step in responding to higher customer drinking water quality expectations, more stringent regulatory requirements and the uncertainties represented by the growing number of microbiological and chemical drinking water contaminants of concern.

Improved science and lowering of detection limits continue to expand the number of contaminants of concern, the population potentially impacted, and the nature and effect of these

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[1] American Water Works Association, Policy Statement on Quality of Water Supply Sources, adopted 6/19/88, revised 6/11/00.

[2] East Bay Municipal Utility District Policy 81, 4/22/97.

impacts. Contaminants of concern primarily result from polluting activities within the water supply watersheds and increasingly from unintended collateral effects of the treatment processes employed to deal with the contaminants in the source water. Therefore, selecting and maintaining the highest quality source water is increasingly the first and most effective barrier in preventing contaminants from entering or being created within the water supply. Treatment of contaminated or lower-quality source water may or may not require more expense but always results in less reliability. Possible contaminants of source water are listed in Table 1.

Table 1.

CONTAMINANTS OF SOURCE WATER

POTENTIAL SOURCES OF CONTAMINANTS	REGULATED AND EMERGING CONTAMINANTS
Commercial/Industrial Discharges (e.g., food processing, mines/gravel pits, sewer lines)	▪ Volatile organics (e.g. solvents, fuels) ▪ Synthetic organic (e.g. pesticides, herbicides) ▪ Inorganics (e.g. chromium, cyanide, metals) ▪ Pathogens (e.g. bacteria, viruses) ▪ Radionuclides ▪ Carcinogenic precursors ▪ Endocrine Disruptors ▪ Particulates
Agricultural/Rural Runoff (e.g., confined animal feeding operations, irrigated crops, agricultural drainage, silviculture)	▪ Pathogens (e.g. bacteria, viruses, protozoa) ▪ Synthetic organics (e.g. pesticides, herbicides) ▪ Inorganics (e.g. nitrates) ▪ Volatile organics (e.g. solvents, fuels) ▪ Particulates ▪ Carcinogenic precursors ▪ Endocrine disruptors
Residential/Municipal Discharges and Runoff (e.g., golf courses, housing, waste transfer/recycling stations, wastewater)	▪ Pathogens (e.g. bacteria, viruses, protozoa) ▪ Synthetic organics (e.g. pesticides, herbicides) ▪ Inorganics (e.g. cadmium) ▪ Volatile organics (e.g. solvents, fuels) ▪ Particulates ▪ Carcinogenic precursors ▪ Endocrine disruptors
Other (e.g., construction/demolition, historic waste dumps/landfills, transportation corridors, storage tanks)	▪ Synthetic organics (e.g. pesticides, herbicides, PCBs) ▪ Volatile organics (e.g. solvents, fuels) ▪ Carcinogenic precursors ▪ Inorganics (e.g. asbestos) ▪ Radionuclides ▪ Pathogens (e.g. bacteria, viruses) ▪ Particulates

COSTS

Both high quality source water selection and building treatment facilities can have high initial costs for land, treatment and transmission facilities. High quality source water often requires a higher initial investment. However, maintaining a high quality source water is achieved at lower cost by low-tech source protection and pollution prevention activities. In addition to reduced reliability and increased risk to water quality, treatment of contaminated source water often entails much higher life cycle costs. Continuous addition of treatment chemicals, energy for treatment and modification or addition of new technologies to address new contaminants are cost factors to be considered in initial source water selection. Higher cost for treatment not only applies to water agencies but increasingly impacts customers directly as well. Customers needing higher quality water than delivered by a utility incur substantial costs in purchasing commercially bottled water or expensive point-of-use treatment devices. Reliance upon individual point-of-use devices raises questions of social equity and has been shown to create additional public health risks due to lack of adequate maintenance.

Cleaning up a drinking water contamination incident is a complicated, costly, and sometimes impossible process. When compared to the costs of cleaning up after a contamination incident, the costs of preventing contamination are very small.[3]

KNOWN & REGULATED CONTAMINANTS

Drinking water supply contaminants that pose health risks include microbial contaminants such as bacteria, viruses, and protozoa; inorganic contaminants such as metals; and organic chemicals such as disinfection by-products, pesticides, herbicides and industrial solvents. As analytical capabilities and public health information on microbial and chemical contaminants has improved, regulation of these contaminants in drinking water has increased.

Between 1975 and 1985, 23 contaminants were regulated by the United States Environmental Protection Agency (EPA). In adopting the 1986 Amendments to the Safe Drinking Water Act (SDWA), Congress required EPA to set Maximum Contaminant Levels (MCLs), and Maximum Contaminant Level Goals (MCLGs) for 83 named contaminants by 1989, and to set regulations beyond the 83 contaminants for 25 additional contaminants every three years. By 1992, EPA had issued regulations for 76 of the mandated contaminants. As a result of these legislative actions, the number of contaminants regulated under SDWA has quadrupled since 1974[4], and water utilities must now meet regulations for over 100 health-related and aesthetic-based contaminants.

Many identified contaminants are not easily removed or may lead to secondary contamination. For example, "...processes in conventional water treatment[5] are not effective in removing certain pesticides belonging to traizine, acetanilide, carbamate, and urea derivative classes. During

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[3] EPA Office of Ground Water and Drinking Water. December, 1998.
[4] EPA Document 816-F-00-002, 2/2000.
[5] "Conventional Water Treatment is the use of coagulation, flocculation, sedimentation, filtration, and disinfection, together as sequential unit processes, in water treatment. This process is also called complete treatment." As found in Symons, et al., The Drinking Water Dictionary 1999, AWWA, Denver, Colorado, USA.

disinfection with chlorine, pesticides such as organophosphates can be oxidized to form toxic degradation products."[6]

Two factors contribute to increasing public health concerns:

- Development of new and more sensitive analytical methods allows for detection of chemicals and microbial pathogens that previously were unquantified or unidentified potential health threats. These advances in analytical methodology enable the detection of new contaminants and existing contaminants at ever-lower concentrations. For example, the latest analytical method for perchlorate is 50 times more sensitive than the methodology used five years ago.

- New toxicological and epidemiological studies correlate the low-level occurrence of contaminants with human health effects. As an example, a recent study by the California Department of Health Services reported an increased number of spontaneous abortions in pregnant women drinking water contaminated with bromodichloromethane, a chemical by-product of disinfection.[7]

EMERGING CONTAMINANTS

As stated above, new analytical methods and better science have led to identifying new contaminants and relating low levels of contaminants to human health effects. These emerging contaminants represent a significant challenge as they exhibit health effects at extremely low levels and are generally not removed through conventional treatment.

Two examples of emerging contaminants, which result from new toxicological data and/or new analytical methods, are described below:

Endocrine Disruptors. Endocrine disruptors are chemicals that interfere with the endogenous hormones in the body. These chemicals have been demonstrated to cause a variety of developmental, behavioral and reproductive problems in humans. There are a variety of sources for these chemicals including discharges from municipal and industrial wastewater treatment plants, industrial discharges runoff from livestock, poultry and agricultural operations, as well as storm water runoff among other sources.

A recent study published in the AWWA Journal[8] describes the discovery of a number of endrocrine disruptors in the Las Vegas Wash and Lake Mead. In Japan, 37 endocrine disruptors are currently required by the Ministry of Health & Welfare to be monitored.[9]

N-Nitrosodimethylamine (NDMA). NDMA is a by-product of current and historical manufacturing processes. It is associated with pesticides, rocket fuel, cosmetics, and some foods and beverages. It has recently been found in some drinking water supplies in California and

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[6] James Hetrick, et al. Briefing Document for a Presentation to the FIFRA Scientific Advisory Panel (SAP), September 2000.
[7] Swann et al, Epidemiology, Vol. 9, No. 2, pp 126-140, 3/18/98.
[8] Roefer, et al, AWWA Journal, *92*, 52-58, 8/2000
[9] Japan Water Research Center, Information Network System 1999.

other areas in North America. NDMA is believed to be a possible human carcinogen at very low levels. It is in a very early stage in the EPA regulatory process, and no federal MCL has been proposed. In California, an action level at 20 parts per trillion has been established.

A survey of raw and treated water for NDMA, as well as development of an analytical method is in progress. EBMUD is currently involved in the survey.

The continuing discovery of new contaminants in the watersheds, in source water, and in treated water will spur additional state and federal regulations. Traditional treatment strategies cannot be expected to effectively deal with these emerging contaminants at extremely low concentrations and across the spectrum of pathogens and organic and inorganic chemicals, which may exhibit toxic or carcinogenic effects.

OTHER EMERGING ISSUES

In addition to the threat of emerging contaminants, there are other public health issues to consider in selecting a water supply source.

Sensitive Sub-Population. "In assessing the potential impact of food and waterborne disease, it is important to recognize that certain individuals may be at greater risk of serious illness than the general population."[10] This was dramatically demonstrated in 1993 in Milwaukee when more than 100 people died from ingestion of waterborne *Cryptosporidium.*[11] The vast majority of deaths occurred in sensitive sub-populations including young children, the elderly, and people who were immuno-compromised. **Current data suggest that sensitive sub-populations now exceed 30% of the US population.** *Cryptosporidium* has recently emerged as one of the most critical new pathogens of concern. After more than 10 years of research, there is no analytical method for *Cryptosporidium* that can assure treated water quality, nor commonly used treatment technologies that can assure 100% safety for sub-populations. The emergence of contaminants such as *Cryptosporidium* that disproportionally affect growing sensitive sub-populations is a strong incentive for selection and protection of high source water quality.

Water Treatment Effectiveness. Optimization of traditional water treatment technologies (coagulation, sedimentation, filtration, and disinfection) has been effective at reducing microbial and chemical health risks. However, it is not clear that this success can be achieved with the growing list of new contaminants. Emerging contaminants may require further optimization of the current treatment process and/or other processes (e.g. activated carbon and membrane technology) that would be added to current treatment trains. However, the effectiveness of these new treatments is uncertain. Research spanning many years will be required to assess the control of new contaminants. It is impossible to determine what treatment is required without knowing the treatment characteristics of a specific contaminant and the concentration at which there is a health concern. The possibility exists that treatment technology may simply not be available for a specific contaminant. Treatment also invariably involves increased environmental and economic impacts such as disposal of waste products and energy consumption.

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[10] Charles P. Gerba, Joan B. Rose, and Charles N. Haas, Sensitive Populations, IJ of Food & Microbiology, 1996.
[11] John DeSuarez, Drinking Water Quality, Jon Wiley & Sons, 1997.

Accountability for Unknown Drinking Water Risks. Water purveyors are held to strict legal responsibility for ensuring that drinking water delivered to consumers meets current regulations. Recently, several water utilities have been named as defendants in lawsuits based on having historically delivered water suspected to contain chemicals potentially dangerous to drinking water customers even though, at the time the water was delivered, the chemicals in question were not regulated. The claim was that contaminated water had been delivered to customers over the past 25 years. The claims are based on current knowledge, not what was known or detectable in the past. Hence, a water company could potentially be held accountable for delivering water that contained perchlorate 25 years ago, even though it was not regulated and could not be detected in the water at the time. The outcome of these suits remains in the courts but may well rest on a determination as to how diligent and responsible the water agency had been in the selection of its source water from the alternatives available to it at the time.

Public Awareness of and Intolerance for Risk. Public expectations for water that not only meets regulatory requirements but that is perceived to be safe places the responsibility squarely on the shoulders of the water industry. Water agencies are now required to disclose contaminants detected in source and treated water even if they are not currently regulated. Nationwide, water agencies must annually provide a public accounting of the quality of the drinking water that is delivered to the consumer in a "Consumer Confidence Report".

In California, Public Health Goals (PHGs) have been established to define levels of drinking water contaminants at which there is no known risk. These levels may be significantly lower than current regulations. PHGs must be listed in the annual Consumer Confidence Report to all consumers. Additionally, where PHGs are exceeded, the water agency must inform its customers through a public meeting/hearing of what action the agency is taking to address that contamination.

Risk Balance. New water treatment processes or modifications to existing processes produces a desired effect but may also bring with them process by-products or other risks. These process by-products or risks may be in the form of increased waste, new chemical contaminants, new biological contaminants, taste and odor and/or interference with other processes. The most noted risk balance in drinking water treatment occurs when a disinfectant is added to water to prevent acute illnesses from pathogens and the reaction produces an unintended disinfection by-product which present a possible chronic (long term) risk of cancer. Thus, to eliminate a known immediate health risk a potential long term health risk is created. For example, when ozone is used as a disinfectant in a contaminated source water, bromate is formed. EPA has considered lowering the bromate MCL and subsequently the chronic risk of cancer. However, EPA decided not to lower the MCL as this would preclude the use of ozone and dramatically increase the acute microbial risks. The most effective method for reducing the need for these risk trade-off decisions is to begin with the highest quality, least contaminated source water reasonably available and maintain that quality through source protection.

Appendix C

Background Information on Acoustics

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Background Information on Acoustics

Sound Terminology

Sound travels through the air as waves of minute air pressure fluctuations caused by some type of vibration. In general, sound waves travel away from the sound source as an expanding spherical surface. The energy contained in a sound wave is consequently spread over an increasing area as it travels away from the source. This results in a decrease in loudness at greater distances from the sound source. The following terms are commonly used in acoustics.

Decibel

Sound-level meters measure the pressure fluctuations caused by sound waves. Because of the ability of the human ear to respond to a wide dynamic range of sound pressure fluctuations, loudness is measured in terms of decibels (dB) on a logarithmic scale. This results in a scale that measures pressure fluctuations in a convenient notation and corresponds to our auditory perception of increasing loudness.

A-Weighted Decibels

Most sounds consist of a broad range of sound frequencies. Because the human ear is not equally sensitive to all frequencies, several frequency-weighting schemes have been used to develop composite decibel scales that approximate the way the human ear responds to sound levels. The "A-weighted" decibel scale (dBA) is the most widely used for this purpose. Typical A-weighted sound levels for various types of sound sources are summarized in Figure 1.

Equivalent Sound Level

Time-varying sound levels are often described in terms of an equivalent constant decibel level. Equivalent sound levels (L_{eq}) are used to develop single-value descriptions of average sound exposure over various periods of time. Such average sound exposure values often include additional weighting factors for annoyance potential attributable to time of day or other considerations. The L_{eq}

data used for these average sound exposure descriptors are generally based on A-weighted sound-level measurements.

Day-Night Average Sound Level

Average sound exposure over a 24-hour period is often presented as a day-night average sound level (L_{dn}). L_{dn} values are calculated from hourly L_{eq} values, with the L_{eq} values for the nighttime period (10:00 p.m.–7:00 a.m.) increased by 10 dB to reflect the greater disturbance potential from nighttime noises.

Community Noise Equivalent Level

The community noise equivalent level (CNEL) is also used to characterize average sound levels over a 24-hour period, with weighting factors included for evening and nighttime sound levels. L_{eq} values for the evening period (7:00 p.m.–10:00 p.m.) are increased by 5 dB, while L_{eq} values for the nighttime period (10:00 p.m.–7:00 a.m.) are increased by 10 dB. For given set of sound measurements, the CNEL value will usually be about 1 dB higher than the L_{dn} value. In practice, CNEL and L_{dn} are often used interchangeably.

Percentile-Exceeded, Maximum, and Minimum Sound Level

The sound level exceeded during a given percentage of a measurement period is the percentile-exceeded sound level (L_x). Examples include L_{10}, L_{50}, and L_{90}. L_{10} is the A-weighted sound level that is exceeded 10% of the measurement period, L_{50} is the level exceeded 50% of the period, and so on. L_{50} is the median sound level measured during the measurement period. $L_{90,}$ the sound level exceeded 90% of the time, excludes high localized sound levels produced by nearby sources such as single car passages or bird chirps. L_{90} is often used to represent the background sound level. L_{50} is also used to provide a less conservative assessment of the background sound level.

The maximum sound level (L_{max}) and the minimum sound level (L_{min}) are the maximum and minimum sound levels respectively, measured during the measurement period. When a sound meter is set to the "slow" response setting as is typical for most community noise measurements, the L_{max} and L_{min} values are the maximum and minimum levels measured over a one-second period.

Sound Source	Sound Level (dBA)*	Response
Carrier deck jet operation		
	140	
Civil defense siren (at 100 feet)		
	130	Painfully loud
Jet takeoff (at 200 feet)		
	120	Threshold of feeling and pain
Riveting machine (at 1 foot) Rock music concert		
	110	
Pile driver (at 50 feet) Ambulance siren (at 100 feet)		
Heavy truck (at 50 feet)	**100**	Very loud
Pneumatic drill (at 50 feet) Freight train cars (at 50 feet) Garbage disposal in home	**90**	
Freight train cars (at 100 feet) Freeway traffic (at 50 feet) Vacuum cleaner (at 10 feet) Air conditioning unit (at 20 feet)	**80**	
Speech in normal voice (at 15 feet)	**70**	Moderately loud
Residence-typical movement of people, no TV or radio	**60**	
Soft whisper (at 5 feet)		
	50	
Recording studio		
	40	Quiet
	30	
	20	
	10	
	0	Threshold of hearing

* Typical A-weighted sound levels in decibels. AA@ weighting approximates the frequency response of the human ear.

Figure 1
Weighted Sound Levels and Human Response

Ambient Sound

Ambient sound is the all-encompassing sound associated with a given community site, usually being a composite of sounds from many sources, near and far, with no particular sound being dominant.

Equivalencies between Various Sound Descriptors

The L_{dn} value at a site calculated from a set of measurements taken over a given 24-hour period will be slightly lower than the CNEL value calculated over the same period. Except in situations where unusually high evening sound levels occur, the CNEL value will be within 1.5 dB of the L_{dn} value for the same set of sound measurements.

The relationship between peak hourly L_{eq} values and associated L_{dn} values depends on the distribution of traffic over the entire day. There is no precise way to convert a peak hourly L_{eq} value to an L_{dn} value. However, in urban areas near heavy traffic, the peak hourly L_{eq} value is typically 2–4 dB lower than the daily L_{dn} value. In less heavily developed areas, the peak hourly L_{eq} is often equal to the daily L_{dn} value. For rural areas with little nighttime traffic, the peak hourly L_{eq} value will often be 3–4 dB greater than the daily L_{dn} value.

Working with Decibel Values

The nature of the decibel scale is such that the individual sound levels for different sound sources cannot be added directly to give the combined sound level of these sources. Two sound sources producing equal sound levels at a given location will produce a composite sound level that is 3 dB greater than either sound alone. When two sound sources differ by 10 dB, the composite sound level will be only 0.4 dB greater than the louder source alone.

Most people have difficulty distinguishing the louder of two sound sources if they differ by less than 1.5–2.0 dB. Research into the human perception of changes in sound level indicates the following:

- a 3-dB change is just perceptible,
- a 5-dB change is clearly perceptible, and
- a 10-dB change is perceived as being twice or half as loud.

A doubling or halving of acoustic energy will change the resulting sound level by 3 dB, which corresponds to a change that is just perceptible. In practice, this means that a doubling of traffic volume on a roadway, doubling the number of people in a stadium, or doubling the number of wind turbines in a wind farm will, as a general rule, only result in a 3-dB, or just perceptible, increase in noise.

Outdoor Sound Propagation

There are a number of factors that affect how sound propagates outdoors. These factors, described by Hoover and Keith (1996), are summarized below.

Distance Attenuation

As a general rule, sound from localized or point sound sources spreads out as it travels away from the source and the sound level drops at a rate of 6 dB per doubling of distance. If the sound source is long in one dimension, such as traffic on a highway or a long train, the sound source is considered to be a line source. As a general rule, the sound level from a line source will drop off at a rate of 3 dB per doubling of distance. If the intervening ground between the line source and the receptor is acoustically "soft" (e.g., ground vegetation, scattered trees, clumps of bushes), an attenuation rate of 4.5 dB per doubling of distance is generally used.

Attenuation from Barriers

Any solid structure such as a berm, wall, or building that blocks the line of sight between a source and receiver serves as a sound barrier and will result in additional sound attenuation. The amount of additional attenuation is a function of the difference between the length of the sound path over the barrier and the length of the direct line of sight path. Thus, the sound attenuation of a barrier between a source and a receiver that are very far apart will be much less than the attenuation that would result if either the source or the receiver is very close to the barrier.

Molecular Absorption

Air absorbs sound energy as a function of the temperature, humidity of the air, and frequency of the sound. Additional sound attenuation on the order of 1 to 2 dB per 1,000 feet can occur.

Anomalous Excess Attenuation

Large-scale effects of wind speed, wind direction, and thermal gradients in the air can cause large differences in sound transmission over large distances. These effects when combined result in anomalous excess attenuation, which can be applied to long-term sound-level estimates. Additional sound attenuation on the order of about 1 dB per 1,000 feet can occur.

Other Atmospheric Effects

Short-term atmospheric effects relating to wind and temperature gradients can cause bending of sound waves and can influence changes in sound levels at large distances. These effects can either increase or decrease sound levels depending on the orientation of the source and receptor and the nature of the wind and temperature gradient. Because these effects are normally short-term, it is generally not practical to include them in sound propagation calculations. Understanding these effects, however, can help explain variations that occur between calculated and measured sound levels.

Guidelines for Interpreting Sound Levels

Various federal, state, and local agencies have developed guidelines for evaluating land use compatibility under different sound-level ranges. The following is a summary of federal and state guidelines.

Federal Agency Guidelines

The federal Noise Control Act of 1972 (Public Law 92-574) established a requirement that all federal agencies administer their programs to promote an environment free of noise that jeopardizes public health or welfare. The U.S. Environmental Protection Agency (EPA) was given the responsibility for:

- providing information to the public regarding identifiable effects of noise on public health or welfare,
- publishing information on the levels of environmental noise that will protect the public health and welfare with an adequate margin of safety,
- coordinating federal research and activities related to noise control, and
- establishing federal noise emission standards for selected products distributed in interstate commerce.

The federal Noise Control Act also directed that all federal agencies comply with applicable federal, state, interstate, and local noise control regulations.

Although EPA was given major public information and federal agency coordination roles, each federal agency retains authority to adopt noise regulations pertaining to agency programs. EPA can require other federal agencies to justify their noise regulations in terms of the federal Noise Control Act policy requirements. The Occupational Safety and Health Administration retains primary authority for setting workplace noise exposure standards. The Federal Aviation Administration retains primary jurisdiction over aircraft noise standards, and the Federal Highway Administration (FHWA) retains primary jurisdiction over highway noise standards.

In 1974, in response to the requirements of the federal Noise Control Act, EPA identified indoor and outdoor noise limits to protect public health and welfare (communication disruption, sleep disturbance, and hearing damage). Outdoor L_{dn} limits of 55 dB and indoor L_{dn} limits of 45 dB are identified as desirable to protect against speech interference and sleep disturbance for residential, educational, and healthcare areas. Sound-level criteria to protect against hearing damage in commercial and industrial areas are identified as 24-hour L_{eq} values of 70 dB (both outdoors and indoors).

The FHWA has adopted criteria for evaluating noise impacts associated with federally funded highway projects and for determining whether these impacts are sufficient to justify funding noise mitigation actions (23 CFR 772). The FHWA noise abatement criteria are based on peak hourly L_{eq} sound levels, not L_{dn} or 24-hour L_{eq} values. The peak 1-hour L_{eq} criteria for residential, educational, and healthcare facilities are 67 dB outdoors and 52 dB indoors. The peak 1-hour L_{eq} criterion for commercial and industrial areas is 72 dB (outdoors).

The U.S. Department of Housing and Urban Development has established guidelines for evaluating noise impacts on residential projects seeking financial support under various grant programs (44 FR 135:40860–40866, January 23, 1979). Sites are generally considered acceptable for residential use if they are exposed to outdoor L_{dn} values of 65 dB or less. Sites are considered "normally unacceptable" if they are exposed to outdoor L_{dn} values of 65–75 dB. Sites are considered unacceptable if they are exposed to outdoor L_{dn} values above 75 dB.

State Agency Guidelines

In 1987, the California Department of Health Services published guidelines for the noise elements of local general plans. These guidelines include a sound level/land use compatibility chart that categorizes various outdoor L_{dn} ranges into up to four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable) by land use. For many land uses, the chart shows overlapping L_{dn} ranges for two or more compatibility categories.

The noise element guidelines chart identifies the normally acceptable range for low-density residential uses as less than 60 dB and the conditionally acceptable range as 55–70 dB. The normally acceptable range for high-density residential uses is identified as L_{dn} values below 65 dB, and the conditionally acceptable range is identified as 60–70 dB. For educational and medical facilities, L_{dn} values below 70 dB are considered normally acceptable and L_{dn} values of 60–70 dB are considered conditionally acceptable. For office and commercial land uses, L_{dn} values below 70 dB are considered normally acceptable and L_{dn} values of 67.5–77.5 are categorized as conditionally acceptable.

These overlapping L_{dn} ranges are intended to indicate that local conditions (existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land use compatibility at specific locations.

The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single-family structures (24 CCR T25-28). These standards require that "interior CNELs with windows closed, attributable to exterior sources, shall not exceed an annual CNEL of 45 dB in any habitable room."

The California Department of Transportation uses the FHWA criteria as the basis for evaluating noise impacts from highway projects.

Cited Reference

Hoover, R. M., and R. H. Keith. 1996. Noise control for buildings and manufacturing plants. Hoover and Keith, Inc. Houston, TX.

Appendix D

Hydraulic Modeling Report

AYRES ASSOCIATES

MEMORANDUM

To: Gary Nuss, CH2MHill; cc: Russ Stepp, FRWA

From: Thomas W. Smith, P.E., G.E.

Date: March 28, 2003

Re: Two-Dimensional Hydraulic Analysis at the Proposed Freeport Water Intake Structure

Introduction

This memorandum summarizes the findings of a two-dimensional hydraulic analysis for the proposed Freeport water intake structure on the Sacramento River. The proposed structure is located upstream from the town of Freeport near River Mile 47.6. The location of this project is shown in **Figure 1**. The purpose of the analysis was to determine if the proposed project would have any detrimental effects on water surface elevation, velocity, sedimentation, or scour on the Sacramento River Flood Control Project (SRFCP) for two high flow scenarios.

This analysis models two flood flow events for an existing river configuration and a proposed structure configuration to identify differences in river hydraulics between the two configurations. The results of this analysis are from an uncalibrated two-dimensional model, however the roughness coefficients used in this model come from a calibrated model in a similar reach of the Sacramento River. Therefore, the results should be interpreted as initial findings. Further modeling may be needed and a calibrated model should be used for final design. Additional runs may also be needed to analyze other project configurations or for the analysis of other flow events, such as those pertinent to fish screen sweep velocity.

This study effort was requested by Freeport Regional Water Authority (FRWA) to support permit applications from the State Reclamation Board for this project. The work was contracted to Ayres Associates through CH2MHill.

Hydraulic Analysis

The river hydraulics were modeled using the RMA-2V steady state two-dimensional computer simulation with the Surface-Water Modeling System (SMS) graphical interface. The riverbed and bank geometry configuration for the two-dimensional model was developed using existing bathymetric and overbank mapping of the Sacramento River, surveyed by Ayres Associates in 1997 and 2002.

Two flood flow events were simulated for both the existing and proposed configurations. These events included the original design flow and a worst case flood event, with discharges of 111,100 cfs and 150,100 cfs, respectively. The design discharge used for this model came from a modern one-dimensional UNET model of the flood control system and is slightly higher than the 1957 Corps stated design flow of 110,000 cfs. The worst case flood scenario is the hypothetical maximum flow that can reach this point in the river without overtopping the upstream levees.

The hydraulic model for this study extends from River Mile (RM) 51 at the upstream end, to RM 46.5 at the downstream end, as per the U.S. Army Corps of Engineers (Corps) 1997 River Miles. The limits of the model are shown in Figure 2. The boundary conditions were obtained from MBK Engineers' updated version of the U.S. Army Corps of Engineers' Infinite Channel UNET model of the Sacramento River developed for Sacramento Area Flood Control Agency (SAFCA).

At the upstream limit of the model, a discharge of 111,100 cfs was used for the design flow and 150,100 cfs was used for the worst case flood scenario. At the downstream limit of the model, a stage of 22.21 (NGVD) was used for the design flow, and a stage of 28.37 (NGVD) was used for the worst case event. The location and configuration of the proposed structure was provided by CH2MHill and is the preferred option at the time of this report. A portion of the finite element mesh, in the area of the project location, is shown in Figure 2.

The model used the channel roughness parameters from a calibrated two-dimensional model approximately 10 miles upstream on the Sacramento River, which was calibrated to known water surfaces, as well as high water marks from 1997. A summary of the roughness parameters used in both models is provided below in **Table 1**.

Table 1. Manning's Roughness Coefficients

Landscape Description	Manning's Roughness Coefficients
Riverbed	0.030
Marina	0.042
Levee	0.033
Grass	0.035
Sparse Trees	0.090
Dense Trees	0.130
Houses/Buildings	0.200

River Hydraulics Results

The existing conditions water surface elevation at the location of the proposed structure is approximately 23.0 ft for the design flow and 29.3 ft for the worst case flow. The project configuration produces only local disturbances in the water surface, which do not propagate upstream to affect the backwater profile of the river. These local disturbances are shown in **Figure 3** and **Figure 4**, for the two modeled flows and discussed below:

- The design flow of 111,100 cfs (Figure 3) shows a maximum decrease in water surface elevation of 0.3 ft on the face of the structure and a maximum increase in water surface elevation of less than 0.2 ft on the downstream side of the structure.
- The worst case flow of 150,000 cfs (Figure 4) shows a maximum decrease in water surface elevation of 0.4 ft on the face of the structure and a maximum increase in water surface elevation of less than 0.2 ft on the downstream side of the structure.

The design flow channel velocities for existing conditions and for the proposed project conditions are shown in **Figure 5** and **Figure 6**, respectively. The channel velocities for the worst case scenario for existing conditions and with project conditions are shown in **Figure 8** and **Figure 9**, respectively. On the aforementioned figures, the arrows indicate the flow

direction, but not the magnitude. The velocity differentials between existing and with project conditions are shown in **Figure 7** for design flow and **Figure 10** for the worst case flow.

The velocity effects from the proposed Freeport Intake Structure are similar for the two modeled flows and are discussed below:

- An increase in velocity occurs along the face of the structure and extends outward toward the middle of the channel for both modeled flows. The velocity increases in this area are up to 1.4 ft/s for the 111,100 cfs flow and 1.7 ft/s for the 150,100 cfs flow.
- The greatest increase in velocity is on the downstream corner of the proposed structure.
- The increased velocity along the face of the structure will likely produce bed scour, especially on the downstream corner where the velocity increase is greatest.
- Increases in velocity occur along the channel bank, downstream of the proposed structure. These increases are up to 0.7 ft/s for the design flow and 0.5 ft/s for worst case flow.
- Velocity decreases occur at the upstream and downstream ends of the proposed structure. The maximum decreases are located on the upstream end of the structure and are –2.3 ft/s for the design flow and –3.0 ft/s for the worst case flow.
- For both modeled flows, the localized flow pattern changed due to the formation of eddies on the upstream and downstream ends of the proposed structure.

Discussion of Erosion, Scour and Sedimentation

The higher velocities along the face of the proposed structure will likely produce new erosion and scour unless counter measures are provided. Soil boring information is not available at this time and we have assumed that the bed and bank materials are fine grained sands and silts, which are highly susceptible to erosion.

Eddies form at the upstream and downstream ends of the proposed structure. The decrease in velocity caused by these eddies may result in the deposition of sediment immediately upstream and downstream of the structure. Some of these sediments may enter the fish screens and intake conduit.

The effects of the increased velocity along the bank downstream of the proposed structure are more difficult to predict, although there is the potential for erosion to occur. **Figure 11** shows an overall view of the riverbank in the project area. The riverbank and levee have very little vegetation, other than grasses and a few trees. Also, there is no remnant floodplain berm at the toe of the levee slope in the area of increased bank velocity (hatched area in Figure 11). The existing bank protection throughout this reach consists of cobbles installed by the Corps of Engineers in 1953. No further details about the design, such as layer thickness or type of toe trench, are known. Based upon our visual inspection of the above water portion of this reach, we would rate the overall condition of the existing armor layer as fair.

The following two photographs are typical depictions for this reach of the river. **Photograph 1** shows a storm drain outfall, located about two-thirds of the way through the area of increased velocity. **Photograph 2** is just upstream of the outfall structure. Cobbles on a grassed slope are clearly visible as well as deposition and erosion patterns near the waterline. No information is available for the bank condition below the waterline. The water level shown in these photographs (February 17, 2003) is higher than the summer low flow shown in the

background aerial (August 1998) of the figures. A review of Figure 11 shows that much of the area of increased velocity is below the summer water level.

Figure 12 displays river cross sections (looking downstream) through the area of increased velocity. These cross sections show the river immediately adjacent to the levee, with no waterside berm remaining through the area of higher velocities. Any additional erosion of the bank will encroach into the levee cross section. Since much of the bank area where velocities are increased is below the water line, no definitive statement can be made as to whether or not the existing revetment is able to handle the increased velocity without any impact.

Conclusions

Based upon hydraulic modeling of the proposed water tower structure, we offer the following conclusions:

1. The proposed structure will have only a small and very localized (less than 0.2 ft) increase on water surface for the design flow and worst case flow scenarios.
2. Localized increases in velocity (0.5 ft/s to 0.7 ft/s) may increase the risk of lower bank erosion downstream of the proposed structure.
3. Localized decreases in velocity immediately upstream and downstream of the proposed structure will promote deposition. Some transport of suspended sediment into the pumps should be expected.
4. The increase in velocity along the face of the proposed structure will generate bed scour.

Recommendations

Based upon our conclusions, we offer the following recommendations:

1. The hydraulic model used for the final design should be calibrated to ensure additional quality control and an additional level of accuracy.
2. Some additional evaluation of the condition of the existing revetment below the water line should be made to determine if this reach can handle the small increase in velocity without an impact.
3. The effects of the local deposition and subsequent mobilization may have an effect on the quality of the pumped water and should be considered in the final design
4. A detailed scour analysis should be performed (based on velocities from the final hydraulic model) to determine the maximum potential scour depth along the face of the proposed structure.

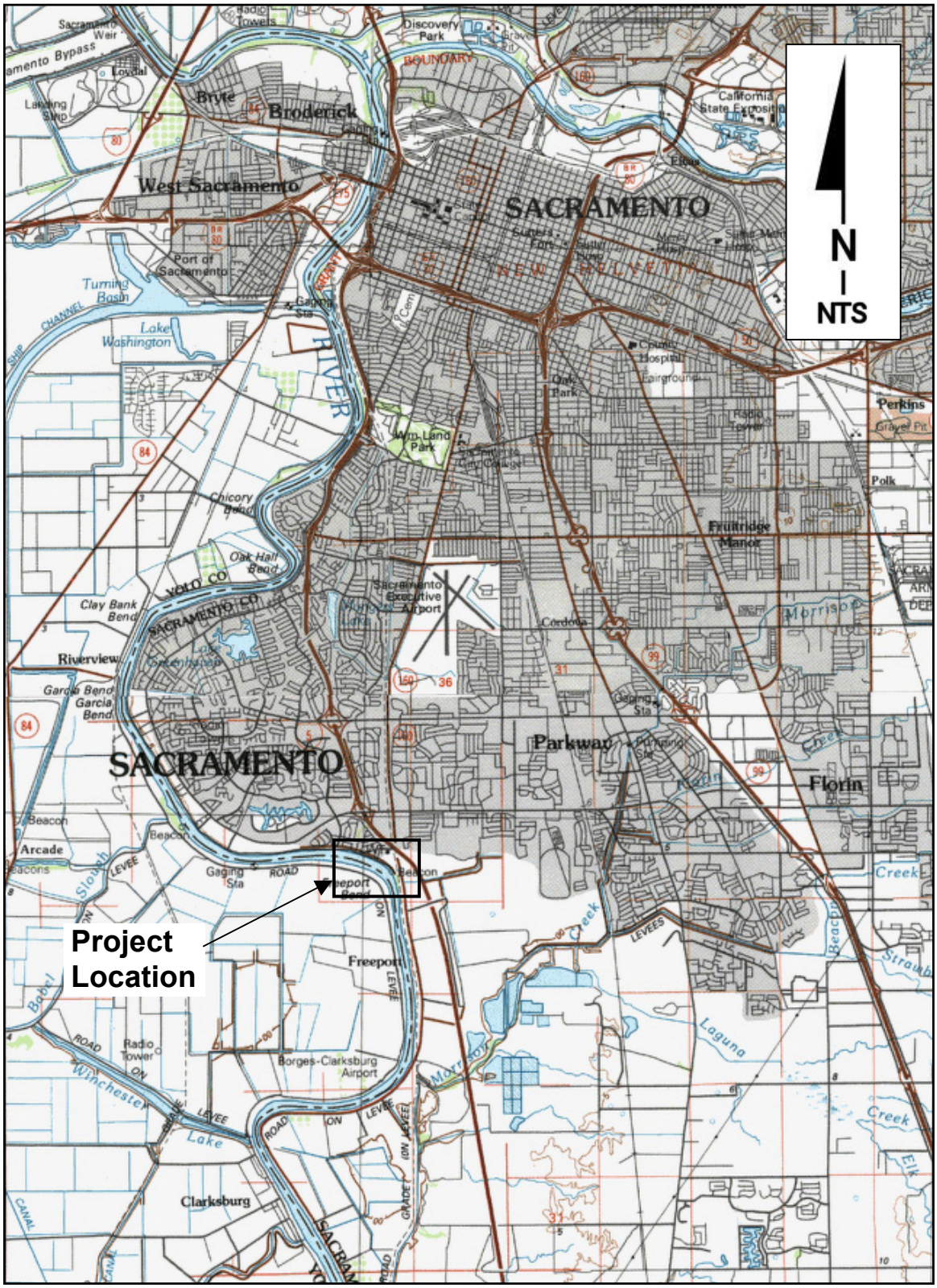

Figure 1. Project Location

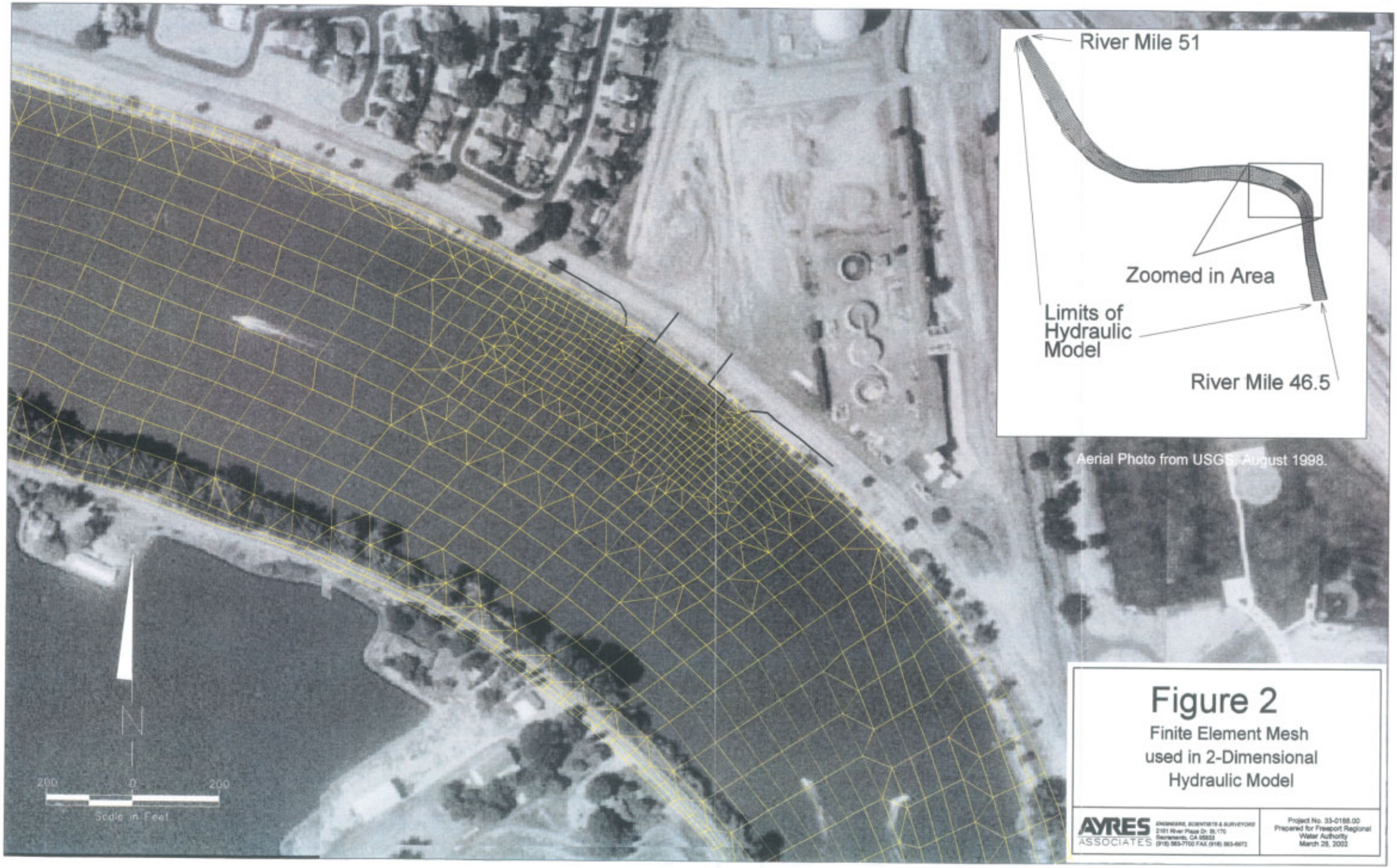

Figure 2

Finite Element Mesh
used in 2-Dimensional
Hydraulic Model

AYRES ASSOCIATES
ENGINEERS, SCIENTISTS & SURVEYORS
2101 River Plaza Dr. Ste.170
Sacramento, CA 95833
(916) 563-7700 FAX (916) 563-6972

Project No. 33-0188.00
Prepared for Freeport Regional
Water Authority
March 28, 2002

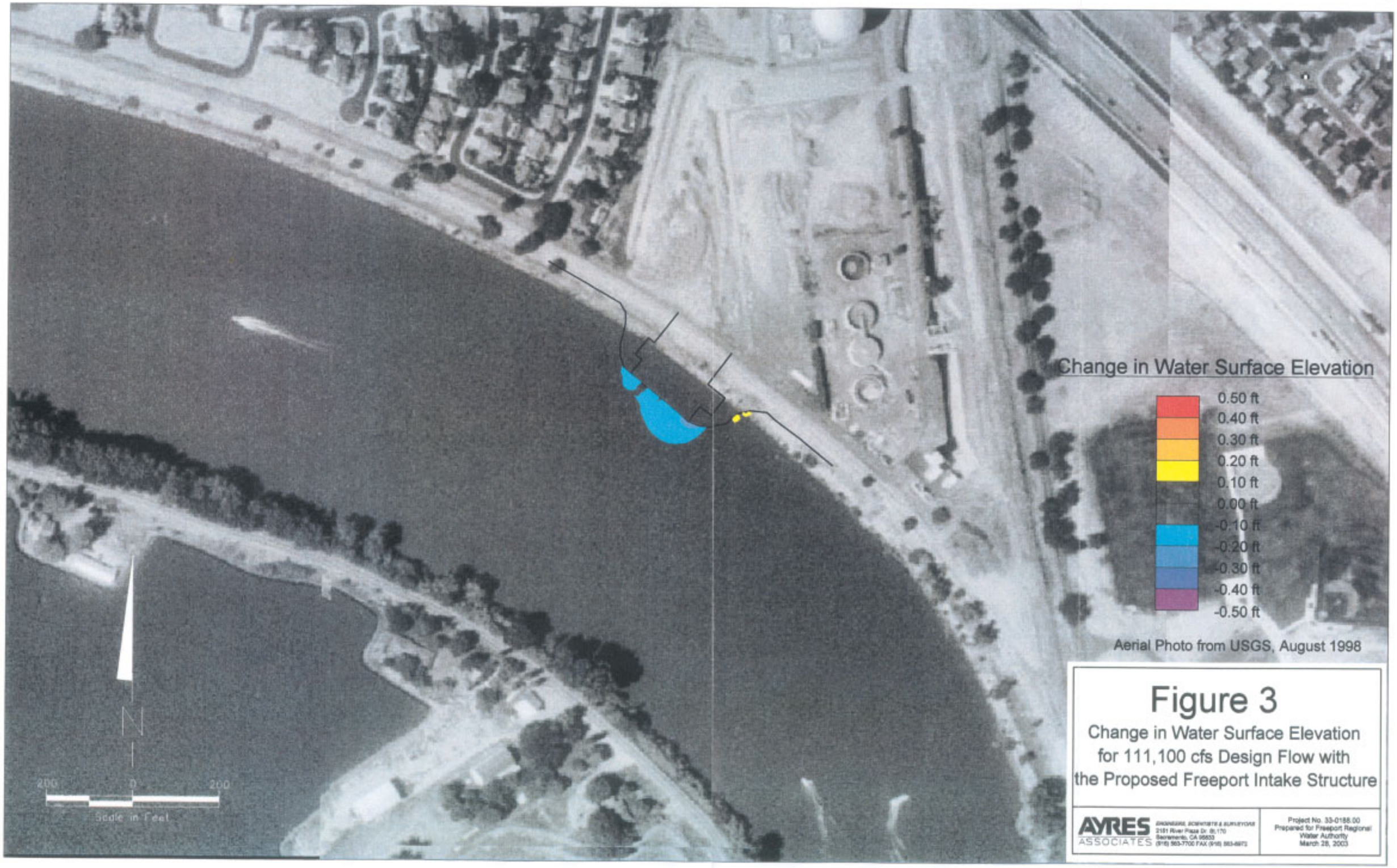

Figure 3

Change in Water Surface Elevation
for 111,100 cfs Design Flow with
the Proposed Freeport Intake Structure

AYRES ASSOCIATES
ENGINEERS, SCIENTISTS & SURVEYORS
2151 River Plaza Dr. St.170
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(916) 563-7700 FAX (916) 563-6971

Project No. 33-0188.00
Prepared for Freeport Regional
Water Authority
March 28, 2003

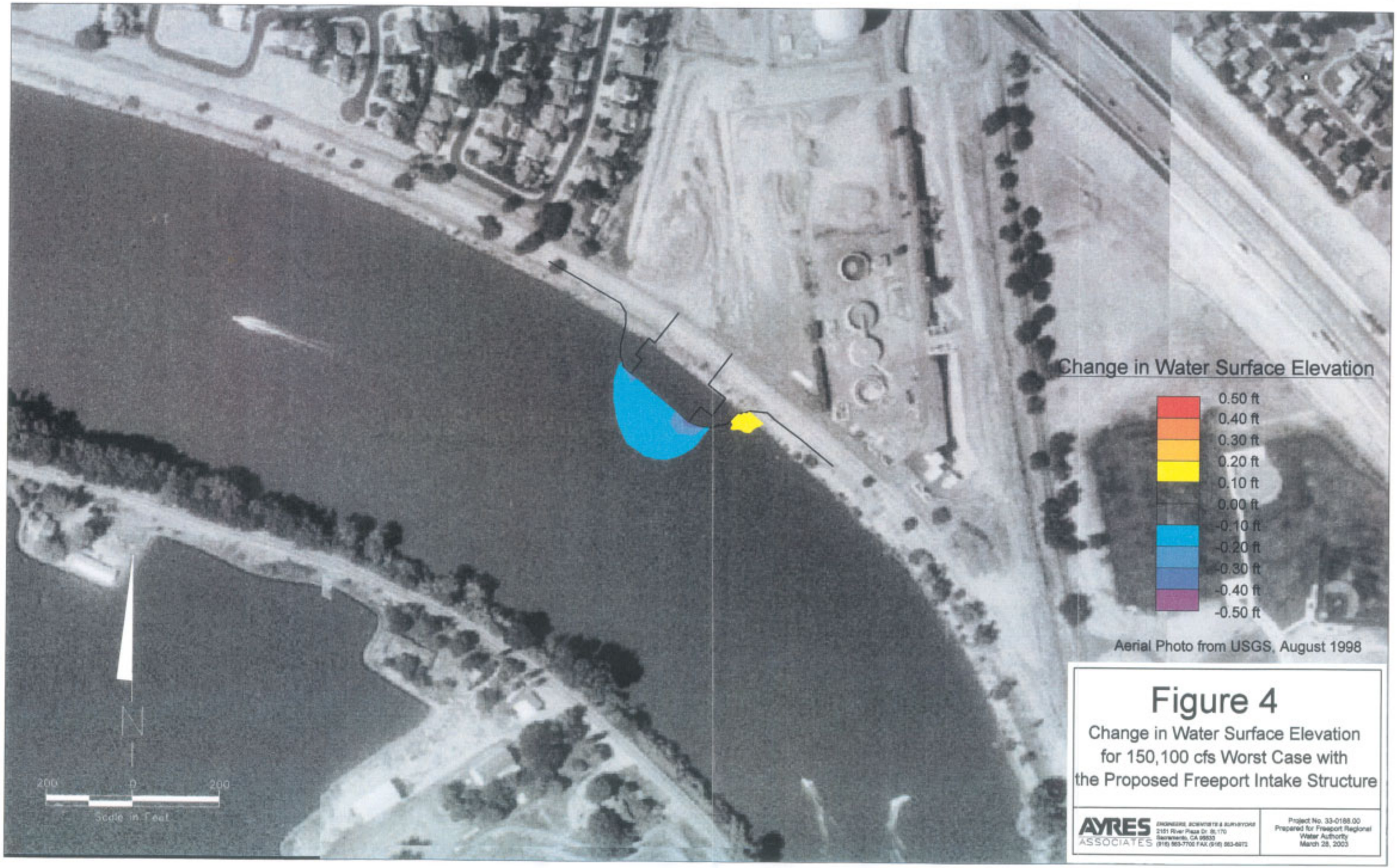

Figure 4

Change in Water Surface Elevation
for 150,100 cfs Worst Case with
the Proposed Freeport Intake Structure

AYRES ASSOCIATES
ENGINEERS, SCIENTISTS & SURVEYORS
2151 River Plaza Dr. St.170
Sacramento, CA 95833
(916) 563-7700 FAX (916) 563-6972

Project No. 33-0188.00
Prepared for Freeport Regional
Water Authority
March 28, 2003

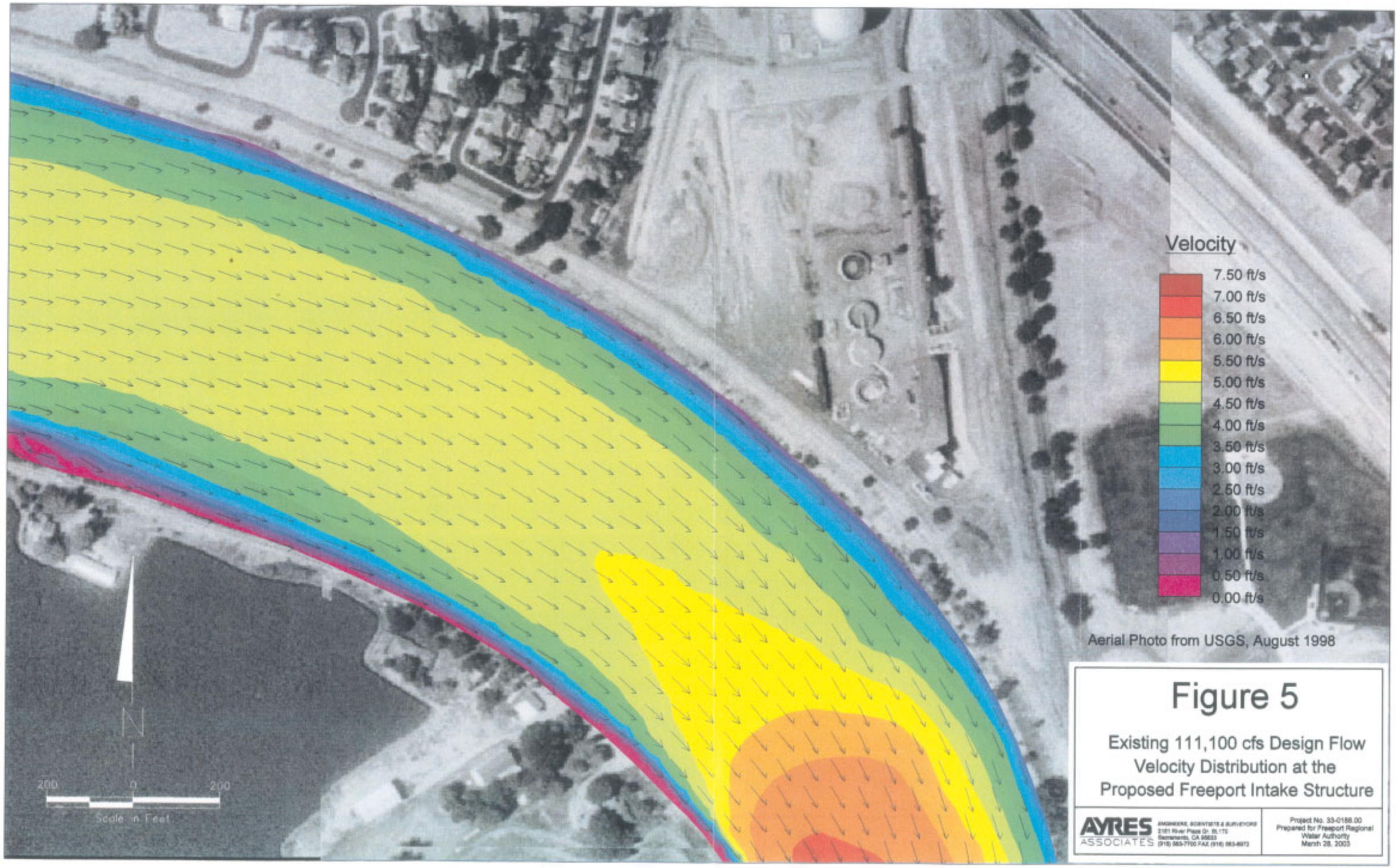

Figure 5

Existing 111,100 cfs Design Flow Velocity Distribution at the Proposed Freeport Intake Structure

AYRES ASSOCIATES ENGINEERS, SCIENTISTS & SURVEYORS 2101 River Plaza Dr. Ste.170 Sacramento, CA 95833 (916) 563-7700 FAX (916) 563-6972

Project No. 33-0188.00
Prepared for Freeport Regional Water Authority
March 28, 2003

Velocity

7.50 ft/s
7.00 ft/s
6.50 ft/s
6.00 ft/s
5.50 ft/s
5.00 ft/s
4.50 ft/s
4.00 ft/s
3.50 ft/s
3.00 ft/s
2.50 ft/s
2.00 ft/s
1.50 ft/s
1.00 ft/s
0.50 ft/s
0.00 ft/s

Aerial Photo from USGS, August 1998

N

200 0 200

Scale in Feet

Figure 6

With Project 111,100 cfs Design Flow Velocity Distribution at the Proposed Freeport Intake Structure

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Project No. 33-0188.00
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Figure 7

Change in 111,100 cfs Design Flow Velocity Distribution with the Proposed Freeport Intake Structure

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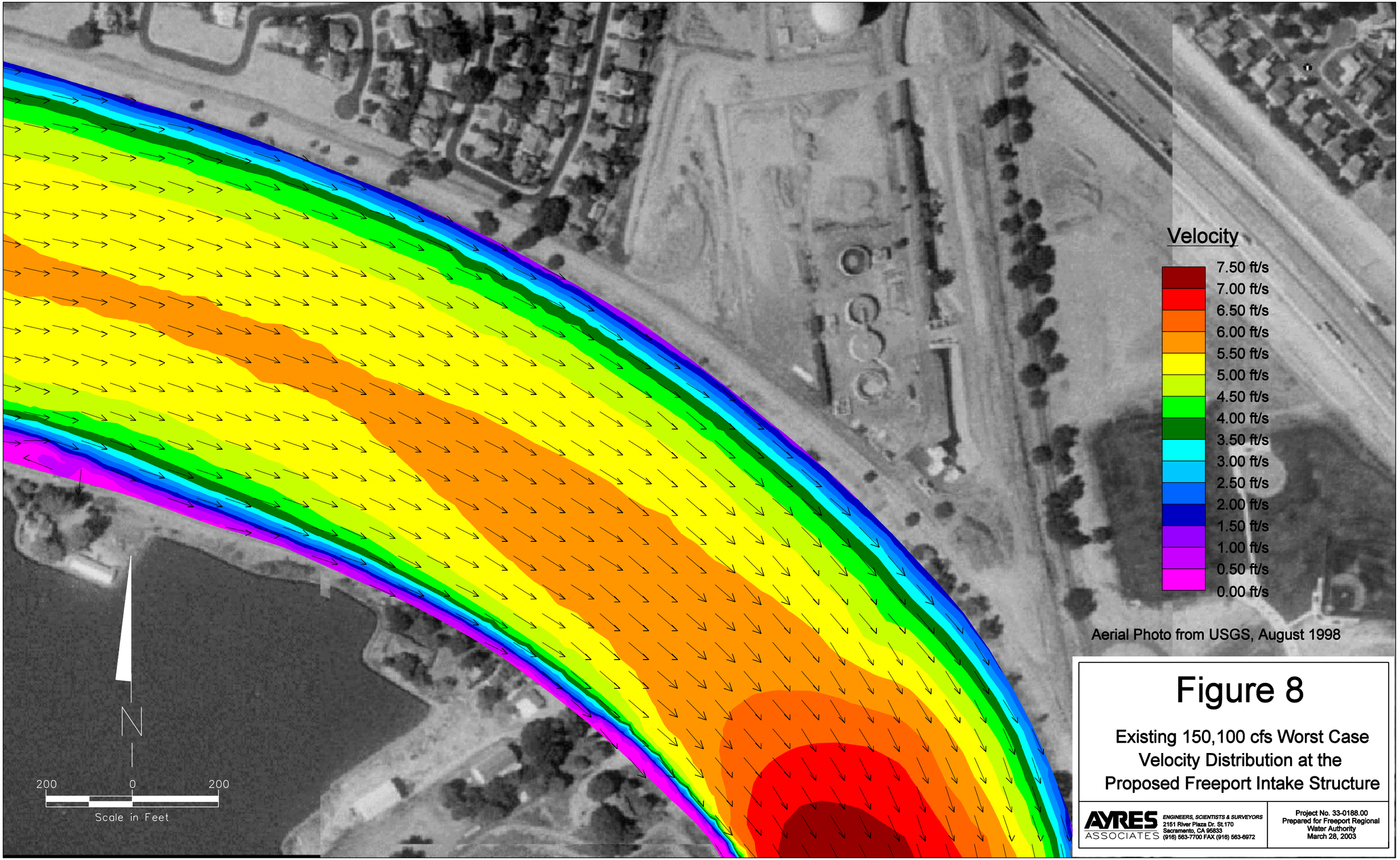

Figure 8

Existing 150,100 cfs Worst Case Velocity Distribution at the Proposed Freeport Intake Structure

AYRES ASSOCIATES
ENGINEERS, SCIENTISTS & SURVEYORS
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Project No. 33-0188.00
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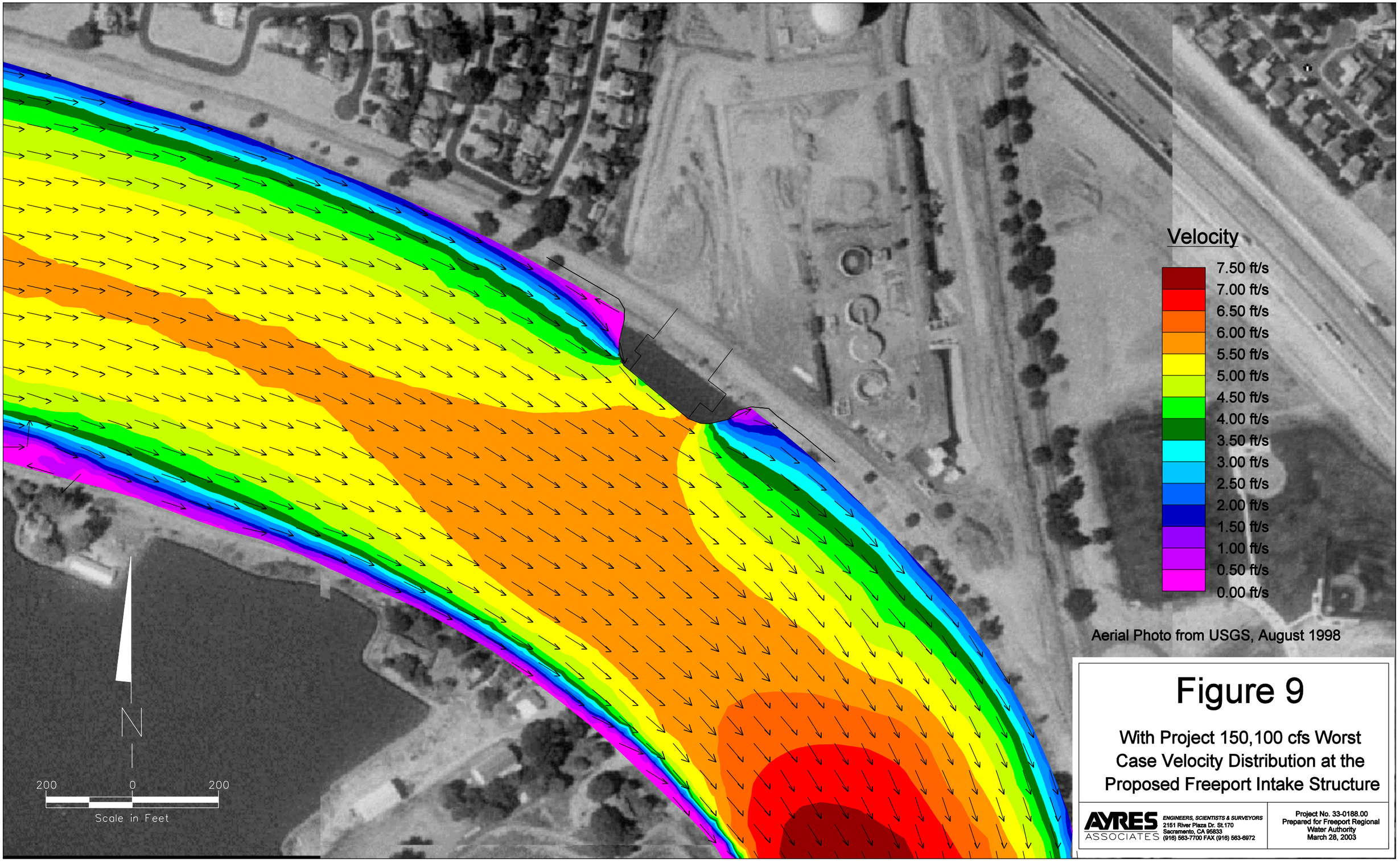

Figure 9

With Project 150,100 cfs Worst Case Velocity Distribution at the Proposed Freeport Intake Structure

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Project No. 33-0188.00
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March 28, 2003

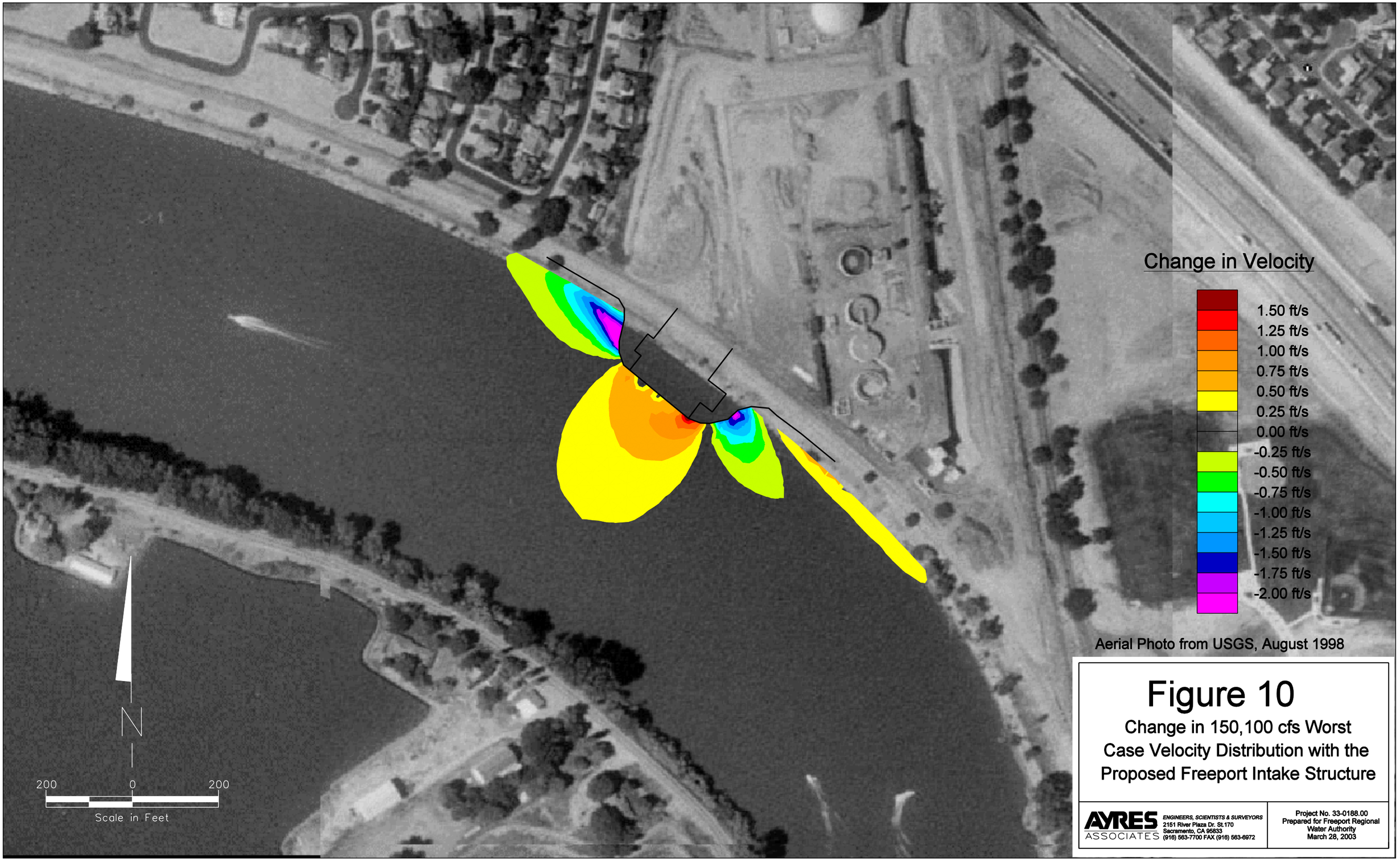

Figure 10

Change in 150,100 cfs Worst Case Velocity Distribution with the Proposed Freeport Intake Structure

AYRES ASSOCIATES
ENGINEERS, SCIENTISTS & SURVEYORS
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Project No. 33-0188.00
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March 28, 2003

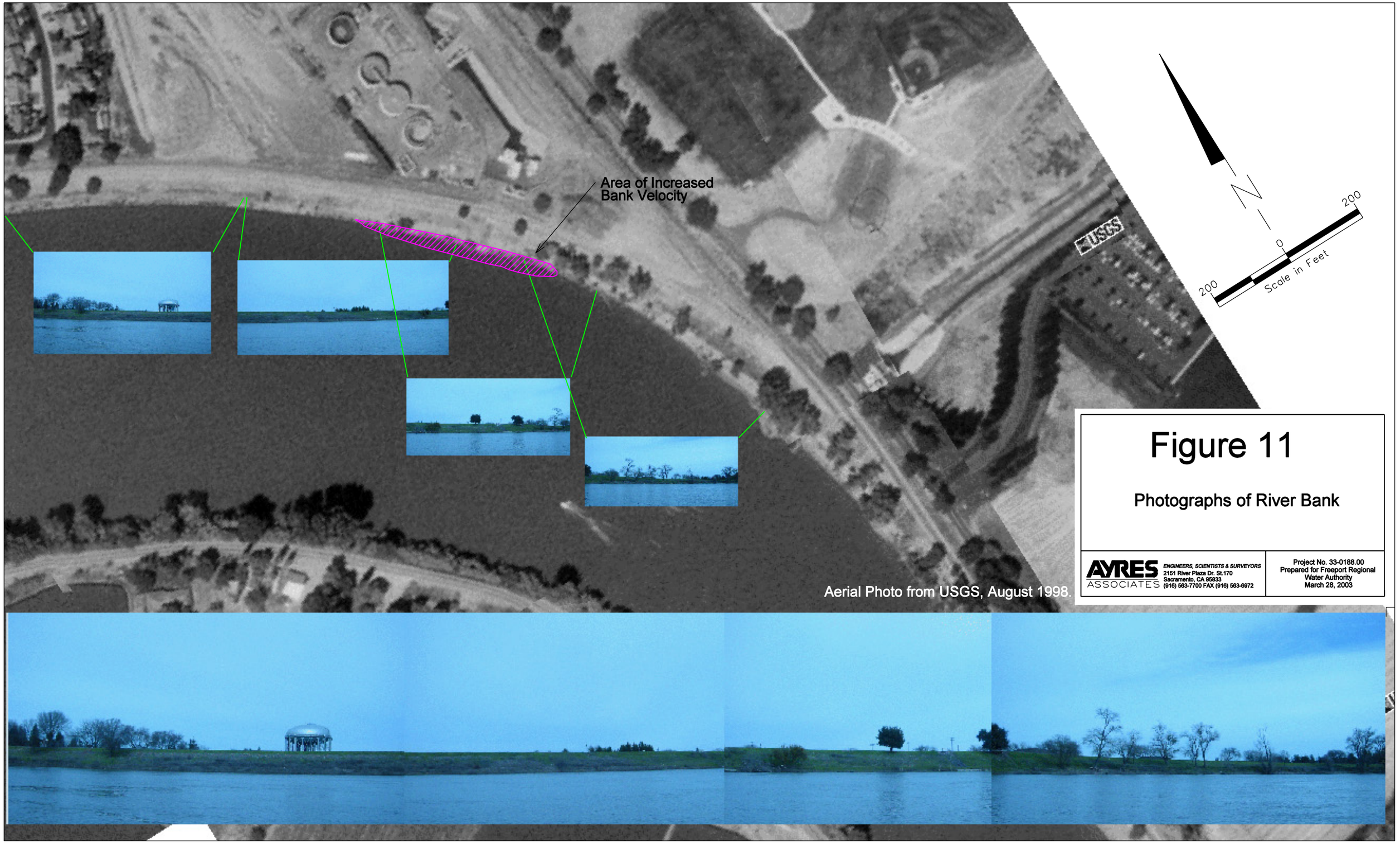

Figure 11

Photographs of River Bank

Aerial Photo from USGS, August 1998.

AYRES ASSOCIATES
ENGINEERS, SCIENTISTS & SURVEYORS
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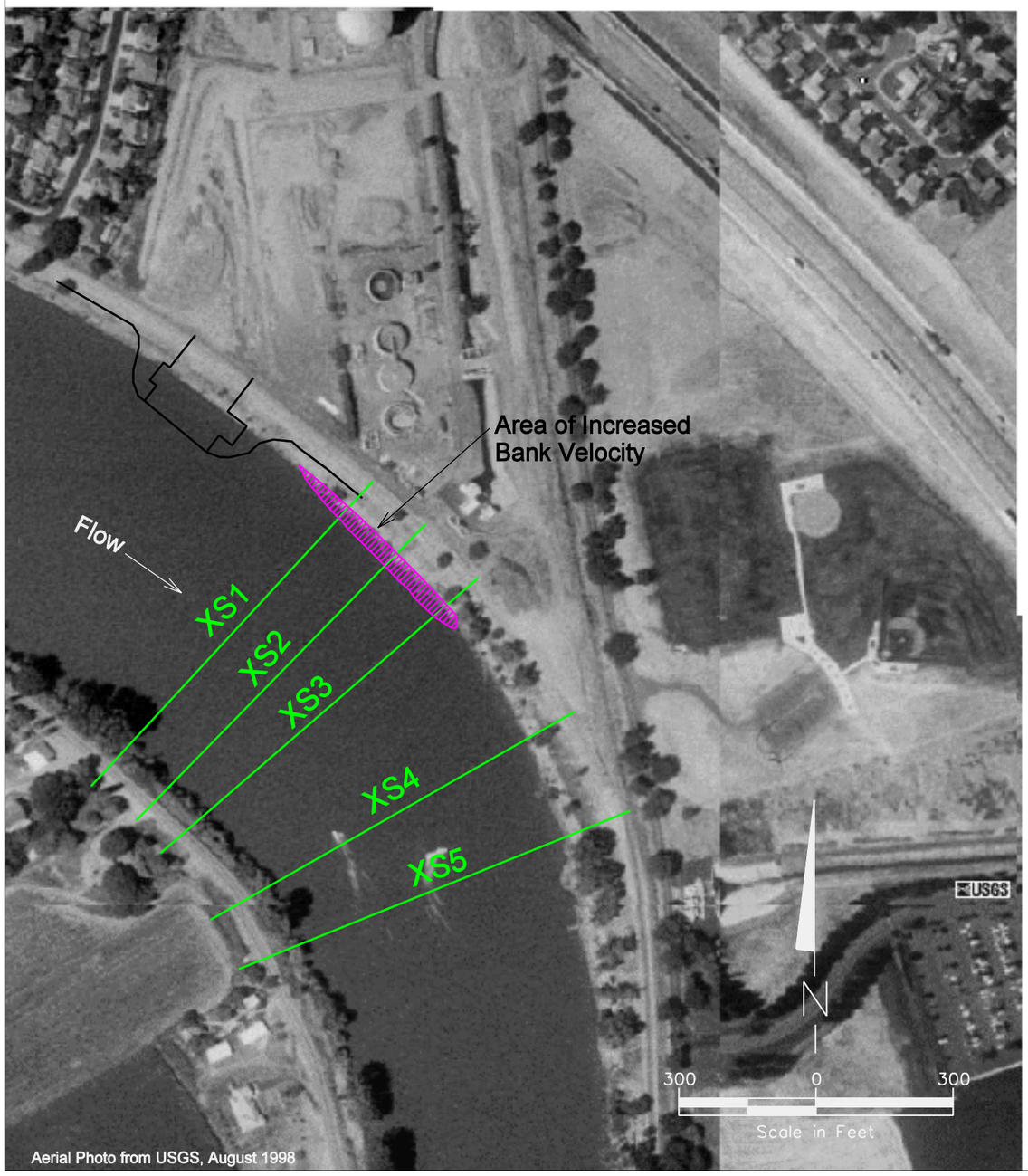
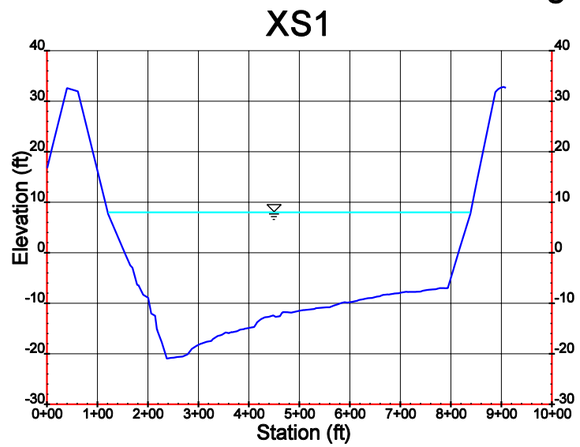
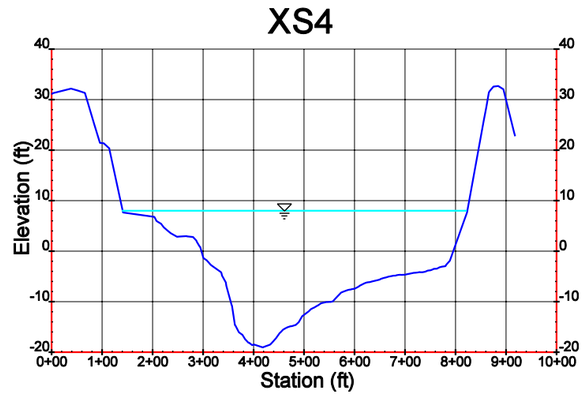
Project No. 33-0188.00
Prepared for Freeport Regional
Water Authority
March 28, 2003

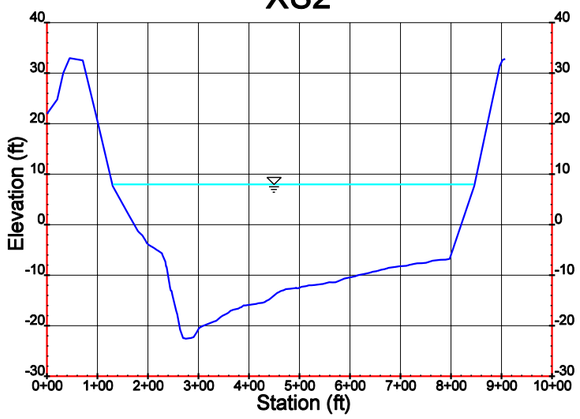
Cross Sections Locations

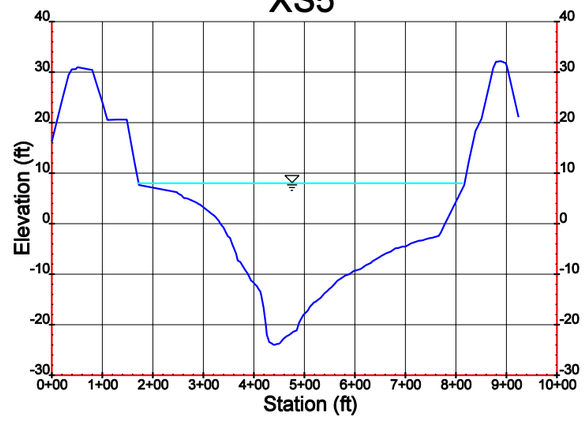


Cross Sections Looking Downstream
With Mean August Water Surface Elevation









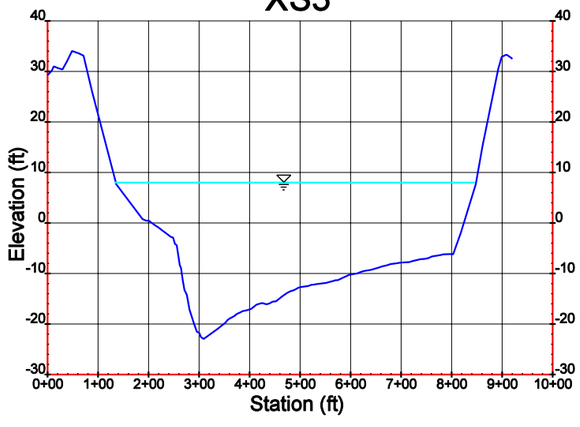


Figure 12

Cross Sections in the Area of Potential Bank Erosion Concerns Downstream of the Proposed Freeport Intake Structure

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Prepared for Freeport Regional Water Authority
March 28, 2003

Photograph 1. Typical Riverbank Downstream of Proposed Structure

Photograph 2. Close up View of Outfall Structure Shown in Photograph 1.

Appendix E

Freeport Regional Water Project Scoping Report

Scoping Report

for the

Freeport Regional Water Project

Freeport Regional Water Authority
Sacramento County Water Agency
East Bay Municipal Utility District

U.S. Department of Interior, Bureau of Reclamation

July 2003

Contents

Appendix E

Freeport Regional Water Project Scoping Report

Summary

Public involvement in the Freeport Regional Water Project (FRWP) has been significant since the Sacramento County Water Agency (SCWA) and East Bay Municipal Utility District (EBMUD) signed a Joint Powers Agreement creating the Freeport Regional Water Authority (FRWA) on February 14, 2002. FRWA has made substantial efforts to solicit public input to the project and provide the public with updates on the progress of the project through scoping meetings, small group meetings, community presentations, development of a project web site, and distribution of two fact sheets.

In April 2002, FRWA issued a Notice of Preparation (NOP) of an Environmental Impact Report (EIR) and a Notice of Intent (NOI) of an Environmental Impact Statement (EIS), informing agencies and the general public that an EIR/EIS was being prepared and inviting specific comments on the scope and content of the document. The NOI/NOP also invited participation at public scoping meetings. The NOI/NOP included an initial study outlining what were considered the key issues related to the project and discussed the potential environmental impacts of the project.

Scoping Meetings

FRWA held five scoping meetings in locations convenient for individuals and organizations most likely to be most affected by the development of the project. The meetings were held in Oakland, Freeport, South Sacramento, Herald, and Central Sacramento. Before the meetings, notices were published in local newspapers announcing the time, date, location, and purpose of the meetings. Copies of a fact sheet/meeting notice were sent to an extensive mailing list of interested parties. Each scoping meeting included an overview of the meeting's purpose, the proposed project and alternatives, potentially significant environmental issues, and opportunities for future public involvement. Attendees were given the opportunity to provide both written and oral comments. The meeting dates, locations, and attendance follow.

Date	Location	Attendance
April 8, 2002	Oakland	20
April 11, 2002	Freeport	24
April 15, 2002	South Sacramento	24
April 18, 2002	Herald	25
April 25, 2002	Central Sacramento	9

Publicity

To publicize the scoping meetings, FRWA mailed approximately 3,800 public meeting notices/fact sheets to interested parties in Sacramento, San Joaquin, Alameda and Contra Costa Counties. FRWA also placed advertisements in local papers, including the *Oakland Tribune*, the *San Francisco Examiner*, the *Contra Costa Times*, the *Tri-Valley Herald*, the *Sacramento Bee*, the *Elk Grove Citizen*, the *Laguna Citizen*, the *Lodi News Sentinel*, the *Stockton Record*, and the *Galt Herald*.

Staff

The following representatives of EBMUD, SCWA, Bureau of Reclamation, and City of Sacramento participated in the scoping meetings:

- Gary Darling, EBMUD
- John Lampe, EBMUD
- Maria Solis, EBMUD
- Tad Berkebile, SCWA
- Mark Blustein, EBMUD
- Diane Margetts, SCWA
- Jim Peifer, SCWA
- Rob Schroeder, Bureau of Reclamation
- Jim Sequeira, City of Sacramento

Agenda

The meeting included an overview of the project—history, purpose, timeline, summary of the environmental studies and public review process—followed by a

public comment period. Following is a summary of the project description given at the meetings.

The Freeport Regional Water Project

The FRWP is a joint regional water supply project being developed on the Sacramento River near the town of Freeport by SCWA and EBMUD, in close coordination with the City of Sacramento (City) and the U.S. Department of Interior, Bureau of Reclamation (Reclamation). The project is designed to help meet future drinking water needs in the central Sacramento County area and supplement aggressive water conservation and recycling programs in the East Bay to provide adequate water supply during future drought periods. The FRWP is important because it will:

1. provide up to 85 million gallons per day (mgd) of surface water to SCWA to be used in conjunction with groundwater to help meet future water supply needs in central Sacramento County (these future water supply needs have been identified and recognized as a part of the landmark Water Forum Agreement [ratified April 2000]);
2. provide a 100-mgd dry-year water supply to EBMUD customers to supplement aggressive water conservation and recycling programs and reduce the potential for severe water rationing and associated economic losses and hardships during drought periods; and
3. offer the opportunity for use of EBMUD capacity by others during non-drought periods, although such use would be subject to additional environmental review.

The FRWP would consist of:

- a proposed new 185-mgd intake on the Sacramento River near the community of Freeport, including state-of-the-art fish screens;
- a proposed new pipeline to convey water east to the Folsom South Canal;
- a proposed future water treatment plant in central Sacramento County, to be owned and operated by the SCWA, to provide treated surface water supplies; and
- proposed new facilities to transport water for EBMUD from the southern end of the Folsom South Canal to the existing EBMUD Mokelumne Aqueducts, through which the water will be conveyed to the EBMUD service area.

Public Comments

Each meeting was recorded on audio tape, and detailed notes were taken. In addition, participants were asked to fill out and turn in comment cards. Lap top

computers were provided for individuals who preferred to type their comments directly into a comment form. Comments were also accepted via email through the project web site. Attachment A includes a list of individuals or organizations that submitted comments and, if written, copies of their letters. All verbal comments received at the scoping meetings and written comments submitted in response to the NOI/NOP were considered during preparation of the Draft EIR/EIS. Attachment B is a summary of comments and questions from each scoping meeting, and Attachment C contains the verbal transcripts.

Other Community Meetings/Presentations

Freeport Project representatives attended multiple small group and community organization meetings to present information, answer questions, and receive feedback regarding the FRWP throughout the scoping process. All comments received during these community meetings were considered during preparation of the Draft EIR/EIS. Attachment D contains a list of agencies and organizations contacted by the FRWP prior to the release of the draft environmental documents.

Attachment A

List of Commentors Letters/Correspondence

Freeport Regional Water Project
List of Scoping Commentors

Federal

John Brooks, USFWS
Gonzallo Castillo, Ph.D., USFWS, AFRP
Laura Fujii, U.S. EPA

State

Tom Dumas, Cal Trans
Stephen L. Jenkins, CA State Lands Commission
Jeffrey Pulverman, Cal Trans Disctrict 3
Sterling Sorenson, CA Reclamation Board

Local

Jim Abercrombie, Amador Water Agency
Roya Borman, Sacramento Municipal Utility District
Henry Clark, West County Toxics Coalition*
Jeffrey E. Clark, County of Sacramento, Public Works
John C. Coburn, State Water Contractors
Edward J. Cox, City of Sacramento
Linda Fiack, County of Yolo
Bill Hazencamp, Metropolitan Water District*
Butch Hodgkins, Sac. Area Flood Control Agency
Mary James, Sac. Regional County Sanitation District
Mel Lytle, San Joaquin County Public Works
David Melko, Sacramento Regional Transit District
Scott Morris, Delta Water Users
Bob Nelson, Sacramento Municipal Utility District*
Paul Olmstead, Sacramento Municipal Utility District
John Rubin, Santa Clara Valley Water District*
Jim Snow, Westlands Water District*
Roger A. Storey, City of Stockton
Daniel Tafe, Contra Costa Water District*

Other

Jim & Rhonda Bergum
Mary Brill*
Tom Burroes*
Kevin Canals, California Rural Water Association*
Don & Claire Fenocchio
Ray Harold*
Walter Hoppe
Dick Johnson*
Walter John
Fred and Vi Kirtlan, Fred Kirtlan and Sons
Garth & Debbie Kuhagen
Stan Kurl
John Leadbetter*
Mack Road Merchants and Property Owners
Joe Mertin*
Anna M. Mesquita
Kevin Mulderick, Zebra Neighborhood Association*
Beverly Nesbitt*
Brian Nunes*
George Potiris, Perry's Restaurants
Carol Rakela, Freeport Boulevard Improvement Comm.
Jesse Reese
Tim Rhinehart, Clay Station Road Homeowners Assn.*
Betty Robinson*
Gene Robinson*
Walt Seifert, Sacramento Area Bicycle Advocates
Judy & Dan Serpa
Felix E. Smith
Judy Thomas
Alan D. Wade, Save the American River Association
Diane Watkins
Keith Watts, Bordeu Ranch
Bob Webber
George & Judy Waegell*
Joyce Whitaker, Meadowview Development Committee*
Ken Wilson
Russ van Lobensels

*Comment submitted verbally at scoping meeting

Comment Cards

Salute	First Name	Last Name	Organization	Address	City
Mr.	John	Brooks	FWS	2016 richmond st	sacramento
State	**Zip Code**	**Area Code**	**Phone Number**	**Fax Number**	**E-Mail**
CA	95825	916	414-6726		john_c_brook

To be added in the mailinglist

☐

Comment
The information provided in the NOI is understandably brief. The NOI states that the Freeport diversion will be sized at 185 million gallons per day [about a 284 cfs pipeline size with the capability to pump about 568 acre-feet per day (AF)]. This pumping capacity and pipeline size provides the opportunity to divert over 207,000 AF per year. However, the NOI identifies 22,000 AF for Sacramento County without noting the full build out projections for either Sacramento County of EBMUD. The EIS/EIR should clearly identify water qualities along with where,when, and how the diverted water will be used now and in future projections. The "dry year" definition should be clearly provided. Both EBMUD and SCWA contracts should be included in the EIR/ EIS. The fact Sheet and Public Scoping Noticed, date March 2002 provides additional information on water allocations from the propsed diversion and conveyance facilities. That notice pointed out that SCWA would use up to 95,000 AF per year and EBMUD would use up to 112,000 AF during a "dry year". The EIR/ EIS cumulative impact section should include the full facility diversion capability in it's analysis. The National Enviromental Policy Act and implementing procedures require compliance with the Fish and Wildlife Coordination Act and the Endangered Species Act. Have these processes been initiated?

Attended Meeting
042502

Original Message-----
From: Gonzalo_Castillo@r1.fws.gov [mailto:Gonzalo_Castillo@r1.fws.gov]
Sent: Tuesday, April 30, 2002 7:38 PM
To: Margetts, Diane (PWA)
Cc: Craig_Fleming@r1.fws.gov; John_Icanberry@r1.fws.gov; Roger_Guinee@fws.gov; Cesar_Blanco@r1.fws.gov; Jeff_McLain@r1.fws.gov; Richard_Jewell@fws.gov
Subject: Freeport Regional Water Project

Dear Ms. Margetts,

I have reviewed the web site describing the Freeport Regional Water Project and I have several questions that I hope could be addressed in the Draft EIR/EIS to be made public in fall 2002. My main concern about the project are the decreased flows available to migratory and resident fishes in the Sacramento River, the Delta and the Bay area. Anadromous salmonids have declined dramatically from historical levels in the Central Valley and any additional water diversion increases the cumulative impact on these public resources and further reduces the potential for restoring these populations. My specific questions about the Freeport Regional water project are:

1) Are there any environmental measures to compensate for the anticipated flow reductions in the Sacramento River, the Delta and the Bay area and their impacts on public trust resources?
2) Is there any standard on maximum daily water diversion during years below average flow, dry and critically dry years?
3) How many acre-feet of water are expected to be pumped per year and in which months?
4) How water temperatures will be affected in the Sacramento River, the Delta and the Bay area?
5) Did the project evaluate the potential effect of salinity intrusions to the Delta on the distribution of aquatic species and the water quality of aquifers in east side tributaries?

I would like to further discuss with project representatives how the Freeport Water Project can provide opportunities to benefit from EBMUD's share of project capacity to support environmental goals.

Thank you for your consideration by requesting comments and addressing my concerns.

Sincerely,

Gonzalo Castillo, Ph.D. Habitat Restoration Coordinator Anadromous Fish Restoration Program U.S. Fish & Wildlife Service 4001 N. Wilson Way.

Stockton, CA 95205 Tel 209-946-6400 x 323 - Fax 209-946-6355

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

May 8, 2002

Rob Schroeder
U.S. Bureau of Reclamation
Central California Area Office
7794 Folsom Dam Road
Folsom, CA 95630

Dear Mr. Schroeder:

The Environmental Protection Agency (EPA) has reviewed the Notice of Intent for the project entitled **Freeport Regional Water Project, Sacramento, California.** Our review is pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act

The Bureau of Reclamation (Reclamation) and the Freeport Regional Water Authority (FRWA), a joint powers authority formed by the Sacramento County Water Agency (SCWA) and East Bay Municipal Utility District (EBMUD), propose to construct the Freeport Regional Water Project. The project would increase water service reliability for customers, reduce rationing during droughts, and facilitate conjunctive use of groundwater supplies in central Sacramento County.

Project components include a new intake structure with pumping facilities on the Sacramento River, with a capacity of up to 185 million gallons per day; a raw water pipeline from the intake structure to a turnout in central Sacramento County; a new water treatment plant in central Sacramento County to serve SCWA needs; a raw water pipeline from the turnout to the Folsom South Canal; a new pumping plant near the existing terminus of Folsom South Canal; a new connection pipeline from the terminus of Folsom South Canal to the Mokelumne Aqueducts; and a new pumping and treatment facility at the Mokelumne Aqueducts to deliver water to EBMUD.

EBMUD currently holds a Central Valley Project (CVP) contract with Reclamation for delivery of up to 150,000 acre-feet per year. The original contract was for delivery of this water from the American River through the existing Folsom South Canal. EBMUD and Reclamation have entered into an amendatory CVP contract that allows EBMUD to take delivery of its CVP supply at the Freeport location on the Sacramento River south of downtown Sacramento. SCWA has a CVP entitlement of 22,000 acre-feet per year which is currently delivered through the City of Sacramento's intake and treatment facilities.

EPA acknowledges the extensive efforts of EBMUD to obtain access to their CVP entitlement and to ensure a safe and reliable water supply as described in the related environmental documentation for the EBMUD Supplemental Water Supply Project. We provided comments on the EBMUD Supplemental Water Supply Project Draft EIS (February 17, 1998), Supplemental Draft EIS (November 20, 2000) and Final EIS (January 12, 2001) respectively. Although the project location has changed, many of our previous comments may still be of use to you and are, hereby, incorporated by reference.

We commend the increased cooperation between Sacramento County and EBMUD. We urge other water service purveyors to consider joining this effort and taking advantage of this water supply opportunity. We also applaud the decision to take delivery of water from the Sacramento River instead of the more environmentally sensitive American River. EPA supports the multi-faceted approach outlined in the EBMUD Water Supply Management Program of water supply improvements, lower Mokelumne River management, water reclamation, water conservation, and Mokelumne Aqueduct security. We urge SCWA to develop a comprehensive multi-faceted water supply management plan, if such a plan has not already been developed. EPA also advocates aggressive water conservation and reclamation and implementation of multiple tools to facilitate a long-term sustainable balance between water supply and demand. We also wish to acknowledge the decision to reinitiate the NEPA public review process for the new site-specific water supply project.

We appreciate the opportunity to review this Notice of Intent. Please send two copies of Draft Environmental Impact Statement (DEIS) to this office at the same time it is officially filed with our Washington, D.C. office. If you have questions please call me at (415) 972-3852, email: fujii.laura@epa.gov.

Sincerely,

Laura Fujii
Federal Activities Office
Cross Media Division

Attachments: Detailed Comments, 9 pages
Filename: freeportebmudnoi.wpd
MI003927

cc: Gregg Ellis, FRWA
Tad Berkebile, FRWA Sacramento County
Maria Solis, FRWA EBMUD
Wayne White, USFWS, Sacramento
Jim Bybee, NMFS, Santa Rosa
COE, Sacramento District Office
Banky E. Curtis, CDFG
Katherine Kelly, DWR

DETAILED COMMENTS

National Environmental Policy Act Comments

1. The draft environmental impact statement (DEIS) should clearly describe the history, chronology, and relationship of the various East Bay Municipal Utility District (EBMUD) and Sacramento County Water Authority (SCWA) water supply planning efforts. We strongly recommend summaries of previous environmental reviews be included in the DEIS describing the proposed actions, alternatives, underlying assumptions and their conclusions. The goal is to clearly describe the historical context for the current water supply proposal and identify projects which have been already evaluated and eliminated. The DEIS should establish that the current environmental review is separable, stand-alone, or a tiered action in regards to these other water supply actions. For example, the DEIS should describe in detail the relationship of the current action with the EBMUD Supplemental Water Supply Project.

2. We recommend the DEIS include a clear description of the basic project need. The project purpose and alternatives should follow from this underlying need. The DEIS should describe potential direct, indirect, and cumulative impacts to the environment and mitigation for these impacts. Particular attention should focus on an evaluation of the environmental impacts of the proposal and alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options for the decision maker and the public (40 CFR 1502.14). The DEIS should clearly describe existing conditions, including information on existing water supply management and water allocation systems, surface water quality, drinking water quality and treatment systems, biological resources, and air quality. The DEIS should also describe current and historical litigation, tentative agreements, and the underlying assumptions, water rights, and legal mandates and restrictions (if any) of the proposed water supply actions and alternatives. Discuss the extent to which water quality and sensitive or unique habitats, if any, can be protected and improved.

Alternatives Analysis

1. We recommend consideration of project features which would help meet the project objectives, improve water use efficiencies, and provide increased flexibility and reliability for the proposed regional water project. Example features include water transfers, conjunctive use, aggressive water conservation measures, water pricing, and collaboration with the CALFED Bay-Delta Program on joint projects. We urge Reclamation and the Freeport Regional Water Authority (FRWA) to continue to work with CALFED and other water users in seeking additional opportunities for increasing water supply, water management flexibility, and water supply reliability.

2. The DEIS should persuasively demonstrate the need for the proposed project size and pumping capacity.

Effects Analysis

1. It is EPA's position that Reclamation and FRWA ensure that its decision to provide additional diversions from the Sacramento River is consistent with and supports the Central Valley Project Improvement Act (CVP IA) and CALFED Bay-Delta Program goals and proposed actions.

Recommendation:

We recommend the DEIS include a specific evaluation demonstrating that the proposed Freeport Regional Water Project is consistent with the goals of existing and ongoing efforts to restore the San Francisco Bay Delta, Sacramento River, and American River ecosystems. For example, the evaluation should clearly demonstrate that diversions to the Folsom South Canal and/or changes in flows in the Sacramento River, particularly during sensitive months and drier years, do not hinder riparian and fish restoration efforts or conflict with actions to improve and achieve water quality standards in the Sacramento River and San Francisco Bay Delta.

2. The evaluation of direct, indirect, and cumulative impacts should address the following:
   - Potential effects on surface and groundwater quality.
   - Potential effects on second and third parties. For instance, fully evaluate potential effect to downstream water purveyor such as the Contra Costa Water District.
   - Potential effects of the proposed quantity and schedule of water diversions.
   - Potential growth inducing effects. We recommend evaluating the effects of the proposed water project on the ability of Sacramento County and the EBMUD service area to meet SB 221 restrictions. SB221 prohibits approval of new developments of at least 500 units unless a sufficient water supply is available.

3. In the past, objections have been raised regarding completion of the Folsom South Canal and connection to the Mokelumne Aqueduct due to the fear that such a connection could encourage increased diversions from the American River.

Recommendation:

The DEIS should evaluate the implications of connecting the Folsom South Canal to the Mokelumne Aqueduct. Describe contractual controls, if any, and other potential guarantees to ensure no future American River diversions.

Baseline

The selection of the No Action alternative is a critical step in the environmental analysis since it provides the baseline for comparison with other action alternatives. It is EPA's position that the "no action" alternative is <u>not</u> a no impact baseline. EPA believes that to interpret the "no action" alternative as having "no impacts" may be inconsistent with NEPA regulations.

Continuation of the existing management situation could constitute a discretionary commitment of resources that is, effectively, an action affecting the environment. The alternatives analysis of the DEIS should portray the environmental consequences of every alternative...." in comparative form, thus sharply defining the issues and providing a clear basis for choice among options for the decision maker and the public." (40 CFR Part 1502.14).

The DEIS should document existing conditions; explain the changes which have occurred (e.g., pre-project and past impacts). Furthermore, the DEIS should adequately document cumulative impacts, including past, present and reasonably foreseeable actions. Past cumulative effects may have greatly influenced the "existing conditions" which should be documented in the DEIS and represent deficiencies (adverse impacts) which may be perpetuated under the action and no action alternatives. Furthermore, we do not believe it is sufficient to establish compliance with certain environmental protection laws (such as the Endangered Species Act and Clean Water Act), where the status quo may reflect unacceptable conditions and trends resulting from on-going activities, including water diversions (e.g., agricultural drainage problems such as selenium contamination). Nor will "current conditions" provide adequate guidelines for gauging desired levels of environmental restoration and enhancement. Information in the DEIS should assist in establishing the possible deficiencies in current conditions and defining possible restoration and enhancement goals.

Source Water Quality

EPA's position regarding source water quality is to support the use of water with the best water quality when all other considerations are equal. Regardless of the diversion point and water quality, additional treatment would likely be required to meet current and upcoming regulations. While the water quality at some diversion points offer incremental treatment savings over others, none are unreasonable. We are aware of potential public health issues from a number of "emerging" contaminants and the benefits for source water protection. We would recommend, for example, that EBMUD not site an intake below a wastewater treatment discharge point. However, these considerations should not dictate use of the highest quality water at the expense of other beneficial uses. For instance, the use of the highest quality source water should be weighed alongside other considerations, such as fisheries protection and potential effects on the water supply of others. We note that other utilities successfully treat other water sources, such as Delta water, to meet public health goals.

GENERAL SCOPING COMMENTS FOR WATER SUPPLY PROJECTS

Water Needs

Water Rights

We recommend the DEIS contain a section that describes water rights law, the water allocation process and regulations, and the history of water allocation in the Sacramento and

American River basin, focusing on allocation to SCWA and EBMUD. This basic information will help ensure the public and decisionmakers have a full understanding of the historical and legal context of the proposed water supply alternatives.

Environmental Water Needs

The DEIS should include full consideration of environmental water needs. EPA believes that it is inappropriate for water supply contracts and actions to address environmental restrictions on water allocations solely through the use of a "shortage provision." A shortage provision is an appropriate mechanism for providing flexibility in the event of future unanticipated environmental or other impositions on water use. However, it should not be used to implement existing environmental obligations under the Clean Water Act (CWA), Endangered Species Act (ESA), or Central Valley Project Improvement Act (CVPIA). These existing obligations should be factored into the assessment of water quantities available for the proposed water supply action. The DEIS should clearly demonstrate how the proposed water supply action will comply with the CWA, ESA, and CVPIA.

Documentation of Beneficial Use

Beneficial use should be defined in the DEIS. For instance, the DEIS should state how beneficial use will be interpreted, monitored, and whether and how differences in seasons and type of water use will be considered. We recommend development of a water budget for the basin which documents the water balance within the basin, including amounts of seepage and return flows, if any. Changes in within-district efficiency may well affect other uses within a basin by altering the quantity, timing, and quality of water available.

Water Supply and Demand

We strongly believe Reclamation should utilize tools such as pricing, conservation, conjunctive use, and monitoring and accounting to help improve supply reliability and ensure a balance between water supply and demand. These tools should be considered in all water supply alternatives and incorporated into the terms and conditions of the water supply contracts.

Pricing

It has been demonstrated over the last decade that variable pricing of water can significantly influence water demand and supply. Pricing which accurately reflects the economic and environmental costs of water increases the ability to ensure scarce supplies are used efficiently. The DEIS should include an in-depth discussion of pricing and how it will be utilized by the Reclamation in helping EBMUD and SCWA balance water demands and water supply.

Conservation

Conservation can play a critical role in managing water demand and supply, groundwater overdraft, and seawater intrusion. We note that the Reclamation Reform Act states the Secretary of the Interior shall use all legal existing authorities to encourage conservation. We urge Reclamation to consider conservation as a factor in allocation and as a possible condition of the water supply contract. We advocate use of conservation performance requirements in water supply contracts and strong assurances that certain levels of conservation will be attained. Contract terms should make clear that future CVP supplies are conditioned on continuing conservation efforts. We recommend the DEIS describe conservation and reclamation methods, ways to encourage conservation, improved irrigation technologies, and how conservation affects water markets.

We also recommend consideration of water measurement devices as a requirement for a federal water supply contract. We note that there is a lot of debate regarding the sort of measurement or metering requirements which are appropriate. The DEIS should describe the overall water measurement debate and clearly state which measurement devices or metering requirements are considered by Reclamation to be appropriate for CVP water supply contract assignments to EBMUD and SCWA.

Groundwater

Groundwater is a critical element in water supply and demand. Not only is it an alternative source to surface water supply, if used prudently, groundwater can provide significant flexibility in meeting demand at different times and from a number of different water sources. The DEIS should fully document groundwater sources - how, when, and by whom groundwater is used. Identify information gaps and where there are no direct groundwater measurements. The DEIS should document the historical and anticipated (in alternatives) relationship between CVP surface supplies and groundwater. There should also be documentation of long-term groundwater trends within the basin. EPA is concerned with potential tradeoffs between surface water and groundwater use. If applicable, we urge Reclamation to carefully evaluate the long-term implications, especially to third parties, of providing CVP surface water to avoid groundwater overdraft.

EPA supports the creation of groundwater management basins and institutional mechanisms to collect information, manage, and monitor groundwater use throughout California. The DEIS should address the need for measurement and management of the combined resources of surface and groundwater supplies to stabilize supplies over the long term. We suggest the DEIS evaluate the potential for conjunctive use, in order to provide water supply flexibility. Sufficient information should be disclosed about the objectives, requirements, and suitable locations for conjunctive use so that potential impacts can be fully evaluated.

Monitoring and Accounting

Effective and sustainable management of CVP water supplies depends on an accurate knowledge of water supply availability and water use. This knowledge can only be obtained through monitoring and accounting of water supply and demand. We urge Reclamation to make a firm commitment to timely and accurate monitoring and accounting. This commitment should include dedicated funding for this effort.

Shortages

EPA is concerned with contract quantities which may consistently exceed available water supply, thus creating "shortages". Contract supply commitments should be tailored to reflect supplies reasonably expected to be available under varying conditions (e.g., wet versus dry years). We fear that retaining contract quantities which may frequently exceed available supplies gives the impression of unreliable commitments and may imply a "need" to develop additional supplies. Often development of "new supplies" is only reallocation of scarce water from environmental in-stream beneficial uses to consumptive uses.

EPA advocates an approach which is focused on efficient use and management of existing scarce water supplies. The quantity of allocated water in the contracts should be based on existing, developed project supplies and not on contractors' needs, demands, or anticipated additional supplies. We strongly urge Reclamation to avoid contract quantity commitments exceeding expected supplies and to avoid allocating shortages relative to inflated supply commitments.

From the contractors' perspective, there may be times when shortages are unavoidable and will need to be addressed. As stated above, EPA advocates the use of multiple tools by Reclamation to help contractors plan and manage for supply reliability, including during shortage periods.

Fish and Wildlife Issues

We recommend the DEIS evaluate direct, indirect, and cumulative impacts to fish and wildlife in the Sacramento River and American River basins. The DEIS should evaluate the ability to restore or enhance fish and wildlife habitat and wetlands which may have been affected by water diversions and by changes in flows, timing, and water quality as a result of CVP water supplies. This evaluation should "follow the impacts" and examine the impacts that may extend beyond the Sacramento County or EBMUD boundaries. The evaluation of environmental requirements should consider flows, temperature needs, seasonality, and other water quality components and factors of critical importance to threatened and endangered species.

Water Quality Issues

EPA believes that water requirements to meet water quality standards and protect beneficial uses established by either the EPA or the State of California (State), pursuant to the federal Clean Water Act, must be satisfied before allocation to water supply contracts. Due to the need to meet water quality standards, we wish to highlight the need for flexibility in the water supply contract terms and conditions to ensure adaptability to potential changes in water policy and water quality standards.

General Water Quality Comments

1. The DEIS should discuss the proposed regional water project's compliance with State and local water quality management plans and State-adopted, EPA-approved water quality standards. The proposed action should be fully coordinated with the appropriate State Water Quality Control Agency to ensure protection of water quality and maintenance of beneficial uses.

2. Evaluate the potential of the proposed action to cause adverse aquatic impacts such as increased siltation and turbidity in surface water sources; changes in water quality and quantity; changes in dissolved oxygen, and temperature; and habitat deterioration. Include a discussion on in-stream flow impacts of water diversions and return flows.

3. Identify sensitive aquatic sites such as wetlands which are currently present. Outline past and potential beneficial uses of these areas, and disclose potential impacts from the proposed action.

4. Discuss specific monitoring programs that are in place or will be implemented to determine potential impacts on surface, groundwater, and drinking water quality and beneficial uses. Evaluate whether maintenance and protection of water quality can be guaranteed.

Wetlands: Section 404 of the CWA

The DEIS should identify impacts to water, floodplains, and wetlands, including identification of Section 404 Clean Water Act (CWA) requirements, and management and mitigation proposals to ensure compliance with these requirements.

EPA will review the proposed pipeline, intake facility, and pumping plants for compliance with the Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Materials (40 CFR 230) [hereafter referred to as the Guidelines], promulgated pursuant to Section 404(b)(1) of the Clean Water Act (CWA). To comply with the Guidelines, the proposed actions must meet all of the following criteria:

- There is no practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem (40 CFR 230.10(a)).

- The proposed action does not violate State water quality standards, toxic effluent standards, or jeopardize the continued existence of federally listed species or their critical habitat (40 CFR 230.10(b)).

- The proposed action will not cause or contribute to significant degradation of waters of the United States, including wetlands (40 CFR 230.10(c)). Significant degradation includes loss of fish and wildlife habitat, including cumulative losses.

- All appropriate and practicable steps are taken to minimize adverse impacts on the aquatic ecosystem (i.e., mitigation) (40 CFR 230.10(d)). This includes incorporation of all appropriate and practicable compensation measures for unavoidable losses to waters of the United States, including wetlands. The DEIS should fully address the feasibility of "in-kind" habitat mitigation measures.

Air Quality

1. The DEIS should provide a detailed discussion of air quality standards, ambient conditions, and potential air quality impacts, for the region. Include a description of current and proposed activities and their impacts on air quality. The fact that potential impacts may be equal to or less than potential impacts under "no action" does not eliminate the requirement for full disclosure pursuant to NEPA. Cumulative and indirect impacts should be fully evaluated. For instance, development or modified use of surrounding lands (e.g., conversion to urban, different cropping patterns) could influence sources of PM10.

2. Federal agencies are required by the Clean Air Act to assure that actions conform to an approved air quality implementation plan. If the proposed project area is in a nonattainment area, Reclamation may need to demonstrate compliance with general conformity requirements of the Clean Air Act [Section 176(c)]. General Conformity Regulations can be found in 40 CFR Parts 51 and 93 (58 Federal Register, page 63214, November 30, 1993). These regulations should be examined for applicability to the proposed actions.

3. EPA issued revised standards for ozone and small particulate matter (PM2.5)(smog and soot) in July 1997. Implementation of these standards are pending the designation of nonattainment areas and development of specific regulatory requirements. The adverse health effects of ozone and PM2.5 are well known. Thus, we believe the DEIS should evaluate the extent that the proposed project may release significant amounts of these pollutants.

Recommendations:

We recommend the Air Quality section of the "Affected Environment" chapter, include a description of the new ozone and PM2.5 standards, their health effects, and disclose what, if any, monitoring has been done in the project area for these pollutants. Possible sources that may contribute to high levels of ozone and

PM2.5 emissions include construction equipment, mobile sources, and high volumes of diesel truck traffic.

The DEIS should identify sensitive receptors. These include children (schools, preschools, parks, playgrounds), elderly (retirement homes), infirm (hospitals), and athletes (gymnasiums, tracks, pools).

We also encourage mitigation to the maximum extent possible. Mitigation measures may include air emission credits, keeping diesel engines well tuned, retrofitting diesel engines, using machinery that uses alternative fuels, scheduling construction to minimize impacts to sensitive receptors, implementing seasonal control programs, and investigating opportunities to minimize land clearing.

General Comments

Environmental Justice

In keeping with Executive Order 12898, **Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations** (EO 12898), the DEIS should describe the measures taken by Reclamation to: 1) fully analyze the environmental effects of the proposed Federal action on minority communities, e.g. Indian Tribes, and low-income populations, and 2) present opportunities for affected communities to provide input into the NEPA process. The intent and requirements of EO 12898 are clearly illustrated in the President's February 11, 1994 Memorandum for the Heads of all Departments and Agencies.

Miscellaneous Comments

1. If references to previous documents are used, the DEIS should provide a summary of critical issues, assumptions, and decisions complete enough to stand alone without depending upon continued referencing of the other documents.

DEPARTMENT OF TRANSPORTATION
P.O. BOX 2048 (1976 E. CHARTER WAY)
STOCKTON, CA 95201
TDD (209) 948-7981
PHONE (209) 941-1921
FAX (209) 948-7194

Flex your power!
Be energy efficient!

April 4, 2002

Notice of Preparation/
Notice of Intent
Freeport Regional Water Project

Mr. Gregg Ellis
Freeport Regional Water Project
2600 V Street
Sacramento, CA 95818

Dear Mr. Ellis:

Caltrans has reviewed the Notice of Preparation/Notice of Intent for the Freeport Regional Water Project. The project proposes to, "Increase water service reliability for customers, reduce rationing during droughts, and facilitate conjunctive use of groundwater supplies in central Sacramento County." Caltrans has the following comments:

The proposed pipeline as part of this project will cross State Routes 99 and 88. The use of California State Highways for other than normal transportation purposes may require written authorization from Caltrans in the form of an Encroachment Permit. The environmental document prepared for the project that includes Caltrans right of way must be submitted with the Encroachment Permit application. At a minimum, documentation of cultural (archaeological), biological, and hazardous waste surveys within Caltrans right of way are required.

For cultural surveys a recent record search from the information center and an Archaeological Survey Report are required.

A Natural Environment Study report shall be written documenting the results of biological surveys and the record search from the California Department of Fish and Game Natural Diversity Database. A qualified biologist should conduct surveys at the appropriate time of year to determine if listed plant or animal species or wetlands occur in the area. Surveys should meet the protocol standards of the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

If right of way is being dedicated to Caltrans, the applicant is required to submit a copy of Attachment A, confirming that the land to be dedicated to Caltrans is free of hazardous waste. Even if right of way is not being dedicated to Caltrans it is a good practice to conduct a record search to obtain known hazardous waste locations.

It is highly recommended to contact the Native American Heritage Commission (NAHC) at 915 Capitol Mall, Room 364, Sacramento, CA, 95814, (916) 653-4082, fax (916) 657-5390. The results of the information from NAHC should be used to consult with Native American Tribes and groups regarding concerns within the project area.

For more information on Encroachment Permits and their requirements, please visit our web page at http://www.dot.ca.gov/doingbusiness.html then click on Encroachment Permits.

If you have any questions or would like to discuss our decision these comments in more detail, please contact Mike Higgins at (209) 948-3996 (e-mail: mhiggins@dot.ca.gov).

Sincerely,

TOM DUMAS, Chief
Office of Intermodal Planning

STATE OF CALIFORNIA
GRAY DAVIS, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
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California Relay Service From TDD Phone **1-800-735-2922**
from Voice Phone **1-800-735-2929**

Contact Phone: **(916) 574-1868**
Contact FAX: **(916) 574-1885**

April 17, 2002

File Ref: SCH#2002032132

Ms. Nadell Gayou
The Resources Agency
901 P Street
Sacramento, CA 95814

Mr. Ted Berkebile
Freeport Regional Water Authority
827 7th Street, Room 301
Sacramento, CA 95814

Dear Ms. Gayou and Mr. Berkebile:

Staff of the California State Lands Commission (CSLC or Commission) has reviewed the Notice of Preparation for the Freeport Regional Water Project, SCH#2002032132. The CSLC is a Responsible Agency under the California Environmental Quality Act. Based on this review, we offer the following comments.

Jurisdiction

The State acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all the people of the State for statewide Public Trust purposes which include waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. The landward boundaries of the State's sovereign interests in areas that are subject to tidal action are generally based upon the ordinary high water marks of these waterways as they last naturally existed. The entire non-tidal navigable waterway between the ordinary high water marks is subject to the Public Trust. The State's sovereign interests are under the jurisdiction of the State Lands Commission.

Any activities involving the State sovereign lands, including the Sacramento and Mokelumne Rivers, may require a lease from the Commission. Please contact Diane Jones, Public Land Manager, for any questions concerning our leasing requirements.

Environmental Review

To the extent that the proposed project will involve a pipeline crossing under a navigable waterway under the jurisdiction of the CSLC utilizing the horizontal directional drilling method, all potential impacts to water quality should be evaluated and minimized to prevent a fracture of the substrate during the drilling procedure and release of drilling fluids into the waterway directly or indirectly. Geotechnical evaluation is needed in the review process to determine the most suitable method and depth for crossing under a waterway. In addition, the geotechnical evaluation can make recommendations for the fluid types and strengths needed, as well as recommend the use of support casings to prevent shallow surface releases, or other recommendations to maintain geological stability. We recommend and would require a Groundwater Intrusion Plan (if necessary), Drilling Fluid Material Data Safety Sheet, Subsurface Rupture Contingency Plan, Hazardous Materials Contingency Plan, and an Abandonment Contingency Plan (this is in the event that an attempted bore is unsuccessful).

We appreciate the opportunity to comment on the Notice of Preparation, and look forward to reviewing the DEIR when it is available. Please contact Judy Brown at (916) 574-1868 for any questions regarding environmental review.

Sincerely,

Stephen L. Jenkins, Assistant Chief
Division of Environmental
Planning and Management

cc: Diane Jones

STATE OF CALIFORNIA-BUSINESS TRANSPORTATION AND HOUSING AGENCY
GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 3, SACRAMENTO AREA OFFICE - MS 41
P.O. BOX 942874
SACRAMENTO, CA 94274-0001
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FAX (916) 323-7669
Telephone (916) 324-6642

May 2, 2002

02SAC0037
03-SAC-5, 99, 160
Freeport Regional Water Project
Notice of Preparation
SCH#2002032132

Mr. Ted Berkebile
Freeport Regional Water Authority
827 7th Street, Room 301
Sacramento, CA 95814

Dear Mr. Berkebile:

Thank you for the opportunity to review and comment on the Freeport Regional Water Project. Our comments are as follows:

- Any pipeline crossings or other work to be performed within Caltrans right of way will require an encroachment permit(s). For permit assistance, please contact Bruce Capaul at (530) 741- 4408.

- Traffic Management Plans (TMPs) should be prepared and submitted for Caltrans review to minimize traffic impacts at the Interstate 5, State Route (SR) 99 and SR160 locations proposed for pipeline crossings. The TMPs should discuss the expected dates, duration and location of each site's pipeline construction, as well as traffic mitigation measures (e g:, night operations). We recommend that to the extent possible, the applicant limit truck trips during morning and evening peak traffic periods (6-9 AM and 3-6 PM) to avoid exacerbating congestion in the vicinity of intersections and freeway interchanges.

- Pipeline under crossings should be installed by boring and jacking, directional drilling, or another method meeting Caltrans approval. Tunneling under freeways and expressways is considered under the following conditions:

  -Studies establish that the soil structure is sufficiently stable.

-Permanent tunnel portals usually shall be located outside of the ultimate right-of-way line or access control line (if those do not coincide).

- Consideration may be given to a portal within the access control line provided that 1) it will not adversely affect freeway operation, 2) it will be beyond the toe of slope of current and future embankments, and 3) prior approval is given by Caltrans.

- Placement of the pipeline for freeway under crossings should be in casings extending beyond the access control limits to assure that the pipeline (1) can be installed and removed from outside of State right-of-way; (2) has a reduced potential that water leaks would flow into State right-of-way and compromise ground features beneath the travel way with a number of possible ill effects; and (3) is protected from damage during maintenance and roadway capacity-increasing construction activities. Any other option, besides pipeline casing, must be approved by Caltrans. The following information should be provided to Caltrans - District 03 prior to the permit request to expedite the process:

  - Type of pipe used
  - Line pressure and flow volumes
  - Type of casing or other measures planned to prevent leaks over the long term, especially if there are to be joints or sealed connections in the State's right-of-way

- Any material to be removed from State right-of-way, e.g. during drilling or boring and jacking, must be disposed of properly. The potential for both soil and/or groundwater contamination must be assessed prior to construction. The project documentation should include an inventory of potential hazardous waste/contamination properties along the pipeline route and should discuss how the potential for contamination was evaluated in the vicinity of State highways and freeways.

- We recommend that soil and groundwater sampling be conducted prior to construction. This information will determine if special handling and disposal of waste soil and water is necessary and if any special health and safety issues exist for site workers.

- Any new or replacement pipes crossing Interstate 5 must be bored or jacked at a minimum depth of 36".

- No longitudinal pipeline installation is allowed inside access controlled rights-of-way along freeways. Pipeline crossings of access controlled rights-of-way must be right angle crossings (within 30 degrees).

- If multiple permits are sought and there is a question whether State right-of-way will be encroached upon, the actual right-of-way may have to be identified before an encroachment permit can be issued. For assistance, contact Scott Jackson, Caltrans District 3, Right-of-Way Engineering at (530) 741-4307.

- Caltrans would likely coordinate our roadway maintenance activities, if possible, to coincide with water project phasing.

- Soon after the close of the project, the precise location of all new and out-of-service pipes with dimensions should be documented and shared with Caltrans.

- The precise location of the pipeline crossing installations in relation to State highway and freeway right of way lines and structures should be provided to Caltrans on "As-Built" plans.

Please provide our office with copies of the requested information, the DEIR and relevant mitigation measures as they are made available for our review. If you have any further questions regarding these comments, please contact Ken Champion at (916) 324-6642.

JEFFREY PULVERMAN, Chief
Office of Regional Planning

c: Katie Shulte Joung, State Clearinghouse

STATE OF CALIFORNIA -- THE RESOURCES AGENCY
GRAY DAVIS, Governor

DEPARTMENT OF WATER RESOURCES
416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

APR 17 2002

Mr. Gregg Ellis
Freeport Regional Water Authority
2600 V Street
Sacramento, California 95818

Dear Mr. Ellis:

Staff for the Department of Water Resources has reviewed Notice of Intent for the Freeport Regional Water Project and has the following comments:

A portion of the Freeport Regional Water Project encroaches into the Sacramento River Plan of Flood Control, which is within the jurisdiction and under the authority of The Reclamation Board. The California Code of Regulations, Title 23, Waters, Article 3, require that a Board permit be obtained before the start of any work including excavation and construction activities where The Reclamation Board has jurisdiction.

If you have any questions, please call me at (916) 653-0402, or Steve Dawson, at (916) 653-9898.

Sincerely,

Sterling Sorenson

Sterling Sorenson, Engineering Associate
Floodway Protection Section

A Public Agency

AMADOR Water Agency FOUNDED 1955

12800 RIDGE ROAD, SUTTER CREEK, CA 95685-9630 • (209) 223-3018
FAX: (209) 257-5281

April 19, 2002

Freeport Regional Water Project
c/o Gregg Ellis
2600 V Street
Sacramento, CA 95818

Dear Mr. Ellis:

The Amador Water Agency has no comment at this time regarding the proposed Freeport Regional Water Project. Please place the Amador Water Agency on the mailing list for all notices regarding the environmental review of the Project. The mailing address is:

Jim Abercrombie, General Manager
Amador Water Agency
12800 Ridge Road
Sutter Creek, CA 95685

Thank you.

Sincerely,

Jim Abercrombie
General Manager

c.c. Files
JA/kt

Comment Card
Freeport Regional Water Project

Date: 4-19-02

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: ROYA BORMAN Title (if applicable): SR. MECHANICAL ENGR

Telephone: 916.732.7132 Fax: 916.732.6924

Organization/Business (if applicable): SMUD Email: rborman@smud.org

Address: 6201 S STREET

City: SACRAMENTO State: CA Zip: 95682

☒ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

YOUR PROJECT AND YOUR ALTERNATE ROUTES CROSSES OUR PIPELINE IN SEVERAL PLACES. PLEASE KEEP US ON YOUR REVIEWER LIST FOR PRELIMINARY DESIGN & THE PROJECT PROGRESS REPORTS

ROYA BORMAN

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

WARREN H. HARADA, Administrator
THOMAS J. ZLOTKOWSKI, Director, Department of Transportation

COUNTY OF SACRAMENTO
PUBLIC WORKS AGENCY

DEPARTMENT OF TRANSPORTATION
906 G Street, Suite 510
Sacramento, California 95814-1812
(916) 874-6291/5966 • Fax No. (916) 874-7831

April 25, 2002

Mr. Gregg Ellis
Freeport Regional Water Project
Jones and Stokes Associates
2600 V Street
Sacramento, CA 95818

Subject: Notice of Preparation and Notice of Intent of a Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Freeport Regional Water Project

Dear Mr. Ellis:

The Sacramento County Department of Transportation has reviewed the NOP and NOI for the above-referenced project. We have concerns regarding the possible routing of the proposed water pipeline along any alignment that includes Calvine Road, east of State Route 99. The closure of lanes on Calvine Road, for construction of the pipeline, could result in significant traffic impacts on Calvine Road, as Calvine Road serves a number of major land uses including the Sheldon High School/Smedberg Middle School complex. The Department is in the process of finalizing the design of the widening of Calvine Road from Kingsbridge Drive to Vineyard Road. This project is scheduled to begin construction next year (2003). The completion of the widening of Calvine Road would trigger the County trench cut moratorium for that section of Calvine Road. The segment of Calvine Road, from Elk Grove-Florin Road to Kingsbridge Drive, is currently covered by the trench cut moratorium, as that stretch of road widened in 1999.

To reduce traffic impacts from the construction of the project we recommend that the pipeline be installed along one of the following routes. All of the routes described below are on roads that have lower traffic volumes then the Calvine Road route:

1. Florin Road: from Sunrise Boulevard to Elk Grove-Florin Road, Elk Grove-Florin Road: from Florin Road to Gerber Road, Gerber Road: from Elk Grove-Florin Road to Power Inn Road, Power Inn Road: from Gerber Road to Calvine Road, and Calvine Road/Cosumnes River Boulevard: west from Power Inn Road.

2. Florin Road: from Sunrise Boulevard to Excelsior Road, Excelsior Road: from Florin Road to Gerber Road, Gerber Road: from Excelsior Road to Power Inn Road, Power Inn

Road: from Gerber Road to Calvine Road, and Calvine Road/Cosumnes River Boulevard: west from Power Inn Road.

3. Grant Line Road: Sunrise Boulevard to Sheldon Road, Sheldon Road: from Grant Line Road to Bruceville Road, and Bruceville Road and Cosumnes River Boulevard: north and west from Sheldon Road.

Other issues include:

1. Trench cut fees. The fees are based on pavement conditions. That is, the better the pavement condition the higher the fees.

2. The Calvine Road route could have an impact on the ability to serve developing areas north of Calvine Road with gravity sewer service. Check with the Department of Water Quality regarding this issue.

3. Traffic control plans will need to be coordinated with the Department of Transportation Right of Way Management Section.

4. The Department would be interested in discussing the possibility of doing a joint work effort in the segment of Elk Grove-Florin Road, from Florin Road to Gerber Road, if that route is chosen.

The Department looks forward to working with you in the preparation of the EIR/EIS on this important project.

If you have any questions please call me at 874-5966.

Sincerely,

Jeffrey E. Clark, P.E., T.E.
Senior Civil Engineer

JEC:jec

c. Mike Penrose
Theron Roschen
Matt Satow

State Water Contractors

455 Capitol Mall, Suite 220 • Sacramento, CA 95814-4409
John C. Coburn General Manager (916) 447-7357 • FAX 447-2734

April 30, 2002

Mr. Gregg Ellis
2600 V Street
Sacramento, CA 95818

Dear Mr. Ellis:

The State Water Contractors[1] have the following comments on the proposed Freeport Regional Water Project (FRWP):

- CalFed – The CalFed Program is designed to address many of the problems currently facing the Sacramento-San Joaquin Delta. Phase 1 of the program is designed to spend $8.7 billion of dollars over its seven year implementation period. It seems to be very risky to begin a project such as this before we can see how the overall CalFed program is going to come together. It would seem to make more sense to include the Freeport Project in the overall mix of projects that will address all of the concerns of the environment, East Bay Municipal Utility District (EBMUD) and the Delta exporters. Since other water users have been vitally interested over the past 30 years in developing a similar type canal around the Delta that you are proposing, why not wait until the CalFed process is complete and we can build just one canal that would serve all the interests of the State, not just the EBMUD service area.

- Endangered Species – The FRWP must address the impact of the project on endangered species in the Sacramento River and Delta. Both the winter-run Chinook salmon and the Delta smelt are listed under the Federal Endangered Species Act and could be impacted by the project diversions.

[1] Alameda County Flood Control & Water Conservation District, Zone 7; Alameda County Water District; Antelope Valley-East Kern Water Agency; Casitas Municipal Water District on behalf of the Ventura County Flood Control District; Castaic Lake Water Agency; Central Coast Water Authority on behalf of the Santa Barbara County FC&WCD; City of Yuba City; Coachella Valley Water District; County of Kings; Crestline-Lake Arrowhead Water Agency; Desert Water Agency; Dudley Ridge Water District; Empire-West Side Irrigation District; Kern County Water Agency; Littlerock Creek Irrigation District; The Metropolitan Water District of Southern California ("Metropolitan"); Mojave Water Agency; Napa County FC&WCD; Oak Flat Water District; Palmdale Water District; San Bernardino Valley Municipal Water District; San Gabriel Valley MWD; San Gorgonio Pass Water Agency; San Luis Obispo Co. FC&WCD; Santa Clara Valley Water District; Solano County Water Agency; and Tulare Lake Basin Water Storage District.

- Alternatives to project – The FRWP must address the basic need for the project itself. Can the demands be met with other projects such as water reclamation or water conservation programs? Also, for the EBMUD portion of the project, the planning needs are based upon extremely conservative projections on future hydrologic conditions. Is the project need based upon reasonable future demands?

- Downstream Water Users - The diversion of 185 million gallons per day in a dry year can have unavoidable impacts on the on both the water quality and quantity to the downstream water users.

Thank you for the opportunity to provide comments on the proposed project. We look forward to reviewing the draft Environmental Impact Report when it is released this fall.

Sincerely,

John C. Coburn
General Manager

XC: Member Agencies
Steve Macaulay, DWR

Comment Card

Freeport Regional Water Project

Date: 4/12/02

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: Edward J. Cox Title (if applicable):

Telephone: 916-264-8434 Fax:

Organization/Business (if applicable): City of Sacramento Email: ecox@cityofsacramento.org

Address: 927 10th Street

City: Sacramento State: CA Zip: 95814

☒ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

The project should state how it may positively or negatively impact adopted alignments of bikeways in the 2010 City/County Bikeway Master Plan. In addition, consideration towards how public access to the river may be provided if the Freeport Reservoir site is chosen.

Coordination of the interface with the Folsom South Canal should be brought to Bob Ireland of County Transportation 874-6743.

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

Harlan Gynes

RECEIVED
FEB 27 2003

County of Yolo

PLANNING AND PUBLIC WORKS DEPARTMENT
292 West Beamer Street Woodland, CA 95695-2598 (530) 666-8775 FAX (530) 666-8728
www.yolocounty.org

JOHN BENCOMO
DIRECTOR

February 26, 2003

Eric F. Mische, General Manager
Freeport Regional Water Authority
1510 J Street, Suite 140
Sacramento CA 95814

Dear Mr. Mische:

SUBJECT: Proposed Freeport Regional Water Project

Your presentation to the Yolo County Board of Supervisors about the proposed Freeport Regional Water Project was very informative. As we discussed after the presentation, staff will continue to work with you to assure that you are provided with input regarding areas of interest and issues of concern, from the County's perspective, throughout the environmental review process. Following is a brief summary of areas and issues noted, to date, that need to be clarified and addressed.

GROUNDWATER:

- Aquifer overdraft, particularly in areas already subject to limited groundwater resources, including upstream areas such as Yolo-Zamora;
- Regional and cumulative competing demands impacting or benefiting potential conjunctive use opportunities; and
- Potential (even minimal) impacts to agricultural, and related, uses of groundwater including farming practices, infrastructure, and regional socio-economic effects.

WATER QUALITY:

- Potential for downstream impacts, particularly to Delta and fishery resources;
- Downstream impacts having the potential for affecting Reclamation District facilities;
- Back-flow and upstream salinity transport;
- Increased turbidity and velocity resulting in increased suspension of solids; and
- Impacts to habitat having the potential to cause changes in seasonal use and alter species attraction;

LAND USE:

- Impacts to riparian habitat, particularly with respect to any disturbance of oak trees;
- Selected sites for upland, as well as crossing facilities and structures, should be confirmed and alternatives considered in selection process should be documented;
- The need for acquisitions or easements should be addressed;
- Any encroachment on upland use, public access, or recreational use should be discussed;
- Benefits and incentives pertaining to Yolo County, such as flood protection (if applicable) should be clarified;
- Levee impacts such as subsidence, erosion, scour and seepage or benefits such as bank stabilization and protection should be discussed;

- Potential impacts and benefits to Yolo Bypass activities facilitated by the Yolo Basin Foundation should be analyzed;
- Potential impacts to the University of California, Davis and the cities of Davis, Yolo, West Sacramento and Woodland should be fully analyzed; and
- Potential impacts to landfill operations, related water use and recycling needs, and waste pond impacts should be analyzed.

CUMULATIVE IMPACTS TO EXISTING SYSTEM:

- The type of modeling necessary to determine potential impacts to the existing system, resulting in displacement of existing capacity, should be implemented taking into consideration known proposed projects such as the SAFCA Regional Project, the West Sacramento/Sacramento Waterfront Master Plans, the Freeport Marina and Captains Table expansions;
- Projected fluctuation in river flows resulting from the proposed diversion should be taken into consideration as to impacts on recreational facilities such as existing marinas;
- Scenarios of surface water use that were analyzed (worse case, etc.) should be documented; and
- Incidental impacts to Yolo County resulting from potential benefits to Sacramento County should be considered and discussed.

MONITORING AND MITIGATION:

- A process for the collection of scientific data to be used for projecting unanticipated impacts should be developed and implemented;
- A process for establishing a mechanism for the funding of mitigation should be put in place;
- The potential for third-party liability should be addressed;
- Agreements executed for implementation of the project should provide flexibility for assuring that unanticipated, as well as anticipated, impacts to Yolo County are addressed; and
- Alternative water use plans during the years free of demand should be clarified.

Please continue to provide the County with the opportunity to provide input and comment throughout the project development and environmental review process. My contact number is (530) 666-8019. Thank you again for taking the time to make your presentation before the Board of Supervisors.

Sincerely,

Linda Fiack

Linda Fiack
Parks and Resources Manager

cc: Yolo County Board of Supervisors

Comment Card

Freeport Regional Water Project

Date: 4-11-02

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: Butch Hodgkins Title (if applicable): Ex. Dir.

Telephone: 916-874-7606 Fax: 916-874-8289

Organization/Business (if applicable): Sacto Area Flood Control Email: hodgkinsbe

Address: 9/1007 7th Street, 7th Floor

City: Sacto State: Ca Zip: 95814

☐ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

1. There is a possible flood control project along the east levee of the Sacto River that could effect this project.
2. Though not necessarily a NEPA/CEQA issue, the matter of underseepage and its implication for flood risk should be seriously considered. SAFCA would be pleased to discuss this concern with project staff.
3. levee crossings and river work will require careful review of SAFCA, Rec. Board and Corps.
4. Project staff should familiarize themselves with the Sacto River Corridor Flood Mgt Forum.

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

10545 Armstrong Avenue
Mather
California
95655
Tele: [916] 876-6000
Fax: [916] 876-6160
Website: www.srcsd.com

May 9, 2002

Mr. Gregg Ellis
Freeport Regional Water Project
2600 V Street
Sacramento, CA 95818

Dear Gregg Ellis:

Subject: Notice of Preparation (NOP) and Notice of Intent (NOI) for the Freeport Regional Water Project, Sacramento California; Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)

The Sacramento Regional County Sanitation District (SRCSD) recognizes the significant local and regional support for the subject project and the water supply benefits it will bring to the Sacramento Region, and appreciates this opportunity to comment on the subject NOP/NOI. The SRCSD is a publicly owned wastewater agency serving over one million people, providing wastewater conveyance and treatment for the major Sacramento Metropolitan Area. The SRCSD owns the Sacramento Regional Wastewater Treatment Plant (SRWTP) and is responsible for its operation. Treated wastewater that is discharged into the Sacramento River at a point below the town of Freeport must comply with strict water quality limits that are specified in the SRWTP discharge permit.

The SRCSD is interested in the subject project as it could affect the operation of the SRWTP and requirements specified in the SRWTP discharge permit. SRCSD believes that the EIR/EIS needs to:

1. address impacts to river water quantity and quality due to reduced river flows resulting from the proposed project.
2. consider the impact of reduced river flows on operational parameters and restrictions for discharge at SRWTP.
3. address cumulative impacts due to other projects proposed in the watershed.
4. address reverse river flows and how they may impact the proposed project as well as SRWTP operation due to the nearby downstream SRWTP discharge point.
5. consider the SRCSD proposal to construct a recycled water pipeline in parallel with the Freeport Project's proposed raw water pipeline.
6. address efforts to coordinate and mitigate any conflicts along the proposed raw water pipeline alignment with the existing and future SRCSD interceptors.

The SRCSD appreciates the opportunity to attend the Freeport Regional Water Project technical meetings to coordinate the various related agency projects, and looks forward to continuing that relationship. These meetings provide a forum to discuss the above issues and concerns. SRCSD staff is available to answer any questions that you may have. Please add my name to your mailing list and send related documents to: 10545 Armstrong Avenue; Mather, CA 95655. If you have any questions, please contact me at (916) 876-6038.

Sincerely,

Mary S. James
Senior Engineer

cc: R. Shanks
W. Kido
M. Snyder
S. Dean
R. Seyfried
T. Berkebile
R. Caikoski

THOMAS R. FLINN
DIRECTOR

THOMAS M. GAU
DEPUTY DIRECTOR

JAMES F. PAYTON
BUSINESS ADMINISTRATOR

MANUEL SOLORIO
DEPUTY DIRECTOR

STEVEN WINKLER
DEPUTY DIRECTOR

Public Works
San Joaquin County
Working for YOU

P. O. BOX 1810 - 1810 E. HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201
(209) 468-3000 FAX (209) 468-2999
www.co.san-joaquin.ca.us

Freeport Regional Water Project
c/o Mr. Gerald Schwartz
Post Office Box 322
Herald, California 95638

SUBJECT: RESPONSE TO THE NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT FOR THE FREEPORT REGIONAL WATER PROJECT

Dear Mr. Schwartz:

On behalf of the San Joaquin County Flood Control and Water Conservation District (District) and the Northeastern San Joaquin County Groundwater Banking Authority (GBA), I respectfully submit the following comments regarding the preparation of the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Freeport Regional Water Project (FRWP). Comments were solicited from various water districts and agencies within San Joaquin County including members of the GBA and the District Advisory Water Commission.

Comment 1:

San Joaquin County and other regional partners would benefit tremendously from the use of excess conveyance capacity or from the unused portion of the water available to the Freeport Regional Water Authority. Regional partners, such as South Sacramento County and Northeastern San Joaquin County, would utilize the excess capacity and water for conjunctive use programs aimed at eliminating overdraft and mitigating saline water intrusion. It is suggested that the cumulative impacts of such projects are analyzed in the EIR/EIS.

Comment 2:

Considering the terrain through which the proposed pipeline traverses, the GBA and the District suggest that the FRWP EIR/EIS consider water deliveries along the pipeline alignment through a series of turnouts. The benefits of such turnouts include cost savings and the ability to utilize existing conveyance for future projects. Turnouts along the FRWP'S pipeline and the

Mokelumne Aqueducts could benefit regional projects such as the proposed Duck Creek Reservoir, which is under preliminary development by the Mokelumne River Water and Power Authority.

Comment 3:

The GBA and the District support the evaluation of a diversion alternative in the Delta to meet the needs of the East Bay Municipal Utility District. Such a diversion allows for beneficial in-Delta use during critically dry years.

Comment 4:

The Northeastern San Joaquin County Groundwater Banking Authority and the San Joaquin County Flood Control and Water Conservation District would prefer a completed 100 MGD pipeline project. We are sure the right-of-way acquired for the pipeline will be sized to allow for either an additional pipeline or canal. An idea that should not be overlooked is to design the entire project from the diversion at Freeport to the connection at the Mokelumne Aqueducts with room for additional pipelines for future use of the Freeport Regional Water Project.

If you have any questions regarding the comments provided for the Environmental Impact Report/Environmental Impact Statement for the Freeport Regional Water Project, please feel free to contact me at (209) 468-3089.

Sincerely,

MEL LYTLE
Water Resources Coordinator

ML:BN:ll
WR-2G107-L1

c: T. R. Flinn, Director of Public Works
Thomas Gau, Deputy Director/Development

Regional Transit

Sacramento Regional Transit District
A Public Transit Agency and Equal Opportunity Employer

Mailing Address:
P.O. Box 2110
Sacramento, CA 95812-2110

Administrative Office:
1400 29th Street
Sacramento, CA 95816
(916) 321-2800
29th St. Light Rail Station/ Bus 36,38,50,67,68

Light Rail Office:
2700 Academy Way
Sacramento, CA 95815
(916) 648-8400

Public Transit Since 1973

April 2, 2002

Gregg Ellis
Freeport Regional Water Project
2600 V Street
Sacramento, CA 95818

Subject: Notice of Preparation/ Notice of Intent (NOP/ NOI) for the Freeport Regional Water Project, Sacramento, California

Dear Mr. Ellis:

This is in response to the NOP/ NOI for the above referenced project. In that regard, the Sacramento Regional Transit District (RT) is pursuing the study of the South Line Phase 2 Light Rail Extension. This work was initiated with the identification of a Locally Preferred Alternative (LPA) light rail alignment extending south of the City of Sacramento to the Laguna and Elk Grove area.

Phase 1 of the extension is under construction from downtown Sacramento to Meadowview Road. The Phase 2 extension would continue south along the existing UPRR track alignment from Meadowview Road, run along Cosumnes River Boulevard, then past Cosumnes River College, cross Highway 99 and end at Calvine Road and Auberry Drive (see Map 1, attached). A Final Environmental Impact Statement/ Final Subsequent Environmental Impact Report was prepared for Phase 1 of the South Sacramento Corridor (from downtown Sacramento to the Meadowview Road) in February 1997. This document supplemented a 1994 Alternatives Analaysis/Draft Environmental Impact Statement/Draft Environmental Impact Report (AA/DEIS/DEIR) for the entire LPA.

The work program for the current Phase 2 study will update the AA/DEIS/DEIR with a Supplemental EIS and a Subsequent EIR. The SEIS/R for Phase 2 is scheduled for circulation in the Fall of 2002.

In addition, the RT Board has adopted a 20-year Vision which, among other things, includes extending light rail further south along the UPRR tracks to Elk Grove Boulevard (See Map 2, attached).

We have recently met with staff from the Sacramento County Water Agency and East Bay Municipal Utility District to coordinate the Freeport

Regional Water Project with the light rail extension project. Should the proposed water line be located in the Cosumnes River Boulevard area, potential conflicts would need to be resolved, such as the placement of the light rail alignment and its relationship to the needs for maintenance of the water line.

There is limited right-of-way along Cosumnes River Boulevard. Some of the competing projects and services located in that corridor include: roadway widening and extension, water lines, flood control, sewage treatment, provision for light rail, electricity and gas lines.

The most significant environmental concerns that need full study and disclosure are related to: transportation and traffic, historic and cultural resources, hydrology and water quality, noise, agricultural resources, geology and soils, biological resources, public service and utilities and service systems.

We appreciate the coordination that has occurred so far, and look forward to a continued working relationship to ensure these projects are constructed to provide needed services to the community.

Please note that my telephone number is (916) 321-2992, and Don Smith, the Deputy Project Manager's telephone number is (916) 321-2957 is you would like to discuss this further.

Sincerely,

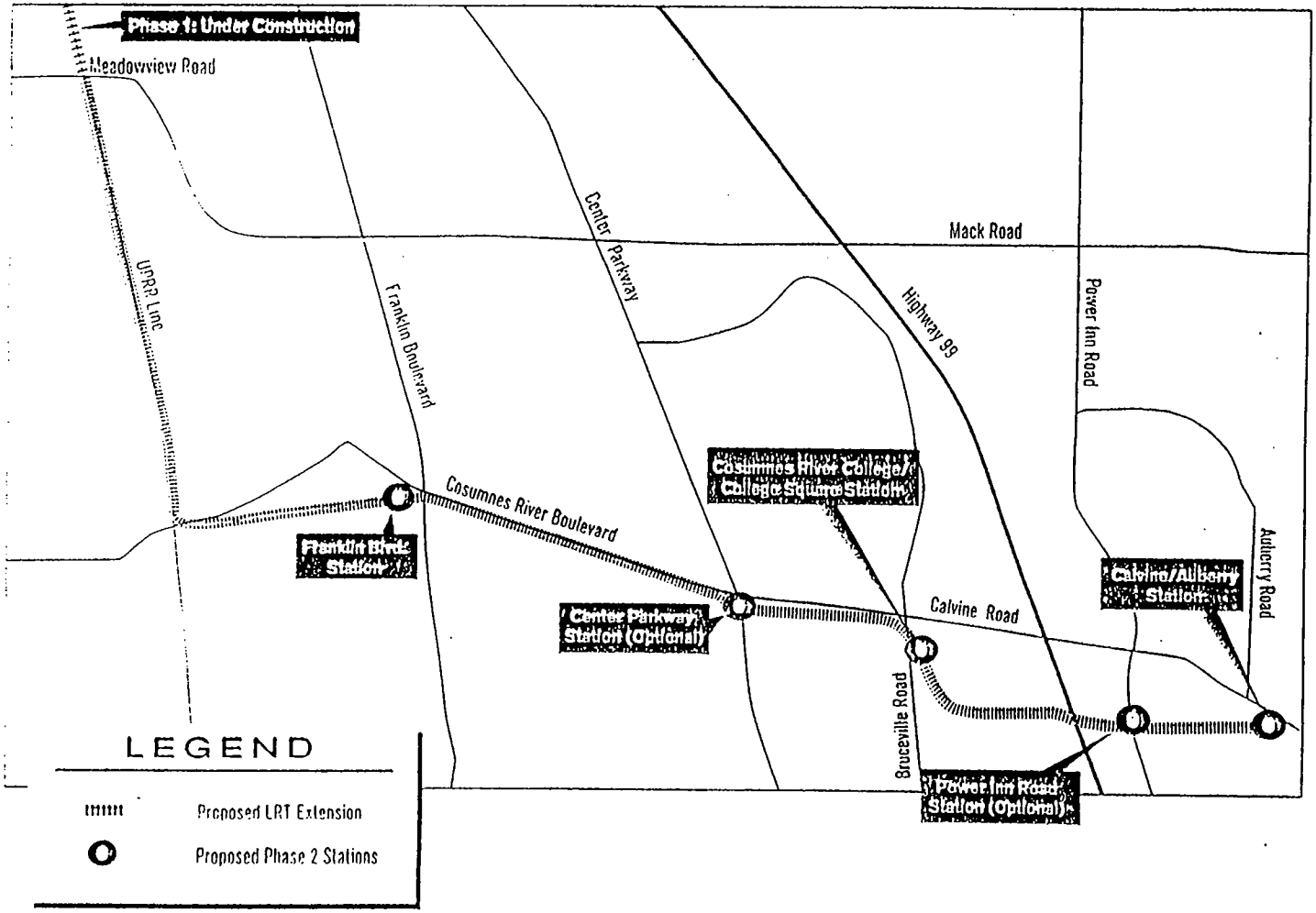
David M. Melko

David Melko, Policy and Program Manager
Project Manager, South Line Phase 2 Light Rail Extension Study

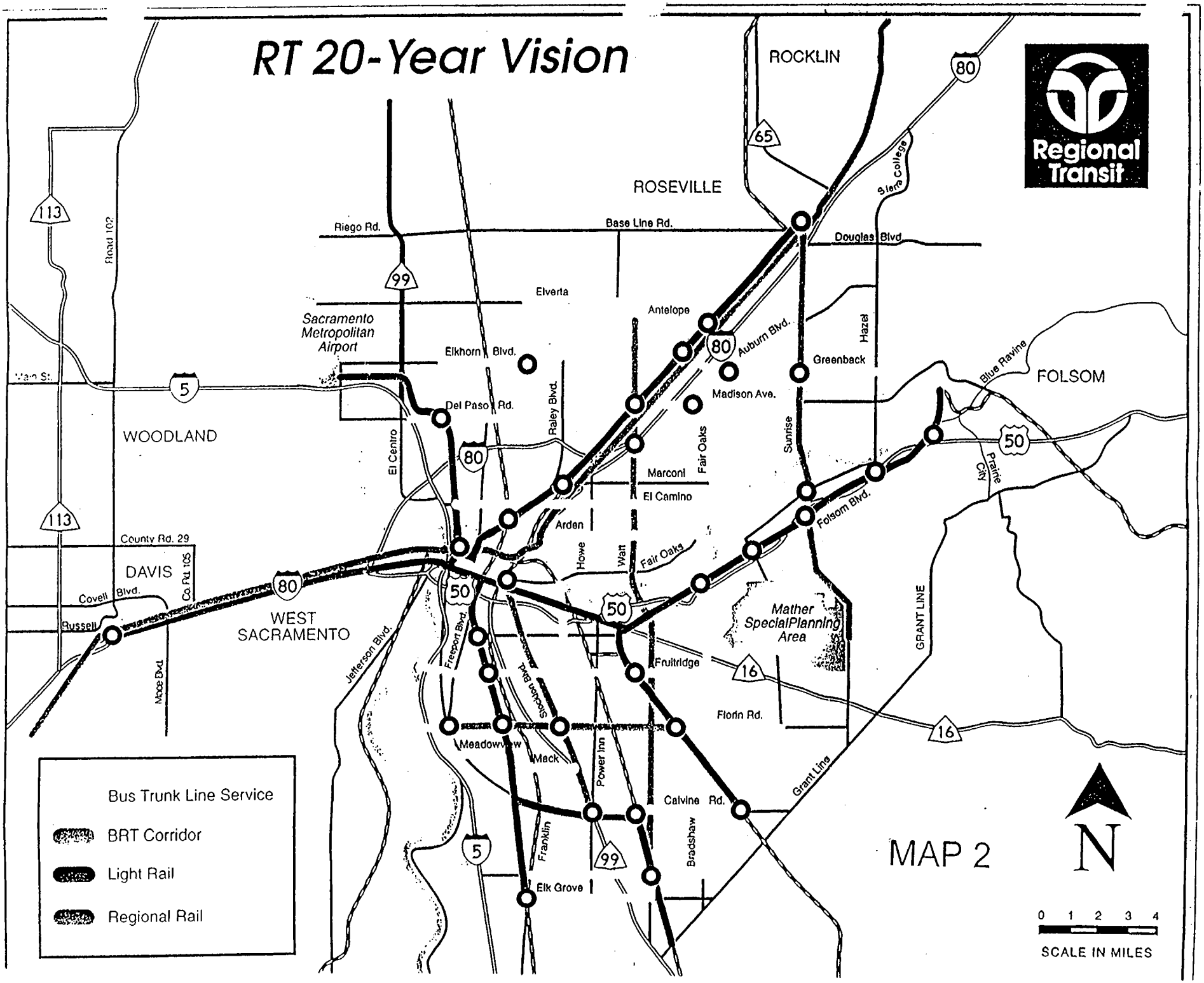
cc: Dave Mansen, Parsons Transportation Group
Azadeh Doherty, RT Planning Manager
Taiwo Jaiyeoba, RT Senior Planner
Don Smith, RT Senior Administrative Analyst

attachments:

SOUTH SACRAMENTO PHASE 2 CORRIDOR PROJECT



MAP 1


RT 20-Year Vision
Regional Transit
ROCKLIN
ROSEVILLE
Riego Rd.
Base Line Rd.
Douglas Blvd
Sierra College
Elverta
Antelope
Auburn Blvd.
Hazel
Greenback
Blue Ravine
FOLSOM
Sacramento Metropolitan Airport
Elkhorn Blvd.
Madison Ave.
Del Paso Rd.
Raley Blvd.
El Centro
Fair Oaks
Sunrise
Prairie City
Marconi
El Camino
Arden
Howe
Watt
Fair Oaks
Folsom Blvd.
WOODLAND
County Rd. 29
DAVIS
Covell Blvd.
Russell
Co. Rd. 105
Mace Blvd.
WEST SACRAMENTO
Jefferson Blvd.
Freeport Blvd.
Stockton Blvd.
Fruitridge
Mather Special Planning Area
GRANT LINE
Florin Rd.
Meadowview
Mack
Power Inn
Calvine Rd.
Grant Line
Bradshaw
Franklin
Elk Grove
Bus Trunk Line Service
BRT Corridor
Light Rail
Regional Rail
MAP 2
N
0 1 2 3 4
SCALE IN MILES

RT 20-YEAR VISION

Light Rail Corridors

- DNA
- South to Elk Grove and Laguna
- West to W. Sacramento and Davis
- NE to Antelope Road and Roseville
- Cal-Traction Line (?)
- 7.5-Minute Headways Peak Periods

Bus Service

- 10 or 15-minute Headways on Major Arterials
- Enhanced Bus Service on Stockton, Watt and Sunrise
- Augmented Service Including Evenings, Weekends
- Neighborhood Shuttle Service

Other Transit Service

- Regional Rail Commuter Service
- Augmented Paratransit Service

KRONICK MOSKOVITZ TIEDEMANN & GIRARD
A PROFESSIONAL CORPORATION

SCOTT A. MORRIS

May 2, 2002

VIA HAND DELIVERY

Freeport Water Authority
c/o Greg Ellis
2600 V Street
Sacramento, CA 95818

Re: Delta Water Users Scoping Comments on Proposed Freeport Regional Water Project Draft Environmental Impact Report/Environmental Impact Statement

Dear Mr. Ellis:

This letter is written on behalf of the Delta Water Users.[1] Pursuant to the U.S. Bureau of Reclamation's March 25, 2002 Notice of Intent to Prepare an EIS/EIR ("NOI") on the Freeport Regional Water Project, Sacramento River ("Project"), and in accordance with CEQA Guidelines §§ 15082 and 15083, the Delta Water Users hereby submit their scoping comments on the range of actions, alternatives, mitigation measures, and potentially significant effects to be analyzed in depth in the Project EIR/EIS.

The Delta Water Users obtain their water supplies from diversion points in the Sacramento/San Joaquin Delta downstream of the proposed Project diversion. They are concerned that many of the Project's direct and indirect impacts will adversely affect the quantity and quality of their water supplies.

The Delta Water Users' scoping comments focus on the following elements of particular concern to them:

1. Reliance on prior Environmental Documents,
2. Purpose and Need Statement,
3. Project Description,
4. Project Alternatives,
5. Impact Analysis, and
6. Mitigation Measures.

[1] The Delta Water Users are comprised of the entities identified in Attachment A hereto.

Attachment B to this letter contains the detailed comments of the Delta Water Users. The Delta Water Users appreciate the opportunity to provide comments pursuant to the NOI, and welcome the opportunity to work with the lead agencies during the CEQA/NEPA process to ensure that the Delta Water Users' concerns are addressed. Please do not hesitate to contact me, or any of the Delta Water Users directly, if you have any questions or wish to schedule coordination meetings.

Very truly yours,

KRONICK, MOSKOVITZ, TIEDEMANN & GIRARD
A Professional Corporation

Scott A. Morris

SCOTT A. MORRIS

Attachments
cc: Mr. Kirk Rogers (USBR)
Mr. Robert L. Schroeder (USBR)
Mr. Dennis M. Diemer (EBMUD)
Mr. Keith DeVore (County of Sacramento)
Mr. Jim Sequeira (City of Sacramento)

697165.1

State Water Contractors (27)	Central Valley Contractors (33)
Alameda County Flood Control & Water Conservation District, Zone 7	Contra Costa Water District
Alameda County Water District	San Luis & Delta-Mendota Water Authority
Antelope Valley-East Kern Water Agency	Banta-Carbona Irrigation District
Casitas Municipal Water District	Broadview Water District
Central Coast Water Authority	Central California Irrigation District
City of Yuba City	Centinella Water District
Coachella Valley Water District	City of Tracy
County of Kings	Columbia Canal Company
Crestline-Lake Arrowhead Water Agency	Del Puerto Water District
Desert Water Agency	Eagle Field Water District
Dudley Ridge Water District	Firebaugh Canal Water District
Empire-West Side Irrigation District	Fresno Slough Water District
Kern County Water Agency	Grassland Water District
Littlerock Creek Irrigation District	James Irrigation District
Metropolitan Water District of So. Calif.	Laguna Water District
Mojave Water Agency	Mercey Springs Water District
Napa County Flood Control & Water Conservation District	Oro Loma Water District
Oak Flat Water District	Pacheco Water District
Palmdale Water District	Pajaro Valley Water Mgmt Agency
San Bernardino Valley Municipal Water District	Panoche Water District
San Gabriel Valley Municipal Water Dist	Patterson Irrigation District
San Gorgonio Pass Water Agency	Plain View Water District
San Luis Obispo County Flood Control & Control and Water Conservation District	Pleasant Valley Water District
Santa Clara Valley Water District	Reclamation District 1606
Solano County Water Agency	San Benito County Water District
Tulare Lake Basin Water Storage District	San Luis Canal Company
	San Luis Water District
	Santa Clara Valley Water District
	Tranquility Irrigation District
	Turner Island Water District
	West Side Irrigation District
	West Stanislaus Irrigation District
	Westlands Water District
	Widren Water District

Attachment B

DELTA Water Users' Detailed Scoping Comments for the Freeport Regional Water Project ("Freeport Project") Environmental Impact Report/Environmental Impact Statement ("Freeport Project EIR/EIS")

The proposed Freeport Regional Project would be almost double the size of the project originally proposed by EBMUD, and would have significant water quantity and quality impacts on downstream SWP and CVP water users. The project would divert approximately 200,000 acre-feet during some dry years, representing a substantial increase in diversions from the system at a time when the system would be already under severe environmental strain and will exacerbate SWP and CVP water shortages at a time when their supplies will already have been severely cutback. The Freeport Project EIR/EIS must consider these impacts.

I. Reliance on Previous Environmental Documents.

The Freeport Project state and federal lead agencies are the Freeport Regional Water Authority ("Authority") and the United States Bureau of Reclamation ("Reclamation"), respectively. It appears that the Authority intends to rely in part on the analysis and findings of previous environmental documents, including the EBMUD Supplemental Water Supply Project Environmental Impact Re[prt/Environmental Impact State,emt ("SWSP EIR/EIS"). In particular, the Authority relies on the Amendatory Contract that EBMUD and Reclamation entered into after the June, 2001 certification of the EBMUD SWSP EIR/EIS. Such reliance is misplaced for at least two reasons. First, this proposed Freeport Project is materially different and involves a larger combined diversion than any project previously considered by the members of the Authority for diversion off the Sacramento River. It would not be appropriate to rely on environmental impact analyses that examined much smaller projects with much smaller scopes than the currently contemplated project. Second, the Delta Water Users have initiated litigation under CEQA to set aside EBMUD's certification of the SWSP EIR and EBMUD's execution of the Amendatory Contract in reliance thereon. If the Delta Water Users prevail, then the Amendatory Contract will be voided and the SWSP EIR/EIS may not be relied upon for any purpose.

The Delta Water Users have submitted detailed comments previously on the SWSP EIR/EIS that remain pertinent to the proposed Freeport Project EIR/EIS. Thus, the Delta Water Users incorporate by reference all previous comment letters by the Delta Water Users, its members, and the City and County of Sacramento on the SWSP EIR/EIS, including but not limited to:

1. March 18, 1998 comments by Santa Clara Valley Water District on EBMUD's SWSP DEIR/EIS (James Fiedler to Kurt Ladensack and Cecil Lesley).

2. March 19, 1998 comments by San Luis Delta-Mendota Water Authority on DEIR/EIS for EBMUD's SWSP (Thomas Birmingham to Kurt Ladensack and Cecil Lesley).

3. March 19, 1998 comments by Metropolitan Water District of Southern California on DEIR/EIS for EBMUD's SWSP (Laura Simonek to Kurt Ladensack and Cecil Lesley).

4. March 19, 1998 comments by Contra Costa Water District on EBMUD SWSP DEIR/EIS (Richard Denton to Kurt Ladensack and Cecil Lesley).

5. November 17, 2000 comments by Metropolitan Water District of Southern California on DREIR/SEIS for EBMUD's SWSP (Laura Simonek to Kurt Ladensack and Rob Schroeder).

6. November 20, 2000 comments by Contra Costa Water District on EBMUD's SWSP DREIR/SEIS (Richard Denton to Kurt Ladensack and Rob Schroeder).

7. November 20, 2000 comments by San Luis Delta-Mendota Water Authority on DREIR/SEIS for EBMUD's SWSP (Scott Morris to Kurt Ladensack and Robert Schroeder).

8. November 20, 2000 comments by Santa Clara Valley Water District on DREIR/SEIS for EBMUD's SWSP (Joan Maher to Robert Schroeder).

9. November 27, 2000 comments by the State Water Contractors on EBMUD's SWSP DREIR/SEIS (John Coburn to Robert Schroeder and Kurt Ladensack).

10. March 18, 1998 comments by City of Sacramento on EBMUD's SWSP DEIR/EIS (Joe Robinson to Kurt Ladensack).

11. March 19, 1998 comments by Sacramento City Council on EBMUD's SWSP DEIR/EIS (Steve Cohn to Kurt Ladensack).

12. March 19, 1998 comments by County of Sacramento and Sacramento County Water Agency on DEIR/EIS for EBMUD's SWSP (Andrew Hitchings to Kurt Ladensack).

13. March 19, 1998 comments by County of Sacramento on DEIR/EIS for EBMUD's SWSP (Darrell Eck to Kurt Ladensack).

14. March 19, 1998 comments by County of Sacramento, Water Resources Division on DEIR/EIS for EBMUD's SWSP (Keith DeVore to Kurt Ladensack and Cecil Lesley).

15. September 26, 2000 comments by Sacramento County on EBMUD's SWSP DREIR/SEIS (Stuart Somach to Lester Snow and Dennis Diemer).

16. October 5, 2000 comments by Sacramento County and City of Sacramento on EBMUD's SWSP preferred alternative (Stuart Somach to Lester Snow and Dennis Diemer).

17. November 20, 2000 comments by Sacramento County on DREIR/SEIS for EBMUD's SWSP (Stuart Somach to Kirk Rodgers, Rob Schroeder and Kurt Ladensack).

18. November 20, 2000 comments by City of Sacramento on EBMUD's SWSP DREIR/SEIS (Samuel Jackson and Joe Robinson to Kurt Ladensack).

These previous NEPA/CEQA comment letters provide substantial detail on the concerns of the Delta Water Users regarding a similar smaller project proposed by EBMUD. These comment letters illustrate some, but not all, of the wide range of issues that need to be addressed and mitigated as part of the Freeport Project EIR/EIS.

II. PURPOSE AND NEED STATEMENT

1. Establish a Clear Purpose and Need Statement

The Authority must describe with specificity the needs of Authority members and the purpose of the Project in terms of, e.g., water supply reliability and water quality. In the Final SWSP EIR/EIS, EBMUD dismissed many viable alternatives on the basis that the alternatives would not achieve the project objective of making use of EBMUD's Central Valley Project ("CVP") contract (see page 16-113 of the final SWSP EIR/EIS, response to comments RL 11-28).

Utilization of contract supplies is not a need, but a means of fulfilling a need. Referencing the utilization of contract supplies instead of actual needs artificially narrows the scope of the project and precludes consideration of potentially less environmentally damaging alternatives.

The Delta Water Users request that the Authority rely on adopted planning documents to determine the core needs of all the regional partners and then rely on the core needs to establish the purpose. The Freeport Project EIR/EIS should disclose both historical facts and projected estimates that support the identified needs (including accepted levels of rationing).

The statement of purpose and need should not preclude non-regional solutions or CALFED Bay-Delta Program solutions. For example, there may be a combination of projects, such as CALFED Bay Area Regional Program projects and Sacramento Water Forum projects, which best meet the needs of Authority members.

2. Use of a Hypothetical Drought in Determining Purpose and Need

The Authority must analyze the Freeport Project alternatives, including the No-Action alternative, for a range of hydrological conditions that might be reasonably expected (e.g. 1:100 or 1:200 year frequency intervals). In other words, the driest period should have a reasonable chance of occurring during the next 100 years.

If the Authority should choose in addition to employ a more extreme hypothetical drought sequence in determining whether project alternatives meet the Freeport Project's purpose and need (such as EBMUD's severe 1977-1978-185 TAF scenario, which has a probability of occurring only about once every 1500 years, i.e., once in a millennium), the same hydrologic conditions should be applied to all northern California rivers. In general, all northern California rivers have similar hydrology. If it is dry on the Mokelumne River, it is typically also drier on the Sacramento River. To assume inadequate water supply on the Mokelumne River but ample water supply on the Sacramento River, a relatively small distance away, would not be reasonable.

Using consistent and reasonable hydrologic conditions for all northern California tributaries to the Delta would represent the more probable conditions under which the Freeport Project will operate. This will allow Authority members (and their customers) to evaluate the cost and benefits of the Freeport Project and to develop more cost-effective, less environmentally damaging additional project alternatives (such as regional storage). This will also allow the Delta Water Users to evaluate the impacts of the Freeport Project on each individual agency's operations, water supply and water quality.

3. Disclose All Regional Partners and Purposes of the Freeport Project

The Freeport Project EIR/EIS should disclose all potential partners (including parties the water might be marketed to) and all other future projects each Authority member is contemplating, independently or under the Joint Powers Agreement. These future projects (such as local storage, exchanges with other agencies) may allow Authority members to use much more of the capacity of the Freeport Project than is currently the case with existing Authority member facilities. For example, EBMUD could develop a number of other water supply projects, including groundwater (San Joaquin County, Bayside Groundwater Project, Bixler Groundwater Project), surface storage (expanded Pardee Reservoir, surface storage in the Bay Area, acquisition of PG&E hydroelectric facilities on the Mokelumne River), water recycling (East Bayshore Recycled Water Project) and water transfers/exchanges (CALFED Water Quality and Water Supply Reliability Program [also known as Bay Area Blending/Exchange]).

If the Authority anticipates additional Freeport Project partners, it should disclose the partnerships it is contemplating, and the associated needs of partners. The effects on operations, including timing and diversion rates, that would result from

groundwater and/or surface water storage must also be analyzed and the impacts disclosed. The environmental impacts of any deliveries to Authority members in their individual service areas must also be fully evaluated and disclosed in the Freeport Project EIR/EIS.

III. PROJECT DESCRIPTION

The Freeport Project EIR/EIS should describe in detail the whole project, including regional partners, conveyance facilities and interconnections, operations, quantity and timing of water diversions, and the use and eventual fate of the diverted water. For example, the Freeport Project EIR/EIS must fully detail the quantities and timing of water that is diverted by EBMUD in lieu of water, already available in EBMUD's Mokelumne River reservoirs, that is later spilled down the Mokelumne River.

The Freeport Project description must provide detailed information on the source of the diverted water, the water rights that allow such a diversion, where the water is used and what the water is used for. Where there are limits on the use of unstored flow under those water rights in some months, e.g., Reclamation's American River water rights, compliance with those limits must be analyzed and fully disclosed. This would help the stakeholders, such as the Delta Water Users, better understand the Freeport Project and its impacts. All Freeport Project alternatives must be analyzed and described to the same level of detail.

IV. PROJECT ALTERNATIVES

Once the Freeport Project purposes and needs are accurately described, the Authority must identify the range of alternative projects that will address those purposes and needs. If the Freeport Project purposes are to provide drought supplies, reduce ground water overdrafts in Sacramento County and increase water service reliability, the ability of each project alternative to meet the Freeport Project needs must be fully analyzed and disclosed.

The Authority should consider the reasonable range of alternatives that will address these purposes and fill the stated needs of Authority members, including, but not limited to:

1. Alternatives that divert and store water in wet years for use in dry years:

    - Groundwater storage in Sacramento County, e.g., storage in groundwater basins managed by the Sacramento North Area Groundwater Management Authority.
    - Groundwater storage in San Joaquin County.
    - EBMUD's Bayside Groundwater Project in Alameda County.
    - EBMUD's Bixler Groundwater Project in East Contra Costa County.

- Any other pending or future planned EBMUD groundwater storage projects located within the EBMUD service area, including projects currently in development.
- Increased surface water storage capacity of EBMUD's East Bay reservoirs or EBMUD participation in surface storage elsewhere in the East Bay (either directly or by exchange).
- Surface water storage on in-Delta islands (EBMUD entered into a water rights protest settlement agreement with Delta Wetlands Properties in 2000. Bacon Island is immediately north of the Mokelumne Aqueduct).
- Reoperation of the Mokelumne and Terminal Reservoir system. The Freeport Project EIR/EIS should analyze whether operational changes within EBMUD's system, including the proposed groundwater projects, could provide the drought supply reliability sought by EBMUD.

2. Alternatives that rely on increased use of Mokelumne River water:

   - Enlargement of Pardee Reservoir and/or increased EBMUD terminal storage in combination with a smaller Sacramento River project to serve Sacramento County.
   - Storage of Mokelumne River wet year supplies in other surface storage reservoirs in the Bay Area.
   - Purchase of PG&E hydroelectric facilities on the Mokelumne River to allow better management of Mokelumne water supplies .

3. Alternatives based on EBMUD's participation in the CALFED Bay Area Water Quality and Water Supply Reliability Project (referred to in the August 2000 Record of Decision as the Bay Area Blending/Exchange Project).

4. An alternative that increases the capacity of the Freeport diversion and conveyance facilities so that EBMUD can, within its CVP contract constraints, divert more water over shorter periods of time when flows are higher and avoid diversions during the periods of lowest flow. Under its amended CVP contract, EBMUD can only divert if the forecasted EBMUD total system storage is less than 500,000 acre-feet. This alternative would use unused EBMUD surface storage capacity to reduce the significant impacts of dry year diversions.

5. Alternatives that rely on exports by EBMUD from the Delta:

   - Diverting EBMUD's American River supply at Bixler or some other Delta intake. The Delta diversion could be used in wet and normal years, when Delta water quality is high, to produce a blend of Mokelumne and Delta water that preserves EBMUD upstream storage. This alternative would be greatly improved if used in conjunction with Bay Area storage. This alternative would require amendment of EBMUD's CVP contract to allow wet and normal year diversions rather than dry year diversions but would significantly reduce the impacts of the proposed diversions by EBMUD during drought periods.

   - Use of a treatment plant at EBMUD's Bixler facility to allow diversion of some supplemental water supply even in drier periods. EBMUD has recently purchased sufficient property to enable a treatment plant to be built at this location.

6. Alternatives that involve development of new advanced treatment plants for EBMUD, e.g., on EBMUD's existing land near Bixler or at existing drinking water treatment facilities, that could treat Delta water to meet the water quality needs of EBMUD. EBMUD is already proposing construction of new treatment facilities as part of its Freeport Project. This alternative would save the immense cost of constructing the Freeport diversion, new pumping and conveyance facilities, and the new Freeport treatment facilities, all of which will be rarely used.

7. Alternatives that involve new Bay Area facilities that reduce the risk to EBMUD's water supply from seismic events, Delta island levee failure and other catastrophic events by reducing EBMUD's dependence on the Mokelumne Aqueduct where it crosses the geotechnically unstable Delta.

8. Alternatives that rely on full implementation of all cost-effective water use efficiency measures ("Best Management Practices") as described in the Memorandum of Understanding Regarding Urban Water Conservation in California. Water savings gained from these measures may help to offset the need for new diversion facilities.

9. Alternatives that rely on water transfers rather than new diversion facilities;

10. Alternatives that rely on a combination of projects to achieve the Freeport Project purposes so that Freeport Project impacts are reduced or avoided. In the case of EBMUD, this could include an alternative that combines the Bayside Groundwater Project, the Bixler Groundwater Project, additional recycling and increased use of Mokelumne River water.

11. Alternatives that are consistent with the CALFED Bay-Delta Program's goals, e.g., continuous improvement of water quality for users of Delta water.

The Authority's Baseline, No-Action, Project and Cumulative Impact alternatives must be consistent with the CALFED Baseline, No Action and Cumulative Impact alternatives. The CALFED Record of Decision defines a set of future ecosystem, storage and conveyance and water quality projects that are reasonably foreseeable. The Authority must analyze its alternatives in conjunction with the CALFED preferred alternative to ensure that the Freeport Project does not conflict with CALFED's efforts to improve conditions for all beneficial uses of the Bay-Delta system.

V. IMPACT ANALYSIS

The Freeport Project will have potentially significant adverse impacts on the water quality and water supply available to the Delta Water Users, as well as Delta fishery impacts. The Freeport Project EIR/EIS must compare the Freeport Project alternatives to existing conditions that are present today, and if different, a well reasoned "No Action" alternative that incorporates all reasonably foreseeable future projects. In addition, the Freeport Project alternatives will have cumulative and growth-inducing impacts in the service areas of the Authority members and in areas in which the water may be marketed. These impacts must be analyzed with reference to existing conditions and also with reference to conditions that are predicted to exist in the foreseeable planning future. All impacts, including, but not limited to, the following, as well as all proposed mitigation, must be fully analyzed and disclosed:

1. Water Supply Impacts

- The water supply impacts on CVP and State Water Project (SWP) contractors in all water years (wet, above normal, below normal, dry and critical);
- Impacts on the availability of surplus flows;
- The water supply impacts on SWP and/or CVP contractors through implementation of the Coordinated Operations Agreement;
- The water supply impacts on other legal users of water of year round, all-year, diversions due to the addition of regional partners (for example, San Joaquin County with its groundwater storage capacity);
- An analysis of the reduction in water supply impacts if diversions are taken in wet years during high flows rather than in dry years during extremely low flows;

- The water supply impacts of maximum use of Authority members' water rights and water contracts;
- The water supply impacts due to redirected fishery impacts, e.g., potential reduction in allowable exports by the CVP and SWP if fish population decrease;
- The water supply impacts on the CALFED Bay-Delta Program;
- The water supply impacts on the Mokelumne River, due to American River water diverted for (1) consumptive use in the Authority's service areas, (2) fishery flows on the Mokelumne River, and (3) additional flood releases on the Mokelumne River; and,
- The water supply impacts on Yolo County and other Sacramento River basin water right holders.

In assessing these impacts, the Authority should adopt threshold significance criteria that are consistent with the Freeport Project's actual purpose and need. The EBMUD and Sacramento County customer deliveries with and without the Project must be fully disclosed in terms of monthly deliveries to customers for the full hydrologic record used in the modeling studies and compared with the Freeport Project purpose and need. The Delta Water Users are available to discuss appropriate significance criteria. Water supply impacts to the Delta Water Users and other legal users of water should be presented in terms of monthly values over the historical record for all alternatives in terms of both impacts on water deliveries and carryover storage.

2. Water Quality Impacts

- The water quality impacts on CVP and SWP contractors in all water year types (wet, above normal, below normal, dry and critical years);
- The impacts of the resulting reduced availability of high quality Delta water for filling Los Vaqueros Reservoir and other facilities that rely on high quality blending water to improve delivered water quality to urban areas.
- The impacts on Delta water quality in wet years and dry years (at several all urban drinking water intakes and other key Water Quality Control Plan compliance locations in and upstream of the Delta);
- The water quality impacts due to the addition of regional partners (for example, San Joaquin County with its groundwater storage capacity);

- An analysis of the reduction in water quality impacts if diversions are taken in wet years during high flows rather than in dry years during extremely low flows;

- The water quality impacts resulting from maximum use of Authority members' water rights and water contracts;

- The impacts on the ability of the CALFED Bay-Delta Program to meet its water quality goals;

- The water quality impacts on Freeport Project water partners due to waste discharges from the nearby Sacramento Regional Waste Water Treatment Plant; and,

- The water quality impacts on Yolo County and other Sacramento River basin water right holders.

In assessing these impacts, the Authority should adopt threshold significance criteria that are consistent with the Freeport Project's actual purpose and need, and are also consistent with criteria used for Delta water projects (e.g., the EIR/EIS for Contra Costa Water District's ("CCWD") Los Vaqueros project considered water quality impacts as potentially significant and requiring further analysis if the increase in chloride concentration exceeded 5 mg/L or 5%, whichever is larger). The Delta Water Users are available to discuss appropriate water quality significance criteria for locations in the Delta. In particular, impacts at all urban drinking water intakes in the Delta must be analyzed. Water quality impacts should be presented as monthly values over the full historical record for all alternatives. In addition, the Freeport Project EIR/EIS should disclose the maximum and minimum range of daily variations in water quality. Urban agencies diverting or exporting water from the Delta, in particular CCWD, must make daily adjustments to their operations of treatment plants, diversion facilities, and storage reservoirs in response to daily variations in water quality.

3. Fishery Impacts

- The fishery impacts on the Delta in wet years and dry years (at several points in the Delta);

- The fishery impacts on SWP contractors through implementation of the Central Valley Project Long-term Operations Criteria and Plan (OCAP);

- The fishery impacts due to the additional diversion by regional partners (for example, by San Joaquin for its groundwater storage capacity);

- The contrasting fishery impacts of dry year and wet year diversions;
- The fishery impacts of maximum use of Authority member's water rights and water contracts;
- The fishery impacts on the CALFED Bay-Delta Program goal of species recovery; and
- The cumulative fishery impacts.

The Delta Water Users are available to discuss potential redirected fishery impacts on other Delta facilities. Fishery impacts should be evaluated as weekly and daily variations, due to the short time periods that are crucial to endangered and threatened Delta species.

4. Cumulative Impacts

- The Freeport Project EIR/EIS must analyze and disclose the full cumulative impacts associated with the Freeport Project, in particular with respect to the reasonably foreseeable CALFED preferred alternative
- The impacts and cumulative impacts of the Freeport Project must be analyzed with respect to both a future No-Action case and with respect to existing conditions.

5. Growth-Inducing Impacts

- The Freeport Project EIR/EIS must analyze the growth-inducing impacts of the Freeport Project in the water users' service areas.
- The Authority must analyze the growth impacts of the Freeport Project, including additional regional partners and the growth impacts of the Freeport Project in their service areas.

6. Other Impacts

The Freeport Project EIR/EIS should present the rate impacts for the Authority resulting from the operating and capital costs of the Freeport Project. The Freeport Project EIR/EIS must also analyze and disclose the capital and operating costs of treatment for alternatives in which water is delivered to EBMUD using service area treatment plants. These capital and operating costs should be presented on a unit basis, i.e., greater use of new or upgraded service area treatment plants versus new separate

dedicated Freeport Project treatment plants that will seldom be used. The unit cost of using service area treatment plants will likely be much lower.

The Freeport Project EIR/EIS should also present the rate impacts of the Freeport Project on other CVP contractors. For example, EBMUD's Amendatory Contract shifts CVP project costs to other CVP contractors.

7. Modeling for Impacts

The Delta Water Users request that the Authority start its modeling efforts *de novo* (i.e., not merely post-process model runs from other environmental documents for smaller individual and less comprehensive projects). Modeling for the Freeport Project EIR/EIS should reflect diversions from the actual point of diversion of the Freeport Project. Modeling should also account for the water quality impacts of the Sacramento Regional Waste Water Treatment Plant due to tidal flooding in the Sacramento River, essentially carrying wastewater effluent, and in some case combined sewage overflows, upstream and potentially impacting Freeport Project users. Modeling for the Freeport Project EIR/EIS should accurately reflect the water rights and contracts of the Authority – for example, the EBMUD and Sacramento County diversions under their American River Unit CVP contracts can currently use American River water rights and Folsom Reservoir storage only (not State Water Project facilities or non-American River CVP facilities).

Every potential maximum use of the Freeport Project (worst case scenario) should be modeled. This should include maximum use of Authority water rights and contracts (including the potential 266 TAF over three years that EBMUD's CVP contract allows in dry/wet/dry water year sequences), the maximum possible deliveries to EBMUD if the EBMUD Total System Storage is manipulated to allow the maximum take of American River water, and the maximum use if the Folsom Reservoir flood storage is increased, as currently proposed.

For cumulative conditions, the Authority should consult with the CALFED Bay Delta Project staff and consultants and use a common cumulative scenario, including proposed water projects, Trinity River changes, b(2) yield dedication, and the Environmental Water Account/Environmental Restoration Program.

Finally, the Delta Water Users requests that the Authority allow a stakeholder review of the modeling assumptions used prior to completion of the Draft EIR/EIS.

VI. MITIGATION MEASURES

Mitigation must be provided for all water quality, water supply and other impacts identified and disclosed as part of the Freeport Project EIR/EIS. Mitigation should not rely on obtaining permits, as this is a circuitous argument and not supported by CEQA

case law. Mitigation measures should be identified and considered early in the Freeport Project EIR/EIS process. The Delta Water Users would be willing to assist the Authority in defining effective and reliable mitigation measures.

SMUD
SACRAMENTO MUNICIPAL UTILITY DISTRICT
The Power To Do More.℠

P.O. Box 15830, Sacramento, CA 95852-1830; 1-888-742-SMUD (7

April 23, 2002
ET&C 02-119

Freeport Regional Water Project
c/o Gregg Ellis
2600 V Street
Sacramento, CA 95818

SCOPING COMMENTS ON THE FREEPORT REGIONAL WATER PROJECT

Dear Gregg,

The Sacramento Municipal Utility District (SMUD) has received the notice to prepare a joint Environmental Impact Statement / Environmental Impact Report (EIS/R) for the proposed Freeport Regional Water Project.

SMUD is pleased that East Bay Municipal Utility District (EBMUD) and the City and County of Sacramento have been able to reach an accommodation regarding EBMUD's utilization of its entitlement of water from the Central Valley Project under its water service contract with the Bureau of Reclamation (Reclamation). SMUD supports reasonable solutions to the issues surrounding regional water development.

In addition to the verbal comments made at the Herald Scoping meeting on April 18, 2002, SMUD offers the following comments:

SMUD utilizes 15,000 acre feet of the City of Sacramento water rights and has a water service contract with Reclamation for 60,000 acre feet per year. SMUD currently utilizes the Folsom South Canal (FSC) for water delivery to the Rancho Seco Generating station, undergoing decommissioning, and intends to utilize the FSC for the future Cosumnes Power Project (CPP), a new 1,000 MW power plant to be built at the Rancho Seco site. SMUD expects to receive the license to construct the Cosumnes Power Plant in November 2002. SMUD's use of the FSC is critical to the present decommissioning of SMUD's Rancho Seco Generating Station and the future CPP at the Rancho Seco site. SMUD supports the efforts made to bring this project to fruition but SMUD needs assurances that the FSC remains a clean and unencumbered source of water for the District's water rights and contract water.

SMUD is concerned that the degraded quality of the water, particularly the higher levels of suspended solids currently present in Sacramento River water, will result in adverse capital and Operation and Maintenance (O&M) cost to SMUD both in terms of existing (decommissioning of the nuclear generating station) and future (CPP) operations. SMUD should not be impacted by any action brought about by the implementation of this project. SMUD should not pay unnecessarily for actions brought about by others that would affect the District's existing or proposed facilities that currently or will utilize the waters of the FSC.

The outlet for the imported Sacramento River water is located upstream of SMUD's intake on the FSC. SMUD is gravely concerned that the receiving water in the FSC will be degraded, requiring the construction of an influent treatment facility (e.g., a radial clarifier) at high cost so that SMUD would be able to use its CVP or water rights water. The higher levels of total dissolved solids could force SMUD to operate the new CPP with lower cooling tower cycles of

concentration, thereby increasing O&M costs. These higher TDS levels will also likely result in increased boiler feed water pretreatment costs.

A presently planned EBMUD would filter the grit in the Sacramento River water before pumping the water into the FSC but would rely on the FSC as a mechanism to settle out the suspended solids. The high levels of turbidity typically present in Sacramento River water conveyed to the FSC will result in settling and sedimentation of the FSC. Such sedimentation will result in diminished FSC storage capacity and higher FSC O&M costs.

Rancho Seco Reservoir is the largest feature of Rancho Seco Park. Rancho Seco Reservoir was originally developed to supply an emergency backup water supply for cooling of the Ranch Seco Generating Station. As a part of the agreement to construct and operate Rancho Seco, SMUD agreed to operate Rancho Seco Reservoir as a public park for 50 years. The park is open year-round to the public for swimming, fishing, boating and camping. Rancho Seco Park is a popular destination with over 100,000 people per year visiting the reservoir. The source of water is principally from the FSC. If the source water is of less quality than currently available there is the potential for serious impacts to the recreational opportunities that are currently available to the public.

The following issues regarding the future water quality of the FSC need to be addressed and mitigated for in the Draft EIS/R:

- Calculate what the water quality will be in the FSC at the SMUD intake when EBMUD is utilizing the canal to deliver 100 million gallons per day of Sacramento River water. The factors in this discussion should include Sacramento River water quality, the existing quality of the American River water diverted at Nimbus, and the resultant water quality changes that will take place within the FSC.

- Ascertain what additional water treatment and/or changes may be required for the users of the FSC, based on the difference between current FSC water quality and the degraded conditions expected by the importation of the Sacramento River water.

- Calculate the silt loading in the Folsom South Canal over time by the importation of untreated water from the Sacramento River and the difference in the silt loading if the water were to be pretreated before entering the Folsom South Canal.

- Address potential policy implications of the importation of lesser quality water into the FSC and impacts to water users of the FSC. Include a review of the existing Bureau of Reclamation's policy on receiving waters and if the proposed project is in compliance with that policy.

- Develop mitigations and assurances that all necessary and prudent actions are taken to ensure that the project will be in compliance with federal, stare and local laws and regulations governing the use of the water and the FSC.

- Address the changes to the water quality and impacts to recreation at the Rancho Seco Reservoir.

Appropriate mitigation for the above-mentioned impacts should require the construction of facilities to treat the Sacramento River water before it is pumped into the FSC. SMUD would like the project proponents to consider and select an alternative that would include the pretreatment of water to appropriate drinking level standards before pumping the Sacramento River water into the FSC.

To address the impacts of the imported water on the Folsom South Canal, SMUD recommends that Best Management Practices should be adopted for the construction and operation of all facilities necessary to divert, treat and distribute water. This includes all diversion structures, treatment facilities, pumping stations, storage facilities and transmission piping. No hazardous or non-hazardous materials should be released from operation of the project or any construction site into the Folsom South Canal.

As a co-user of the FSC, SMUD requests to review changes in the project as they relate to SMUD's concerns for the joint use of the FSC.

SMUD would like to discuss these matters with project proponents and consultants preparing the environmental documentation for this project, with the hope of properly evaluating and avoiding impacts as they relate to the degradation of water quality in the Folsom South Canal.

Thank you for the opportunity to comment. SMUD looks forward to reviewing the Draft EIS/R. We are available to meet with the consultants who are preparing the environmental documentation to discuss in detail our concerns. If you have any questions regarding these comments please call me at (916) 732–5716.

Sincerely,

Paul Olmstead
Water and Power Resource Specialist

Cc: Mr. Rob Schroeder
U.S. Bureau of Reclamation
Central California Area Office
7794 Folsom Dam Road
Folsom, CA 95630

Mr. Tad Berkebile
County of Sacramento
827 7th Street, Room 301
Sacramento, CA 95814

CITY OF STOCKTON

COMMUNITY DEVELOPMENT DEPARTMENT
CITY HALL
425 N. EL DORADO STREET
STOCKTON, CA 95202-1997 209-937-8266

April 25, 2002

Mr. Gregg Ellis
Freeport Regional Water Project
2600 V Street
Sacramento, California 95818

NOTICE OF PREPARATION (NOP) AND NOTICE OF INTENT (NOI) FOR THE FREEPORT REGIONAL WATER PROJECT, SACRAMENTO, CALIFORNIA ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL STATEMENT

The City of Stockton Community Development Department has circulated the above-referenced environmental document to various City of Stockton Departments for comments. No comments were received by the response date of Wednesday, April 24, 2002.

We wish to thank you for the opportunity to review and comment on the above-referenced document and to coordinate our planning efforts. Should you have any questions, please feel free to contact Assistant Planner Denise Jefferson at 937-8623.

Roger A. Storey

ROGER A. STOREY, DEPUTY CITY MANAGER/
INTERIM COMMUNITY DEVELOPMENT DIRECTOR

RAS:DJ:wm

..ODMA\GRPWISE\COS.CDD.CDD_Library:21633.1

Comment Via E-Mail

Salute	First Name	Last Name	Organization	Address	City
Mr. & Mrs	Jim/ Rhonda	Bergum	Home owner	12354 Clay Station Rd	Herald
State	**Zip Code**	**Are Code**	**Phone Number**	**Fax Number**	**E-Mail**
Ca	95638	209	748-2224		docjim@softc

To be added in the mailinglist

Comment
We oppose the pipeline cutting right through this residencial are and across our property. This will have horrible effect on school bus and other local traffic for a long time. The noise, dust and large equipment will severely interupt our quite and tranquil environment. We did not build a large attractive home here just a couple years ago to have the property torn up for some pipeline and jeapardise property values. We are also especially concerned about the continues noise to be generated by this huge pumping station nearly in out back yard. Again we did not locate and build here to have some continouse industrial type noise in our ears. You should be able to find some ranch or farm land nearby to go across that would no have such an ill effect on families in this area.

Attended Meeting
042902

Comment Card
Freeport Regional Water Project

Date: 10-15-2002

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: Don & Claire Fenocchio Title (if applicable):

Telephone: 916-744-1642 Fax:

Organization/Business (if applicable): Email:

Address: P.O. Box 371

City: Clarksburg State: Ca. Zip: 95612

☒ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

1. Location of the pumping station
2. Sacramento River water quality

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

FREEPORT REGIONAL WATER PROJECT
C/O GREGG ELLIS
2600 V STREET
SACRAMENTO, CA. 95818

April 22, 2002

Dear Mr. Ellis

SUBJECT: NOTICE OF PREPARATION AND NOTICE OF INTENT FOR THE FREEPORT REGIONAL WATER PROJECT, SACRAMENTO, CALIFORNIA-ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT

It is my understanding that a major concern with this project is taking Sacramento River water from the river during low flow periods. East Bay Municipal Utility District's new contract with the Bureau allows just that. There may be another alternative that should be considered.

EBMUD had a contract for 150,000 acre-feet of wet year water (Hodge flows). If EBMUD went back to the wet year contract and initiated a conjunctive use program with the ground water users in the area south of the American River (Sacramento County Zone 40, Elk Grove Water Service, City of Galt etc.) the local area, EBMUD and the Delta would benefit.

During the time periods when EBMUD cannot use their American River allocation it would be treated and used in Sacramento County thereby allowing the existing ground water pumping to be reduced or shutdown. This in effect would recharge the ground water basin. When EBMUD needed their allocation, the ground water basin would be pumped to meet that need. The amount of water returned to EBMUD would be predetermined. The formula could be for every three units of surface water used in Sacramento County, two units could be pumped back to EBMUD if and when needed. The water could be taken from either the Folsom South Canal or the Sacramento River or a combination of either.

It is my understanding that South Sacramento County pumps some 270,000 acre-feet annually. By using surface water in place of ground water it would in effect store wet period water for use during dry periods. This may be a reasonable solution meeting the needs of EBMUD, Sacramento County, the Delta and south state water users.

Sincerely,

W J Hoppe

Walter Hoppe

From: Walter John <CarolWalt@ca.astound.net>
To: <info@freeportproject.org>
Date: 11/8/02 2:24PM
Subject: Environmental Impact from Asbestos Fibers

Freeport Project:
The California State Department of Health determined some years ago that water in the American River contains asbestos fibers. Mixing water from the river into the EBMUD supply will therefore introduce asbestos fibers into the drinking water. Have you consulted the State Department of Health concerning this? Have you evaluated the possible impact? Do you have plans to monitor the asbestos content of the water supply?
I would be interested in your response to these questons.
Walter John

Comment Card

Freeport Regional Water Project

Date: 04/25/02

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: FRED KIRTLAN, VI KIRTLAN Title (if applicable):

Telephone: (916) 665-1085 Fax (916) 665-1085

Organization/Business (if applicable): FRED KIRTLAN AND SONS Email:

Address: 33490 SOUTH RIVER RD.

City: CLARKSBURG State: CA. Zip: 95612

☑ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

We are farmers and Sacramento River water users South of the Freeport Bridge.

Issue # 1

Can this proposed project be implemented without adversely effecting "down stream" water users by degrading the water quality and supply they currently have.

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

Comment Card
Freeport Regional Water Project

Date: 11/14/2002

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: Garth and Debbie Kuhagen Title (if applicable): Vineyard Owners

Telephone: 916-775-4664 Fax: 9160775-4666

Organization/Business (if applicable): Kuhagen, Inc. Email: kuhagen@thegrig.net

Address: P.O. Box 775

City: Walnut Grove State: CA Zip: 95690-0775

XXYes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

How are you going to stop the salt coming up river?

At what percentage of diluted sewer water will be flowing down river?

~~Wouldn't going down south to Tracy be less of an impact on the Sacramento~~ River which is already going through a stressful period?

Are there any predictions or "hunches" that this water project some day be selling our water to Los Angeles?

Who is going to help us financially when we have to extend our irrigation pumps to reach the water further but not suck up soot?

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

Ingrid Norgaard

From: Kurl & Jordan Ins Agcy [kurlandjordan@prodigy.net]

Sent: Tuesday, April 08, 2003 5:09 PM

To: info@freeportproject.org

Do you people have no conscience? Have you any idea of the damage you will cause to the delta ecosystem? Nevermind your fancy reports that are prepared by those with an interest in you paying great sums for reports satisfactory to your point of view. You people are of the same ilk as those that have done so much damage to Owens Valley and Mono Lake. Progress..yes...Freeport Project NO NO NO NO. How about having your customers try conserving or try building more large reservoirs rather than ruining the delta? This is only my opinion. But, I am quite sure it is similar to 99.9 % of people other than customers of EBMUD. I am sure you feel that the project has taken on a life of it's own and can't be stopped. But, a wrong is still a wrong and this project should not proceed as planned. I am certain that my input means nothing to any of you and there's probably no point in writing any more as this will probably just end up in the "round" file. From a delta lover, Stan Kurl 925 449 9042 or 925 606 7713.

Mack Road Merchants and Property Owners Association
C/O Mr. Perry's
7820 Alta Valley Way
Sacto., CA 95823

East Bay Municipal Utility District

July 16, 2002

Dear Madam or Sir:

At the last meeting of our group we viewed a presentation on the Freeport Regional Water Project. We were shown that it is possible that Mack Road may be chosen as a route for an eight foot in diameter water pipe. We, the undersigned, representatives of the Mack Road merchants and Property Owners Association are VERY STRONGLY OPPOSED TO ROUTING THIS PIPE DOWN MACK ROAD.

We feel that this routing this pipe down Mack Road would have a severe negative impact on the business, residential and cultural life on Mack Road. The business community has lost or will soon lose four of the major retail tenants on Mack Road, including Target, Longs Drugs, Ralph's Supermarket and K-mart. The loss of these tenants has had a negative impact on many other businesses. If Mack Road were to be torn up to lay pipe for the Freeport Water Project it is likely that many small businesses would be forced to close their doors.

There are many people who live on or within close proximity to Mack Road and rely on close by shopping. Loss of more retail outlets would be a severe hardship on these residents, many of whom do not drive.

Mack Road is also a major thoroughfare that serves two close by hospitals, Kaiser South and Methodist Hospital. Any attempt to re-route emergency vehicles such as ambulances around construction on Mack Road could have very serious implications.

During the presentation by the EBMUD staff it was made clear that there are other routes available for the pipe, in less populated and developed areas. We strongly urge you to choose one of these other routes.

Sincerely

Paulette Williams – Mountain Mike's Pizza

Debra Plise -Laurd's Ice Cream

Greg Burgeson -Subway

Virend Singh -El Pollo Loco

George Potiris - Mr. Perry's

Tambi Carrington - Lady Fitness

Comment Card

Freeport Regional Water Project

Date: _____

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: ANNA M. MESQUITA Title (if applicable): OWNER

Telephone: 916- 665-1751 Fax: _____

Organization/Business (if applicable): _____ Email: _____

Address: 32178-South River Rd

City: ~~Et~~ Clarksburg, State: CA Zip: 95612

☐ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

I am a widow. Been on this ranch for 54 years before that, 2 other generations. I have a lot of concerns.

(1) What is this project going to do to the pumpers in the river

(2) How about our Wells, (drinking)

(3) What about sewage pipe on other side of bridge. How will that effect us.

(4) What about the tides we have. Are we going to get salt water this far up, when you lower the river.

(5) Will any machinery the do this project make noise. Our one ranch away from point of pumping.

(6) Is all this going to lower the water table. How is it going to effect our ranches.

You can see, that meeting in Freeport did not ease my wor

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

Comment Card

Freeport Regional Water Project

Date: 5-24-02

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: George Potiris Title (if applicable):

Telephone: 916 423 3050 Fax: 916 689-7886

Organization/Business (if applicable): Perry's Restaurants Email:

Address: 7920 Alta Valley Drive

City: Sacto State: CA Zip: 95823

☒ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

I am strongly opposed to routing pipes down Mack Road. The pipeline construction would create a severe economic hardship for the businesses along Mack Road. I am also concerned that pipeline construction would impair the ability of emergency crews to access the people on Mack Rd when needed. Mack Road is also an important transportation conduit to Kaiser & Methodist hospitals

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

From: <CRakela@aol.com>
To: <info@freeportproject.org>
Date: 4/10/02 8:27PM
Subject: WWI Veteran Trees

The Freeport Boulevard Improvement Committee would like the City of Sacramento to recognize the potential historical importance of the remaining "Victory Trees" at the south end of SR160, from Interstate 5 south to the City limits. We feel that it is critical to recognize these mature trees as part of our local heritage.

The trees are the remaining specimens of a living memorial to Sacramento area veterans of World War I. Cultivated from seeds of trees found on the French battlefront where local soldiers died, the Veterans of Foreign Wars, Sacramento Women's Council and the City of Sacramento planted them in memory of their loved ones. Several groups since then, including the FBIC, continue to monitor and protect the vestiges of this living memorial and regional landmark. FBIC contends that the remaining "tunnel of trees" is potentially eligible for listing as a point of historical interest. The committee is also in the process of nominating the Victory Trees as heritage and landmark trees in Sacramento from the Victory Highway.

We ask the City to continue to help us to protect this living memorial and also help us to replant the boulevard in commemoration of the local veterans of W.W.I.

Carol Rakela
8721 River Road
Sacramento, CA 95832

CC: <DonBabbitt@msn.com>

Comment Laptop

Salute	First Name	Last Name	Organization	Address	City
Mr.	Jesse	Reese	Meadowview	2301 JohnStill Dr.	Sacramento

State	Zip Code	Are Code	Phone Number	Fax Number	E-Mail
Ca	95832	916	665-2195		rtgeri12@aol.

To be added in the mallinglist

Comment
I would like to know how you would handle the asbesto problem that will be taking place when the project begins, as a contruction worker I know the problems that asbesto causes so therefore I urge you to take a very clode look at how you will get of the material and where the materlal will be dumped at.

Attended Meeting
041502

From: Walt Seifert <bikesaba@pacbell.net>
To: <info@freeportproject.org>
Date: 4/13/02 3:09PM
Subject: Freeport Regional Water Project

Thanks for providing the opportunity to comment.

Please consider the following as work on the environmental documents and project design proceeds:

Potential disruptions to existing and planned bikeways, both on- and off-street.

Oppotunities to create new bikeways in conjunction with the project.

Opportunities to create crossings for cyclists and pedestrians at many common barriers (freeways, railroads, creeks and canals) in conjunction with the project.

Opportunity to provide amenities (benches and drinking fountain) for cyclists such as the City of Sacramento is doing with its new water intake near Old Sacramento.

SABA is a non-profit organization, representing thousands of cyclists, dedicated to making cycling safer, more convenient and pleasant.

Walt Seifert
Executive Director
Sacramento Area Bicycle Advocates (SABA)
(916) 444-6600
bikesaba@pacbell.net
www.sacbike.org

From: Walt Seifert <bikesaba@pacbell.net>
To: <info@freeportproject.org>
Date: 11/14/02 2:50PM
Subject: Project and bicycling

Please let me know if this is not the best way to contact you and make suggestions.

I have received information about the Freeport Regional Water Project, including a fact sheet and public comment overview.

I appreciate that "disruption of existing and planned bikeways" will be considered in the Draft EIR/EIS.

As the project is designed, the Sacramento Area Bicycle Advocates asks you to go beyond the possible negative effects the project might have and mitigation measures. We urge you to capitalize on the positive opportunites this project will present not only to implement planned bikeways, but to create new cycling opportunities. The geographical scope of this project, running as it does from the Sacramento River to the Folsom South Canal, is quite likely to create new possibilities for cycling conections and trails.

There may be the chance to create new bikeway links, including undercrossings of common barriers to cycling such as freeways and railroad tracks.

In addition, there may be the chance to build bike trails above project pipelines. Trails would help preserve the right of way from encroachment. Trails would be a community enhancement, aid in public acceptance of the project and provide for emergecy access and maintenance.

The Sacramento Area Bicycle Advocates is a non-profit organization that represents bicyclists. Our aim is more and safer trips by bike.

Thanks for your consideration.

Walt Seifert
Executive Director
Sacramento Area Bicycle Advocates (SABA)
(916) 444-6600
bikesaba@pacbell.net
www.sacbike.org

CC: "Ed Cox (Work)" <ecox@cityofsacramento.org>, Bob Ireland <irelandbo@saccounty.net>, Sue Teranishi <steranishi@sacog.org>

Salute	First Name	Last Name	Organization	Address	City
Mr.	Dan	Serpa	Resident	PO Box 527	Clarksburg
State	**Zip Code**	**Are Code**	**Phone Number**	**Fax Number**	**E-Mail**
Ca	95612	916	665-1952		
To be added in the mailinglist					

Comment
We are consern the the westernmost intake and associated pipeline along with the Northwest interceptor and the gas line will impede the flow of groundwater from the river and extensive flooding or higher groundwater levels in the area we farm. This causes seriuse impacts on the crops and livetock in the area. The other alternatives look a lot better than this one.

Attended Meeting
041102

April 28, 2002

Freeport Regional Water Project
c/o Greg Ellis at Jones and Stokes
2600 V Street
Sacramento, CA 95818

FAX No. 916-737-3030

Subject: Comments regarding the Freeport Regional Water Diversion Joint Project, of Sacramento County Water Agency and the East Bay Municipal Utility District. Notice dated March 22, 2002.

Dear Mr. Ellis:

This is in response to your request regarding the scope and content of the environmental information in connection with the preparation of an EIR / EIS for the Freeport Joint Project.

These comments and concern extends to resources, uses and values of the Sacramento-San Joaquin Delta and San Francisco Bay watershed protected by the public trust doctrine.

The East Bay Municipal Utility District (EBMUD) desires to utilize its 1970 contract for water from the Bureau of Reclamation (Bureau). Sacramento County desires to utilize its water rights and to move off the Lower American River. Much has happened since the original 1970 contract with the Bureau / EBMUD. Greater public awareness is now focused on impacts to fish and wildlife resources, instream ecosystems and water quality. Water supply projects for agricultural and urban uses have had a significant impact. For Example:

- Several species of naturally produced fish dependent upon conditions of the Lower American River and the Bay/Delta system are now listed under the Federal Endangered Species Act and California Endangered Species Act. Species now listed under the Federal Endangered Species Act (FESA), include the winter-run Chinook salmon (endangered), Delta smelt (threatened), longfin smelt (endangered) and the Sacramento splittail (threatened) and the capabilities to meet Delta water quality standards. In addition the Central Valley natural spawning Fall- / Late Fall- run Chinook salmon is a candidate species, the naturally spawning steelhead are now listed as threatened and the spring-run Chinook salmon is listed as threatened.

- Stringent water quality standards have been established to protect Delta water quality and associated beneficial uses covered by the public trust doctrine will require increased flows through the Delta.

- The Bureau's Central Valley Project has an obligation to contribute tributary flows as well as the flows necessary for meeting the Delta water quality and outflow standards.

- Central Valley Project Improvement Act (CVPIA) commits additional water to protect instream ecosystems, resources, uses and values as well as to lands of the National Wildlife Refuge system.

- An over riding objective of the CVPIA is the equal priority for fish and wildlife (also water quality) with other beneficial uses (CVPIA Section 3406(a) (3)).

- CalFed was established, in part, to investigate water supply issues and make recommendation for providing additional water supply.

- The Central Valley watershed has been determined to be significantly drier than what was understood in 1970.

- Treatment technologies have greatly improved and standards established by EPA (EPA-1997) that would allow urban areas to safely and economically process a Delta water supply, which is already being used by 21 to 23 million Californians.

The San Francisco Bay / Delta and tributaries are an integrated ecosystem that is not in good shape. Some have said that it is on the verge of collapse. The freshwater inflow so vital to its ecological and biological needs have been greatly reduced over the years. What is needed is more timely inflow to meet its ecological needs, in-Delta water uses and Delta export. Further reductions of inflow cast an additional burden on all water users tributary to the Delta for actions to mitigate project or activity damages.

Purpose of the Joint Diversion Project

Water is to be diverted from the Sacramento River near the town of Freeport. The new 185 million gallons per day (MGD) intake would also have a state of the art fish screens. Sacramento County desires to provide 85 MGD of surface water supply to the central and southern part of the County via its water rights (SMUD water right transfers) and contract with the Bureau. EBMUD wants to provide 100 MGD dry years supply to guarantee its customers a full water supply under drought hydrological condition as well as during planned Mokelumne system outage or system failure. EBMUD desires to exercise its 1970 contract with the Bureau to the full extent of that contract particularly during drought scenarios.

Some Background

Sacramento County would utilize it 15,000 acre-feet of Bureau contract water and 30,000 acre-feet of Sacramento Municipal Utility District entitlement water to meet the needs of south Sacramento County consistent with the Water Forum Agreement.

EBMUD has a water service contract with the Bureau for the delivery of up to 150,000 AF. EBMUD desires to use this contract water (it is not an entitlement i.e. water right) to supplemental its Mokelumne River supply. The storage capacity of EBMUD's facilities when at capacity is about 766,000 AF, with 151,000 AF in its Service Area and 616,000 AF in its Mokelumne River facilities of Pardee and Camanche Reservoirs (DWR Water Supply Outlook, October 29, 1999). This same reference indicates that EBMUD's historical carryover storage for the end of September is 542,200 AF; with 241.800 AF in 1977; with 378.900 AF in 1992, and with 469.500 AF in 1994. The highest end of September carryover storage being 614,200 AF in 1997 followed closely by 604,400 AF in 1996. According to the State Board's EIR for the 1995 Water Quality Control Plan (Nov. 1999), EBMUD's cumulative diversion face value is 931,874 AF with 510,000 AF cumulative direct diversion and cumulative storage 562,950 AF. Points of diversion are Indian Slough and the Mokelumne River. The 510,000 AF cumulative direct diversion could be considered EBMUD's annual and cumulative depletion from the total Delta inflow with impacts to fishes, other aquatic life and water quality for local and export use. EBMUD has investigated the viability of groundwater programs in several areas.

Comments and Concerns

The merits and responsibilities of an area of origin diverter (Sacramento County) should be fully explained. The merits and responsibilities of an area south and west of the Delta (including a Delta export users) must be fully explained.

The EBMUD / Sacramento County joint diversion is a matter of convenience for EBMUD. EBMUD gets to piggyback on the shirttail of an area of origin entity supposedly for economy of scale. EBMUD's Draft REIS for the Amendatory Contract was for an unknown down river diversion. The Freeport Joint Diversion was an alternative. However the DRAFT REIR did not have a preferred alternative carefully laid out and explained for all to review and provide comments. In addition that environmental analysis failed to consider the impacts of the total water supply / diversion project.

A pipeline will connect the Joint Point of Diversion with Folsom South Canal. The water would flow south to the EBMUD's Mokelumne Aqueduct for transport to its Service area. This would amount to a second EBMUD Peripheral Canal, the first being the Mokelumne Aqueduct. How realistic is it that the State Board will approve a new point of diversion so EBMUD can take its water around the Delta in another peripheral canal that will further deplete Delta inflow and exacerbate Delta water quality? Explain in detail.

Sacramento County and EBMUD can't continue to rely on the availability of surface flows during a drought period. A storage area is needed for both Sacramento County and EBMUD to store water in wet years to be available during years of drought. This must include an active ground water management program. Sacramento County is working on a conjunctive surface and groundwater consistent with the Water Forum Agreement. EBMUD must develop an active conjunctive surface and groundwater program as a part of its overall system. A detailed discussion of such a program and it integration is needed.

According to the FEIR for the Bay/Delta Water Quality Control Plan (SWRCB – Nov. 1999) enlarging Pardee Reservoir by 150,000 AF was feasible. Has EBMUD abandoned the option of maximizing its Mokelumne River source or is it holding this option open for later use? A detailed explanation is needed.

EBMUD has been a part of the Regional (Bay Area) Blending investigations conducted by CalFed. The first phase that investigation has been completed. Blending of several supplies may provide both a seasonal and / and a dry year water supply better than from a single source. Blending supplies (local groundwater, local surface supplies, Delta Bixler diversion, and Sierra sources) could provide the backup supply believed needed during drought or dry years. EBMUD's position / policy for meeting its dry year water needs through blending should be fully explained.

During the 1992-93 State Board hearings regarding EBMUD's Mokelumne River project, EBMUD representatives acknowledges that adequate Delta inflow is critical for maintaining the water quality necessary for agricultural, municipal and industrial purposes as well as maintaining public trust resources, uses and values. Under cross-examination of EBMUD folks, it was established that the Bixler facility is a viable solution for EBMUD to take some or all of its water because about 23 million Californians already do. The Delta city of Pittsburg treats Delta water to a lower level of trihalomethanes than EBMUD's pure snow melt; Contra Costa Water District diverts from the Delta and satisfactorily treats its water supply for municipal and industrial purposes. EBMUD representatives admitted that it could treat Delta water to the same drinking water standards as Pardee Reservoir water. Emerging water treatment technologies continue to

change altering the picture regarding the relative cost involved when comparing a Freeport diversion and Bixler and facilities diversion in conjunction with a local groundwater program.

EBMUD with its own peripheral canal (Mokelumne Aqueduct) is clearly a contributor to the problem of water quality in the Delta. The Delta needs more water not less especially when EBMUD needs the water. Has EBMUD or the Bureau attempt to work out an arrangement with DWR's State Water Project, to take water from Clifton Court Forebay? Diversion of Delta water at Bixler during wet years could be strategically timed to reduce impacts to Delta fisheries, maximize water quality and add flexibility if integrated with the Mokelumne supplies, i.e. such as blending to conserve Mokelumne River supplies. EBMUD should investigate the possibility of building an island reservoir (like a Clifton Court Forebay) at Orwood Tract for its use as temporary water storage, for water blending purposes and for direct diversion by the Bixler facilities? With such a facility, rights of way through private lands for the Freeport to the Folsom South Canal connection would not be needed therefore should result in a huge cost savings. Has EBMUD discussed building a connection with Contra Costa Water District facilities in order to obtain the desired water when needed? The cumulative impacts of all EBMUD facilities must be fully explained, including EBMUD's total depletion of Delta inflow, and impact to Delta water quality and south of the Delta supplies. A detail analysis, explanation and cost comparison if applicable are needed for each of these concerns.

The impacts to biological resources, their uses and ecological values must be fully identified. The number of aquatic species listed under the Endangered Species Act, makes it imperative that added emphasis be placed on conserving and protecting the aquatic ecosystem and its resources for all it beneficial uses and values. Mitigation measures that are to be implemented must be identified. A monitoring program must be clearly described, capable of being implemented and adequately funded through the life of the project.

The groundwater management plans of Sacramento County and EBMUD must be fully explained, with the scheme / plan capable of being implemented to meet needs. EBMUD without an operational conjunctive surface and groundwater plan will not be able to meet is dry year water needs per project purpose. EBMUD has had groundwater investigations elsewhere including Bayside, Diablo and Bixler groundwater projects. The status of each investigation must be fully explained and the potential of each to provide a partial supply during dry years or during projected downtime of the Mokelumne River facilities. A detailed explanation is needed.

The project is to provide 85 MGD of surface water to Sacramento County, and provide 100 MGD dry year water supply to EBMUD in an effort to reduce future dry year shortages. These figures do not present the entire picture. What is the maximum diversion by Sacramento County in acre-feet and cubic feet per second? What is the total diversion allowable annually by year types? Explain in detail.

What is the maximum diversion by EBMUD in acre-feet and cubic feet per second? What is the average annual water supply needs during the drought period? How much water does EBMUD need on an annual basis? What is EBMUD's maximum allowable diversion and what is its minimum allowable diversion in a calendar year? What is the least amount of water EBMUD can divert and under what conditions? What is the total diversion allowable by year types? Any limitation of the Amendatory Contract should be discussed in this EIS / EIR, not contained in another long ago completed document. Explain in detail.

Discuss impacts to Folsom Reservoir storage and its cold water pool if the Bureau decides to deliver the amounts of water requested by Sacramento County and EBMUD from Folsom Reservoir. What are the impacts to Folsom reservoir storage and its cold water pool by water year types? What are the impacts to Shasta Reservoir storage by year types? What are the impacts to export supplies? Explain in detail.

EBMUD has undertaken several investigations to find partial alternative supplies. It is clear that several small projects either alone or integrated with present surface supplies might be viable options for EBMUD to meet a part or all of its desired water supply needs in a timely fashion.

The threshold for considering a significant impact should be determined by the public, the readers of the EIR / EIS documents, not EBMUD or Sacramento County administrators. There is considerable evidence that can illustrate that project proponent values are not the same as someone concerned about the public trust, endangered species, anadromous fishes and Delta water quality. The cumulative impact of minor or insignificant impacts associated with water development have had a severe cumulative impact on the aquatic ecosystems, fish resources and water quality of the Bay / Delta and tributaries. One only has to look at the number of aquatic species that have been listed under the Federal Endangered Species Act to see that water development has significantly impacted aquatic resources and ecosystems.

It is important that the impacts of the construction and operation of the proposed project be thoroughly discussed. It is also important that alternatives be discussed that meet the proposed need. Mitigation measures must be fully explained and be capable of being accomplished.

Please respond to these comments and concerns in the preparation of the EIR / EIS for the Freeport Regional Water Diversion Joint Project of the Sacramento County Water Agency and the East Bay Municipal Utility District.

Sincerely,

Felix E. Smith
4720 Talus Way
Carmichael, Ca 95608

cc: Save the American River Association
Environmental Defense
Environmental Water Caucus
Bay Institute of San Francisco

SacEBMUDJtPrApril232002

Salute	First Name	Last Name	Organization	Address	City
Ms.	Judy	Thomas		2155 Ferran Ave.	Sacramento
State	**Zip Code**	**Area Code**	**Phone Number**	**Fax Number**	**E-Mail**
Ca	95832	916	395-4939		tjudydt@aol.c

To be added in the mailinglist

✓

Comment

very much against the pipeline going down Meadowview.

Attended Meeting

041502

SAVE THE AMERICAN

SAVE THE AMERICAN RIVER ASSOCIATION, INC

P.O. BOX 277638 - SACRAMENTO, CA 95827-7638 - (916) 387-1763

April 28, 2002

Attn: Greg Ellis
Freeport Regional Water Project
2600 V Street
Sacramento, CA 95818

Subject: Comments regarding the Freeport Regional Water Diversion Project, A Joint Project of Sacramento County Water Agency and the East Bay Municipal Utility District. Notice dated March 22, 2002.

Dear Mr. Ellis:

This is in response to your request regarding the scope and content of the environmental information needed in preparation of an Environmental Impact Report (EIR) under the National Environmental Policy Act and an Environmental Impact Statement (EIS) under the California Environmental Quality act for the Freeport Joint Diversion Project.

SARA is a grass roots organization, established in 1961 to promote the protection, conservation and restoration of the lands, waters and fish and wildlife resources of the Lower American River. SARA's concern extends to riparian and aquatic ecosystems that are required to conserve, protect and restore our native fish resources such as Chinook salmon and steelhead and other native fish and wildlife. This concern extends to resources, uses and values downstream into the Sacramento-San Joaquin Delta and San Francisco Bay protected by the public trust doctrine.

Much has happened since the original Bureau of Reclamation (Bureau) / East Bay Municipal Utility District (EBMUD) contract of 1970. There is greater public awareness of the impacts to fish and wildlife resources, water supply, water quality for agricultural and urban uses affected by the construction and operation of the Central Valley Project and other similar projects. For Example:

- Several species of naturally produced fish dependent upon conditions of the Lower American River and the Bay/Delta system are now listed under the Federal Endangered Species Act and California Endangered Species Act. Species now listed under the Federal Endangered Species Act (FESA), include the winter-run Chinook salmon (endangered), Delta smelt (threatened), longfin smelt (endangered) and the Sacramento splittail (threatened) and the capabilities to meet Delta water quality standards. In addition the Central Valley natural spawning Fall- / Late Fall- run Chinook salmon is a candidate species, the naturally spawning steelhead are now listed as threatened and the spring-run Chinook salmon is listed as threatened.

- Stringent water quality standards have been established to protect Delta water quality and associated beneficial uses covered by the public trust doctrine will require increased flows through the Delta.

- The Bureau's Central Valley Project has an obligation to contribute tributary flows as well as the flows necessary for meeting the Delta water quality and outflow standards.

- Central Valley Project Improvement Act (CVPIA) commits additional water to protect instream ecosystems, resources, uses and values as well as to lands of the National Wildlife Refuge system.

- An over riding objective of the CVPIA is the equal priority for fish and wildlife (also water quality) with other beneficial uses (CVPIA Section 3406(a) (3)).

- CalFed was established, in part, to investigate water supply issues and make recommendation for providing additional water supply.

- The Central Valley watershed has been determined to be significantly drier than what was understood in 1970.

- Treatment technologies have greatly improved and standards established by EPA (EPA-1997) that would allow EBMUD to safely and economically process a Delta water supply, which is already being used by 20 to 22 million Californians.

The Joint Project

The purposes of the project is to provide 85 million gallons per day (MGD) of surface water to Sacramento Sacramento County, and to provide 100 MGD dry year water supply to EBMUD to reduce its future dry year shortages. Water to be diverted from the Sacramento River near the town of Freeport. Sacramento County desires to provide a water supply to the central and southern part of the County via its water rights and settlement contract with the Bureau. EBMUD wants to guarantee its customers a full water supply under drought hydrological condition as well as planned system outage or system failure. EBMUD wants to exercise its 1970 contract with the Bureau.

SARA is supportive of the efforts of EBMUD, USBR and Sacramento County to find a way to provide a supplemental water supply while protecting the American River. We are, nevertheless, mindful that the proposed diversion, while reducing negative impacts to the American River, can have substantial adverse impacts on the Sacramento River and Delta. To that end, it is vital that these impacts be discussed thoroughly in the EIR/EIS along with alternatives to minimize them. Some of these issues and possible mitigating measures are listed below.

Some Background

EBMUD has a water service contract with the Bureau for the delivery of up to 150,000 AF. EBMUD desires to use this contract water (it is not an entitlement i.e. water right) to supplemental its Mokelumne River supply. The storage capacity of EBMUD's facilities when at capacity is about 766,000 AF, with 151,000 AF in its Service Area and 616,000 AF in its Mokelumne River facilities of Pardee and Camanche Reservoirs (DWR Water Supply Outlook, October 29, 1999). This same reference indicates that EBMUD's historical carryover storage for the end of September is 542,200 AF; with 241.800 AF in 1977; with 378.900 AF in 1992, and with 469.500 AF in 1994. The highest end of September carryover storage being 614,200 AF in 1997 followed closely by 604,400 AF in 1996. According to the State Board's EIR for the 1995 Water Quality Control Plan (Nov. 1999), EBMUD's cumulative diversion face value is 931,874 AF with 510,000 AF cumulative direct diversion and cumulative storage 562,950 AF. Points of diversion are Indian Slough and the Mokelumne River. The 510,000 AF cumulative direct diversion could be considered EBMUD's annual and cumulative depletion from the total Delta inflow with impacts to fishes, other aquatic life and water quality for local and export use.

Comments and Concerns

According to the FEIR for the Bay/Delta Water Quality Control Plan (SWRCB – Nov. 1999) enlarging Pardee Reservoir by 150,000 AF was feasible. Has EBMUD abandoned the option of maximizing its Mokelumne River source or is it holding this option open for later use? A detailed explanation is needed.

To what extent will waters released from storage in Folsom Reservoir to provide for EBMUD/Sacramento County diversions at Freeport conflict with fishery protection flow management (flows and temperatures) in the American River, particularly in dry years? If there is a conflict between the needs of the river, and EBMUD/Sacramento County demands, how will it be reconciled to minimize impact to the river?

EBMUD's Draft REIS for the Amendatory Contract was for an unknown down river diversion. The Freeport Joint Diversion was an alternative. However the DRAFT REIR did not have a preferred alternative carefully laid out and explained for all to review and provide comments. In addition that environmental analysis failed to consider the impacts of the total water supply / diversion project.

The merits and responsibilities of an area of origin diverter (Sacramento County) should be fully explained. The merits and responsibilities of an area south and west of the Delta (including a Delta export users) must be fully explained.

EBMUD has been a part of what has been called the Bay Area Blending investigations conducted by CalFed: The first phase that investigation has been completed. The outcome of the first phase of that investigation and EBMUD's position / policy on the investigation / potential project or projects for meeting or not meeting its dry year water needs must be fully explained.

A pipeline will connect the Joint Point of Diversion with Folsom South Canal. The water would flow south to the EBMUD's Mokelumne Aqueduct for transport to its Service area. This would amount to a second EBMUD Peripheral Canal, the first being the Mokelumne Aqueduct. How realistic is it that the State Board will approve a new point of diversion so EBMUD can take its water around the Delta in another peripheral canal that will further deplete Delta inflow and exacerbate Delta water quality? Explain in detail.

During the 1992-93 State Board hearings on EBMUD'S Mokelumne River project, EBMUD representatives acknowledges that adequate Delta inflow is critical for maintaining the water quality necessary for agricultural, municipal and industrial purposes as well as maintaining public trust resources, uses and values. Under cross-examination of EBMUD folks, it was established that the Bixler (Clifton court type) facility is a viable solution for EBMUD to take some or all of its water because about 22 million Californians already do. Locally the Delta city of Pittsburg treats Delta water to a lower level of trihalomethanes than EBMUD's pure snow melt; Contra Costa W.D. diverts from the Delta and satisfactorily treats its water supply for municipal and industrial purposes. EBMUD representatives admitted that it could treat Delta water to the same drinking water standards as Pardee Reservoir water.

EBMUD with its own peripheral canal is clearly a contributor to the problem of water quality in the Delta. Did EBMUD or the Bureau attempt to work out an arrangement with DWR's State Water Project, to take water from Clifton Court Forebay? Has EBMUD or the Bureau investigated the possibilities of building an island reservoir (like a Clifton Court Forebay) at Orwood Tract for its use as temporary water storage and for water blending purposes? Has EBMUD discussed building a connection with Contra Costa Water District facilities in order to obtain the desired water when needed? A detail analysis and explanation of these concerns is needed.

The impacts to biological resources, their uses and ecological values must be fully identified. The number of aquatic species listed under the Endangered Species Act, makes it imperative that added emphasis be placed on conserving and protecting the aquatic ecosystem and its resources for all it beneficial uses and values. Mitigation measures that are to be implemented must be identified. A monitoring program must be clearly described, capable of being implemented and adequately funded through the life of the project.

The groundwater management plans of Sacramento County and EBMUD must be fully explained, with the scheme / plan capable of being implemented to meet needs. EBMUD without an operational conjunctive surface and groundwater plan will not be able to meet is dry year water needs. EBMUD has had groundwater investigations elsewhere including Bayside, Diablo and Bixler. The status of each investigation must be fully explained and the potential of each to provide a partial supply during dry years or during projected downtime of the Mokelumne River facilities.

The cumulative impacts of all EBMUD diversions from the Sacramento and Mokelumne rivers which will result in a significant depletion of Delta inflows and impact its water quality must be fully explained, as well as the ability to meet south-of-the-Delta supply requirements.

The project is to provide 85 million gallons per day (MGD) of surface water to Sacramento County, and provide 100 MGD dry year water supply to EBMUD in an effort to reduce future dry year shortages. These figures do not present the entire picture. What is the maximum diversion by Sacramento County in acre-feet and cubic feet per second? What is the total diversion allowable annually, ***and what are the amounts intended to be diverted by water year type***,? Explain in detail.

What is the maximum diversion by EBMUD in acre-feet and cubic feet per second? What is the average annual water supply needs during the drought period? How much water does EBMUD need on an annual basis? What is the maximum allowable diversion and what is the minimum allowable diversion in a calendar year? What is the least EBMUD can divert and under what conditions? Does EBMUD propose to take its full contract water allocation in dry years, while other Sacramento and American River purveyors face cut-backs, or are limited to Water Forum agreed upon reductions or restrictions? Please provide details, data, and rationale in response to these questions.

Several small projects either alone or integrated with present surface supplies might be a viable option for EBMUD to meet its desired water supply needs in a timely fashion. ***Please evaluate that alternative.***

Please respond to these comments and concerns as you prepare the EIR / EIS for the Freeport Joint Diversion Project.

Sincerely,

Alan D. Wade, President
Save the American River Assn., Inc.

Comment Card

Freeport Regional Water Project

Date: April 30, 02

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: DIANE WATKINS Title (if applicable): _____

Telephone: 916 665-2408 Fax: Same

Organization/Business (if applicable): _____ Email dmwarpl@aol.com

Address: 800 N Freeport Blvd.

City: Sacramento State: CA Zip: 95832

☑ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

1- With the population increase forecasted for the Sacramento area, plus the fact that water is already planned to be taken out of the river north of Sacramento, I am very concerned about this project. I feel desalinization plants should be built for the bay area. Also, since 60% of water use is spent on keeping lawns green, public education is needed. (in California)

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

Salute	First Name	Last Name	Organization	Address	City
Mr.	Keith	Watts	Property Owner/ Bordeu Ra	8100 E. Orchard Rd.	Acampo
State	**Zip Code**	**Area Code**	**Phone Number**	**Fax Number**	**E-Mail**
Ca	95220	209	334-4070	368-4628	watts@netez

To be added in the mailinglist

☑

Comment

Concern about destruction of income producing vineyard, infrinment of farming practices, loss of property value, disruption of vineyard operations. My properties are highly developed with long term income contracts. Would want as little disruption of my properties as possible with fair equitable consideration given to all negative impacts. I would also like impact on routing through my properties if pipleline had to be on my properties.

Attended Meeting

041802

Comment Card

Freeport Regional Water Project

Date: 10/15/02

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: Bob Webber, RD 999 Title (if applicable): Manager

Telephone: 916-775-2144 Fax: 916-775-9139

Organization/Business (if applicable): RD 999 Email: rdclist999@sprintmail.com

Address: 38563 Netherlands Rd.

City: Clarksburg State: CA Zip: 95612

☑ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

Water quality analysis of Irrigation suitability @ Clarksburg.

Include: New West Sac. sewage input of 15,000 gpm + S. Natomas input to Sac. sewage plant.

Bl

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

Comment Card

Freeport Regional Water Project

Date: 10-15-02

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: KERI WILSON Title (if applicable):

Telephone: 916-744-1455 Fax: 916-744-1373

Organization/Business (if applicable): Email:

Address: 50404 GAFFNEY ROAD

City: CLARKSBURG State: CA Zip: 95612

☑ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

AGRICULTURAL IMPACTS IN CLARKSBURG AND LOWER RIVER, WATER CLEANLINESS, PURITY ISSUES

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

Comment Card

Freeport Regional Water Project

Date: _____

Thank you for attending today's meeting and participating in the scoping process for the Freeport Regional Water Project. The purpose of the scoping process is to seek early public input and to identify issues and concerns to be examined in the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS). The scoping process also helps to identify project impacts, alternatives, mitigation measures, and environmental subject areas to be addressed.

(please print)

Name: Russ VanLobenSels Title (if applicable): _____

Telephone: 916 775-1941 Fax: 916 775-1941

Organization/Business (if applicable): Amistad Ranches Email: amistadranches@excite

Address: P.O. Box C

City: Courtland State: CA Zip: 95615

☒ Yes, I would like to be added to your mailing list to receive newsletters, information mailings, and meeting notices.

Please note which issues about the project you would like to see addressed in the Draft EIR/EIS, and any other issues related to the scoping process, meetings, or facilities.

1. As the regional sanitation outfall volume increases what will the reduction in flow from upstream diversion especially in dry years do to water quality immediately downstream from the outflow and will it comply with gov. requirements
2. Especially in dry years, what will removal of between 5-8% of volume do to salinization in the Delta
3. Could limits for diversion be required based upon river flow

Thank you for participating in this important process. Please submit this form to a project representative by April 30, 2002, to ensure that your comments are included in our studies. If mailing, please send to: Freeport Regional Water Project, c/o Gregg Ellis, 2600 V Street, Sacramento, CA 95818.

Attachment B

Summary of Comments and Questions, Freeport Regional Water Project Scoping Meetings, April 8–April 25, 2002

Attachment B

Summary of Comments and Questions Freeport Regional Water Project Scoping Meetings, April 8–April 25, 2002

Oakland 4/8/02 (Attendance: 20)

- What are the environmental justice issues near Freeport?
- Does this project exceed EBMUD's need for drought considerations?
- Explain the shifting uses of CVP water.
- Potential for water quality and quantity impacts.
- Additional reductions to Westlands could be problematic.
- Impacts on ESA species may occur.
- Impacts on existing users should be mitigated.
- EIR/EIS tiering from a document that is being litigated.
- Previous EIR/EIS didn't adequately address water supply or quality aspects.
- Approach to document tiering should be reconsidered.
- Freeport alternative had previously been considered infeasible.
- Mokelumne River alternatives or other potential supplies should be adequately analyzed.
- Current litigation needs to be considered.
- Concerned that project relies on using water during dry years.
- Wet year projects should be considered/evaluated.
- Document will evaluate water supply and quality effects?
- Hydrologic modeling will include public/agency involvement?
- Santa Clara Valley Water District encourages coordinated project development, including CALFED and Bay Area blending/exchange.
- Concerned with water supply and quality effects.

- FRWA needs to develop consistent significant threshold/standard.
- Project should be operated to reduce impacts to LTS.
- Transcription of meeting wanted by participants.

Freeport 4/11/02 (Attendance: 24)

- Where will the water treatment pipeline go? How big is the pipe?
- Why is the Meadowview corridor preferred over Cosumnes corridor?
- Have you considered a common ditch? Could share with water treatment pipeline.
- Are you coordinated with County Public Works in regard to all of the work being done on Calvine?
- Should be coordinating with the City of Elk Grove.
- Where is the extra water coming from?
- Where are the Yolo County representatives?
- You may be affecting tribal lands—are you aware of that?
- Fisheries have already been greatly affected—impacted generations of people.
- Project is being forced down our throats.
- Many issues still need to be discussed.
- Water quality/water rights/extra water/etc.
- Water for Yolo County farmers comes from the Sacramento River, which is already limited.
- Where is the Delta users' guarantee for water during dry years? This is when flows are a real concern.
- Can this proposed project be implemented without adversely affecting down stream water users by degrading the water quality and supply they currently have?
- What happens during the rainy season? High water is a big concern with regard to the sewage pipeline.
- Are you planning any groundwater pumping facilities?
- There is a possible flood control project along the east levee of the Sacramento River that could affect this project.
- Though not necessarily a NEPA/CEQA issue, the matter of underseepage and its implication for flood risk should be seriously considered. SAFCA would be pleased to discuss this concern with project staff.

- Levee crossings and river work will require careful review of SAFCA, Reclamation Board, and the Corps.
- Project staff should familiarize themselves with the Sacramento River Corridor Flood Management Forum.
- Concerned about the westernmost intake and associated pipeline along with the Northwest Interceptor and the gas line that will impede the flow of groundwater from the river and potentially cause extensive flooding or higher groundwater levels in the area we farm.

South Sacramento 4/15/02 (Attendance: 24)

- How large is the pipe? How deep will you dig? How long can we expect the disruption last?
- Concerns expressed by the State Water Contractors representative:
  - SWC supports CALFED and hopes the Freeport Project is integrated with CALFED projects;
  - Concerned about impacts on endangered species—particularly winter run salmon and delta smelt;
  - The volume of water being taken from the river will impact quality and quantity of water for downstream users;
  - Be sure to look at all alternatives when drafting environmental documents.
- Does this project come under the CPUC?
- Do you have the power of eminent domain?
- What will determine the pipeline route? What are the factors? How will they be ranked?
- There is no direct benefit to the community you will be impacting (Meadowview area). Do you want to be good neighbors and contribute something in return to the local community?
- Have you considered a desalination plant instead of developing the Freeport Project?
- Will 185 million gallons be taken out every day?
- How will the intake be constructed? It will be more expensive if you build on the Yolo County side of the river.
- The term “residential uses” encompasses what?
- Impacts on water skiers a concern.
- Why is pulling the water off of the Sacramento River now a better idea than taking it from the American?

- How will you be handling the asbestos problem once the project begins? Urge you to take a close look at how you will get rid of the material and where it will be dumped.
- Very much opposed to pipeline going down Meadowview Road.
- Water quality analysis of irrigation suitability at Clarksburg.
- Agricultural impacts in Clarksburg and down river. Water cleanliness, purity issues.

Herald 4/18/02 (Attendance: 25)

- How big is the pipeline?
- Any consideration given to using the Rancho Seco pump station?
- Will you be blending Sacramento and American River water?
- SMUD is supportive of the project, but water quality is a big concern. They are currently working with EBMUD staff on this issue, but hope that the environmental documents address water quality impacts in the Folsom South Canal.
- Mixing of American and Sacramento River water will impact the recreational water quality at Rancho Seco Lake.
- What will the pipe be lined with? What are the impacts on the river? What about reverse flow impacts?
- How big will the pumps be?
- Is there a wet year guarantee?
- Will the water be treated before it enters the FSC?
- Are you putting the pump station right at the end of the canal?
- What about the correlating lights and noise? Truck traffic impacts? Where will the aggregate be stored during construction if used?
- Has the location of the pump station been changed since the last time you were here?
- How often will the pump run? How loud will it be?
- Clay Station Homeowners Assn. comments:
  - Treatment plant—don't want to see it, hear it;
  - Traffic on Clay Station Rd.—would prefer construction to occur during summer;
  - Want access to water for Herald Fire Department;
  - Want road improvements at Clay Station and Elliott Rd.

- Path of the pipeline is a concern—please evaluate all impacts fairly and equitably.
- Where pipe meets the FSC—any facilities planned at that location?
- Concern over the lack of details on the maps for the Herald area. Please have more detailed maps the next time you come to make a presentation.
- Location of the pump station in relation to the canal.
- What are your expected hours of operation? What should we expect on a day-to-day basis?
- Will you be doing groundwater contamination mitigation or causing groundwater contamination issues?
- How many feet of right-of-way will you need during construction along roadways?
- How many total treatment plants are associated with this project?
- Concerned about destruction of income producing vineyard, infringement of farming practices, loss of property value, disruption of vineyard operations.

Central Sacramento 4/25/02 (Attendance: 9)

- Comments from SMUD: Don't want to see EBMUD customers deprived of water, but concerned about the contamination that may occur from water blending in the FSC. Encourage water treatment before putting into FSC. Concerned that Freeport Project may affect future SMUD projects.
- What is environmental justice? What is the benefit of giving your opinion if project decisions (pipeline location, etc.) have already been determined?
- Where is Reclamation getting this "extra" water (Folsom Dam, American River, etc.)? Reclamation should be clear about that.
- Encourage project coordination with NOAA Fisheries and USFWS.
- Property owner concerned over star thistle finding its way into his fields.
- What are the plans for marketing the additional water that comes from this project?
- Project managers urged to option land now to make sure it is available for the needed treatment facilities.
- Consider Gerber over Calvine Rd. for pipeline route. Fewer property owners on Gerber.
- EIR/EIS should clearly identify water qualities along with where, when, and how the diverted water will be used now and in future projections. The "dry year" definition should be clearly provided.

- Both EBMUD and SCWA contracts should be included in the EIR/EIS.
- The EIR/EIS cumulative impact section should include the full facility diversion capability in its analysis.
- The National Environmental Policy Act and implementing procedures require compliance with the Fish and Wildlife Coordination Act and the Endangered Species Act. Have these processes been initiated?

Attachment C

Transcripts of Public Hearings

April 8, 2002

April 11, 2002

April 15, 2002

April 18, 2002

April 25, 2002

TRANSCRIPT OF PUBLIC HEARING

EAST BAY MUNICIPAL PUBLIC UTILITY DISTRICT

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In the matter of:	Freeport Project	)	**Item No.:**
		)	
		)	**Date:** April 8, 2002
		)	**Time:**
		)	**Place:**
Taken by:	Cassette	)	
		)	
		)	

Prepared for
Jones & Stokes

Transcribed by

Foothill Secretarial Service
916/443-7400 – Telephone
916/443-7421 – Facsimile

*****

PUBLIC MEETING

Ms. Barbieri: We've got a brief presentation here for you and after the presentation we'll have - um - time for some questions and answers and - um - also a period for public comment. Uh - but first, we about a 15 minute presentation and - uh - to lead that off, I'd like to introduce the East Bay Municipal Utility District - uh - Board President. She also serves double-duty as the President of the Freeport Regional Water Authority - Katy Folks (phonetic).

Ms. Folks: Good evening. On behalf of the Board (inaudible) as well as East Bay, one of the most important of priorities, and finally with this historic agreement with the County of Sacramento, our community can be assured of a certain and reliable water supply during future drought conditions. The Freeport Project is especially significant because it - it provides a regional solution for the concerns and water supply issues identified both by Sacramento County and by East Bay MUD. By seizing this opportunity to work together in order to - to - uh - solve both of our problems, we are demonstrating true cooperative regionalism. I'd like to take a moment right now to acknowledge the Project's other partners, the City of Sacramento and the Bureau of Reclamation for their efforts to help make this project possible. Without their help we wouldn't be this far. I've been appointed by our Board, along with John Coleman to be our representatives on the Freeport Regional Water

Authority Board, Board of Directors and I've also been elected their first Chair. This is the body that will guide the development of the Freeport Project. On behalf of East Bay MUD and the Authority, I'd like to thank you again for taking the time to come tonight. Your questions, your concerns and your feedback are very important to us and will help us make a - make a good project go forward. Thank you very much. And who am I turning this over to now?

Ms. Barbieri: Thank you. Um - next up we have Maria Selise, and she will be giving a brief presentation about the process part of this project. Um - talking about the environmental review, the Environmental Impact Report and Environmental Impact Statement, and also a very important piece of this - uh - project, the - uh - public participation - public involvement component.

Um - and while she's getting ready for that, I just wanted to introduce myself. I'm Janet Barbieri, I'm with Jones & Stokes, and - um - my job - my responsibility for this project is the public outreach and participation, which we all take very seriously. It's a very important part of this project and it's my personal responsibility to make sure that - um - that piece of this project is covered.

Um - after Maria does her piece of the presentation - uh - we will have - uh - further presentation on - uh - the components of the project and then we'll go into the question and answer. So - Maria:

Ms. Selise: Thank you Janet. Can you all hear me okay? I thank you all for participating tonight. We do appreciate your attendance. I'm gonna briefly just talk about some of the Project background and history, then I'll go into the environmental review process and how the comments tonight and the future comments we receive are incorporated into that process. And then Mark Lusine is here to talk about the Project description, the purpose, and the schedule. In the end he'll briefly describe the Freeport Regional Water Authority which was newly formed, which Katy mentioned earlier.

So how did we get here? In 1970 East Bay MUD signed a Central Valley Project Water Contract with the Bureau of Reclamation and that was for 150,000 acre feet on the American River. In 1998 the Sacramento County Water Agency also signed a contract for about 15,000 acre-feet. In 1997 we initiated a - a environmental document to evaluate a joint project with the City and County of Sacramento on the American River. We published the Draft Environmental document that included alternatives, not just available to East Bay MUD on the American, but in addition to our joint partners. In 2000 we published the Revised Environmental document that covered taking water not only from the American River but the Sacramento River and in addition - uh - within the Delta. So when 2001 East Bay MUD revised their contract with the Bureau of Reclamation to include an alternative to take water from

the Sacramento River near the area of Freeport. So we entered into a Memorandum of Understanding with the City and County of Sacramento and the Bureau of Reclamation to jointly work together towards the Project - uh - within the - taking delivery of water within the Freeport area. And then on Valentine's Day of this year we signed the Joint Powers Agreement which created the Freeport Regional Water Authority which will initiate this project. So now we're here today with the beginning of the Environmental Review Process and scoping for this new environmental document. The purpose of this environmental review to study and evaluate potential impacts and alternatives and shepherd that process we use the California Environmental Quality Act and the National Environmental Policy Act. The Freeport Regional Water Authority will act as the CEQA - California lead agency and the Bureau of Reclamation will be the federal lead agency for the Environmental Impact Statement portion.

And Rob Schroeder is here today. I'd just like to introduce him from the Bureau of Reclamation and he'll be here afterwards to answer any questions you may have.

So purpose of scoping and why we're here today. First of all, inform the public about the Project. We've done some feasibility studies and we have some alternatives to present to you today. In addition, the alternative that was - uh - focused on in the

recirculated environmental document which was at Freeport, identified who the interested parties. We have six years of history here and these are the environmental documents we've created so far from 97 and 2000. We conducted about 40 pre-scoping meetings over the last six months to develop our mailing list of about 6000 people to inform them about this meeting - these meetings in April. There's five scoping meetings. Also identify potential alternatives and significant issues related to those alternatives and to help gather information to focus the environmental document. This is a list of the chapters so far that we'll be covering in this environmental document. And just an example of how some your feedback tonight will be incorporated, at one of the pre-scoping meetings I was at - at the Meadowview Community Center, which encompasses about a quarter of the pipeline alignment routes from Freeport to the Folsom South Canal. A significant issue to that community is environmental justice. So we've covered that before in a chapter on related issues, but we're dedicating a whole chapter to that in this new document that we'll publishing. So that's just an example of how that input has already been incorporated into this new document. So we've got public meetings scheduled - five of em in April and we'll continue to have - uh - public meetings, focus. Meetings with property owners, business interests and others throughout the process. In addition -

uh - we published a fact sheet to notify everybody about this meeting and we'll be giving updates - uh - to you all that you will get as direct mail from those fact sheets. So I encourage you here, if you did not already receive a fact sheet directly mailed to you, make sure we have your address or your card and we'll add you to your - to our mailing list so you'll receive those directly from us. In addition, we've set up a web page for the Project. It should be online today at Freeportproject.org. And we have representatives listed in the fact sheets that are at the back table where you signed in from the City and the County, the Bureau of Reclamation, and East Bay MUD. So you contact us by phone with your questions. This is a list of the future meetings this month - the scoping meetings that we're conducting. There's also a map in the fact sheet if any of you would like to attend those. And this is an example of the public process and how - and where your input will be added to this document. Do you see the first four pink boxes - that gets you from today to March of 2003 which is a time - the time period where we are focusing on to select the preferred alternative. So all of your comments that we get within the next year will focus - help focus the District on and the City and the County and the Bureau on which preferred alternative we may select based on the ones we've evaluated, the impact to those alternatives, and the feedback we receive from the communities. Then you see this long

pink box here - public participation continues during construction and design of the Project once we've selected a preferred alternative. So an example of the input during this period here would be you own a nursing home for example on one of the pipeline routes and you're concerned about the hours of construction. That's the kind of feedback that we would incorporate and address. Whereas, the first four are gonna be more focused towards the actual selection of the preferred alternative.

And I'd like to now introduce Mark Lusine who will explain the - uh - Project description, purpose and schedule. Mark -

Mr. Lusine: Thank you Maria. I'm gonna describe a few things about the Project. Uh - we only have time to get it into a general sense here, but I hope that - uh - it helps you as you go through our documents and get a better feel to make your comments. Uh - the - the Project is to deliver up to a 185 million gallons of surface water from the Sacramento River to - to parties - uh - the Sacramento County Water Authority, which will have a capacity of 85 million gallons per day. Uh - and the East Bay Municipal Utility District will have a capacity of up to 100 million gallons per day. Uh - the Project has - uh - uh - several facilities to it. Uh - uh - it has an intake. Uh - and I'll get into more detail, some of the alternatives that we have. The intake on the Sacramento River near - near Freeport just - uh - below the - uh - uh - metropolitan area of - uh - from Sacramento

and - uh - a - uh - pipelines to principle - uh - locations for pipelines - uh - totaling about 30 - 35 miles of pipelines. It also has three pumping plants and two - uh - water treatment plants. And the Project - uh - is- is for the benefit - uh - primarily of the - uh - of the County - Sacramento County and East Bay MUD, but it is - uh - supported by the City of Sacramento who has - who has been involved in the development of the Project up to this point and the Bureau of Reclamation - uh - since the Central Valley Project will be - uh - one of the primary sources of water for this project. Uh - the - this project has - uh - a number of - of benefits and its very important for those reasons. Uh - first it is a - the primary diversion point - a point of surface water for the County of Sacramento and they'll use that water in conjunction with ground water in Central Sacramento County - uh - for supplying water to - uh - newly developed areas in Sacramento County. Uh - the Project also will all - allow East Bay MUD to - uh - reduce the impacts to its customers during drought periods. Then since it's a joint facility - uh - there are some advantages there - uh - in - in reducing costs for the participating partners, as well as the opportunity to minimize the - uh - environmental effects of - of both - uh - purposes. And then also there is - uh - an opportunity to provide additional partners - uh - with a benefit of currently un - unassigned capacity in the - in the Project. Uh - this is a little - uh -

more detail on the intake locations. Uh - the - as I was saying the - uh - uh - Sacramento River is on the left there. Uh - if I can move over here a little bit here. Um - these are - are the first intake that we considered here. Uh - it's property owned by the City of Sacramento - Sacramento. Uh - we're also considering other - uh - locations - uh - uh - and somewhat downstream - about a half mile downstream at this location here, and about a mile upstream is a location of - where we're also considering. This - this general area. We're looking for areas that would, depending on land - adjacent land use, the - uh - bottom channel, there's a - a - and we're looking on both sides of the River.

There are two basic types of construction - uh - that we're considering - uh - as far as intakes. Uh - one is a bank side intake and that would be as the name implied, all the facilities are on the bank. Uh - there's nothing in the River per se. Uh - and then there's also an in-River intake - uh - where - uh - out - the - the intake and the pumps would be located on a pier in the middle of the River with access by a bridge.

If you have some time afterwards, if you could look we have some examples here of both types of construction. Uh - in the - the in-River type is now currently under construction - uh - just upstream at the City's - uh - Sacramento River Water Treatment Plant.

As the - uh - uh - water continues to the - to the east - uh - there are - uh - the need to take the water from the - from the Sacramento River here - uh - across to the Folsom South Canal. In this intermediate area here, the City will locate a - uh - its water treatment plant, it will be a turnout for the City's - uh - component - I mean the County's component of the - of the Project. Uh - overall, this - this - the pipeline alignments here are some - uh - 19 miles, depending on - on alignments. The - uh - uh - the first portion to the - to the County turn - turnout would be - uh - approximately - uh - 7' in diameter and - um - will have a capacity of 185 - uh - million gallons per day.

The red alignment is the alignment that was - uh - uh - evaluated and presented in the - uh - final EIR issued in 2000 - December 2000. Uh - since that time we've identified some other - uh - alignments. All of them for the most part follow existing - uh - road - road right-of-ways. Uh - and at the - uh - you'll notice at the western end there are several alternatives there - uh - as that area is less developed in there, there's less roads - we have a little more flexibility of how - how we may align the Project.

Uh - after the City - uh - the County's - uh - uh - turnout, the pipeline would continue at a - a diameter of 5 ½' to the Folsom South Canal. Then would flow down - uh - the canal approximately 14 miles to the end of the canal and then at the end of the canal - uh - up in the

top - uh - left corner there - uh - there would be a - uh - another - uh - intake - uh - from the canal, a pumping plant that would pressurize the water and take the water - uh - to - uh - the Mokelume Aqueducts here, which is the - uh - main delivery - uh - system for Mokelume River water from the - East Bay MUDs Mokelume River water takes it on to approximately 90 miles to the East Bay.

Uh - the pipeline alignment in red is the preferred alignment presented in the earlier environmental documentation. It's approximately 17 miles long. It does - uh - travel somewhat on surface roads but also - uh - goes across some open - uh - country.

Uh - we have - are now considering also the yellow al - alternative which would go - un - in road - in roadways - uh - and that's one of our - uh - criteria - we're trying to look for alternatives that - that would use public - existing public right-of-way.

Also - uh - in this area would be located a - another pumping plant to pressurize the flow into the Mokelume Aqueducts as well as a treatment plant - uh - that would - uh - uh - pretreat the water before - uh - delivering it to our treatment plants here in the East Bay.

And we have - uh - two primary sites we're looking at alternatively. Uh - here at the junction of the new pipeline with the - uh - existing aqueduct and also here - uh - uh - just adjacent to - uh - East Bay MUDs existing Comanche Reservoir in an effort to use East Bay Mud - uh - property.

This - uh - table has been presented at earlier public meetings. It's - uh - nothing new here, but I just wanted to go over this just - uh - briefly. Some of the criteria we use in - uh - uh - evaluating the best al - alternatives, it's aligned for alignments. It's impossible to really come up with something that meets everything at all times, but these are some of the - uh - uh - preferences that we have - uh - to minimize to residential impacts - uh - minimize traffic impacts during construction - uh - route the pipeline along property lines where possible to - uh - to minimize - uh - uh - severance of parcels - uh - to route alignments along public right-of-ways where they exist. Uh - to - uh - route the pipeline on - uh - County or East Bay MUD property when - whenever that is feasible. Uh - to minimize the impacts to prime farmland and just overall to minimize environmental impacts of the Project.

As Maria said - uh - on mid - uh - February the Freeport Regional Water Authority was formed. Uh - the principle members of that are the Sacramento County Water Agency as well as the East Bay Municipal Utility District, City of Sacramento is an associate member - uh - has a seat on the Board and - uh - but not a vote. Uh - they had an - anticipated activities - uh - of the Authority. Uh - well, first there will be to - uh - certify the environmental documents for all of the - uh - Freeport Regional Water Project facilities, those owned - uh - jointly as well as those owned by individual member

agencies. And then to go on and - uh - finance, own, develop, construct and operate those - uh - jointly owned facilities. We're well aware that we're not the only fish in the sea in this area. There's a lot of - uh - planning activity going on in this area. This just happens to be the intake area. We've identified at least seven other major projects that are now in the planning stages and - uh - we're - part of this process is becoming a - aware of those and letting those projects know about - uh - this project and our - uh - we want to coordinate them, make sure that there's no conflicts, and where there are opportunities to - uh - reduce - uh - costs and impacts we want to take advantage of those.

Overall schedule here - this month whereas Maria said, we're having five - uh - public - uh - scoping meetings. This is the first, the other four will be in the Sacramento area. Then in the fall we'll be releasing the Draft - uh - Environmental documentation for public review and comment. And that - uh - process of environmental documentation is expected to be completed at the end of the year with the - uh - publishing of the Final - Final Impact - uh - uh - Report - uh - and also the major permitting we're trying to complete at that point.

Uh - approximately a year later, in spring of 2004, the design documents will be complete and the - we'll be able to award the construction contracts and start construction of the Project. We

expect that the Project - uh - will take approximately two and a half years to build and - uh - will be ready the first phase of operations - the first phase - phase will be completed in - uh - fall of 2006. That first phase would allow - uh - full deliveries to East Bay - uh - MUD and then approximately four years later the - uh - Sacramento County Water Authority will complete their - uh - turnout and - and water treatment plant and will be able to - uh - utilize the Project in 2010.

And - uh - with that I'd like to - uh - uh - bring - uh - Maria back up here. Has a few things to introduce before we take your comments.

Ms. Selise: Now, before we get started with your comments, I just wanted to point out I've got about three slides here that identify the issues that we've heard that have been addressed in these documents, we will - we will readdress in this new document - um - for the environment, water supply issues, water quality and in addition - uh - to construction - uh - concerns within the Sacramento and San Joaquin County area. Uh - so these are things that we've heard again through pre-scoping, so we will continue to address those in this document as well.

So I will turn it over to Janet Barbieri and we'll start our public comment process.

Ms. Barbieri: Um - most of you are probably familiar with the - uh - environmental review process and - and what - you know, are familiar with what

scoping is about. But for those of you who may not be, just a reminder that - um - scoping is an opportunity to hear from you all - from the public and from - from agencies - uh - your thoughts about the scope of the content of the EIR and EIS. And so - uh - to that end, we have a - a couple of ways to do that. You can, of course, make a comment here tonight in just a moment. We also have comment cards in the back of the room that you could - uh - fill out tonight and leave with us. You could take those back with you, fill them out and mail them in. They are designed to be self-mailers. Uh - we also have a computer set up over here if you felt like typing in your comment, you could - you could do that. Um - and I would encourage you if you have any questions that will help you in making - um - a more informed comment tonight, certainly ask them and we'll see what we can do to - to get those answered. If you have - if you have questions that are more in-depth, more detail that would take longer to explain - um - I would encourage you to wait until a little bit later in the meeting, after this portion we will break out into - um - a more informal open house setting again so that you could have some one-on-one inter - interaction with folks and really get into the details of the Project. But certainly, if you have any questions that would - um - you know, take a quick clarification, we'd hap - happy to help you out with that. I would also - um - like to - uh - let you know that this microphone that's set

up in the middle of the room is for you to make your comments. It's very important that you use that microphone because we are tape recording this so that we can have a - an actual taped record of all of your comments. Um - and in addition to that, I'll be taking notes over here on this board. So - um - with that, is there anyone who would like to start off with a question or comment? If I can have you use the microphone. Thank you.

Mr. Clark: It just - uh - do I need to identify myself? Yeah? Uh - Henry Clark - uh - West County Toxics Coalition. Uh - you mentioned the - uh - community of Freeport I believe had some environmental justice issues. Uh - what - what is the - um - social economic - uh - characteristics of that community and could you just tell me what were some of the - uh - environmental justice - uh - issues and concerns?

Ms. Barbieri: Maria, do you want to address that? You were at that meeting.

Ms. Selise: Their main concern was coming through a economically depressed neighborhood with the pipeline which will be underground. And so - uh - Councilwoman Bonnie Pennel is the Councilwoman for that area and she explained to the community - she was at the - both of the meetings that I attended - uh - that East Bay MUD originally wanted to take their water from the American River and how we were moved down to - just all the joint project on the Sacramento River which is why we're coming through that area of their

community at Freeport. So mainly they were - uh - concerned which is the - uh - if you'd look at an example of the projects that they had in their area. There's a lot of things have occurred, so they've been over the last ten years have been a lot of work the County and the City has done. So -

Mr. Clark: The other question is in regard to the - uh - it's the purpose of the - uh - Project - uh - per se. Uh - I think you - uh - made reference to the - uh - to the - uh - a - a statement that - uh - East Bay MUD would - uh - use the - uh - water for - uh - for drought - uh - considerations - uh - in case of a drought. Uh - now, I - I understand that the - uh - projected - uh - presently the - uh - projected goal for East Bay MUD for a drought consideration is I believe somewhere around - uh - 8 - uh - million - uh - gallons a day. That they're trying to reach a goal. So this project would give them a cap - capacity of - uh - a 100 million gallons a day. That seems - uh - you know, way beyond the - uh - capacity goal presently, so I'm just finding it - uh - hard pressed to understand how all that - uh - what would seem to me - uh - excess would be used for drought. Is there any consideration for - uh - uh - a new use or a - a - or are you holding to the argument that the Project is just for drought consideration?

Ms. Selise: Exactly and I would appreciate those comments cause that's exactly what we will address in the environmental document when

we present the purpose and need and evaluate alternatives to meet that need.

Mr. Snow: Thank you. Uh - my name is Jim Snow. I work for the Westlands Water District and represent them tonight. Our District covers an area about 600,000 acres in the San Joaquin Valley and has a contract with the Federal Government - uh - the Central Valley Project for about a million acre feet of - of mostly agricultural use water. Uh - since the early 90s the CVP - uh - purposes has kind of been changed to where more of their supplies and resources have been spent for environmental purposes - uh - which has included endangered species - uh - such as Winter Run and Delta Smelt, and operations under the Central Valley Project Improvement Act and new water quality standards in the Bay and Delta. And due to these changes in operations we've seen our average project allocations - uh - decline from about 90 percent on average - uh - to only about 50 percent today. And in fact, modeling studies indicate that in severe dry years that we can expect anywhere from zero to 30 percent of our contract amount. And I kind of bring all that up not to just, you know, complain to you about our problems but - uh - kind of give a little perspective on some of my comments here to follow. Uh - based on our analysis of the - of the East Bay MUD size diversion only, the 100 mgd - uh - Project - uh - there is gonna be significant water quantity and certainly a potential for water

quality impacts to say - State Water Project and Central Valley Project contractors. Instead of diverting water in wet years when impacts on our - on our users would be minimal, the Freeport Project as proposed will divert water and thus, cause impacts to us in dry years when our supplies are already severely reduced. These impacts can be as much as 100,000 acre feet for the - uh - for the East Bay MUD size diversion. And indications are that Westlands - uh - Water District would suffer about 60 percent of this loss. Uh - and since this reduction is predicted to occur in dry years when our CVP contract supply is already forecast to be very low - uh - this additional reduction - uh - represents a significant impact to our users. The size of the new project - uh - the new proposed project of 185 mgd or about 290 cfs could make these impacts twice as large. In addition, the water supply - in addition to the water supply impacts, the proposed project could also result in water quality impacts in the Delta or cause the State and Federal project operators to release more water from upstream storage to remain in compliance with the existing standards. Uh - the new diversion could also impact endangered fish species migrating past the intake which would cause the - uh - project operators to possibly reduce their pumping further - uh - to comply with the take levels in the Delta. And finally, we're not really opposed to a - to a wet year conjunctive use type of project, but the - the dry year

diversion project such as is - has been proposed so far - uh - needs to include measures to mitigate for impacts to existing users of Delta water supplies that are already stressed. And we would welcome the opportunity to be involved in the analysis and the operational studies that are upcoming and in order to only - to be informed - uh - but to also - uh - help formulate acceptable project operational constraints or mitigation measures that would fully protect our - uh - contract supplies. Thanks.

Ms. Barbieri: Thank you very much for those comments and for your participation. Other comments? Okay. All right. Thank you.

Mr. Tafe: My name is Daniel Tafe. I'm with the law firm of Wetherford & Tafe in San Francisco and I represent the Contra Costa Water District, and I'd like to make some general preliminary contract - comments this evening and at a later date we'll have some more specific and detailed comments. Um - the first thing I'd like to talk about is my understanding that - uh - this document, this EIS/EIR - uh - is intended to cure off of - uh - the existing supplemental water supply project - EIS/EIR and that's a concern to us because, as you know, we're now in litigation with East Bay MUD over the adequacy of that - uh - former EIR/EIS and we expect that - uh - there will be a hearing on the merits of that this July and probably a decision in August - uh - which frankly, we fully expect to prevail in. And to the extent that you tier off of that document - uh - I think you're largely

wasting your time here. This is going to be time - uh - not well spent. You're gonna have to start over again after a Court determines that that EIR is in fact inadequate and that's a matter of concern to us. It's a matter of concern not only procedurally, but substantively because the inadequacies in that former document of - are largely a failure to address - uh - what are supply impacts on other federal - uh - users of water and water quality impacts - uh - particularly the water quality impacts that will be experienced by the Contra Costa Water District at the point of which they take water out of the Delta and those impacts have never been fully addressed. And we're concerned that tiering off of that inadequate - uh - EIR/EIS - uh - will just aggregate - aggravate further the - the failure to address all of those impacts.

We're - we're also concerned that you can't tier off of a project DIR - uh - for a project such as this. In fact, under California Law you can tier off a program EIR only or a policy EIR. Uh - your former EIR is a - is a project DIR on actually a smaller project than the one that you're now proposing and it makes no sense analytically - uh - to try to tier off a small project DIR to a big project DIR - that just doesn't work under the California Environmental Quality Act and you should rethink that. Uh - we recommend that you do that.

With respect to - uh - project alternatives and you were inviting - um - comments on project alternatives. We have some very great

concerns there. Um - it's interesting that in 1997 in the draft EIR/EIS on the supplemental water supply project - uh - East Bay MUD - uh - rejected Freeport alternative as infeasible and not meeting East Bay MUDs project objections. Uh - in particular, it was stated in the - uh - Chapter 5 of Volume 2 of that Draft - uh - EIS/EIR - uh - that the Freeport alternative would not meet objectives of water quality, it would be too expensive and that it would not meet the criteria for preservation of biological and environmental resources - uh - on the Sacramento River and in the Delta - uh - naming specifically - uh - problems for the habitat for the Delta Smelt and the Winter Run Chinook Salmon. Uh - none of those potential impacts - uh - has yet been addressed in any document - uh - considered by East Bay MUD and Contra Costa Water District is very concerned that - um - by tiering off of that document that didn't even consider - uh - those impacts - uh - with respect to a project that it had initially had rejected - uh - that has continued to fail to consider - uh - those impacts. Uh - in contrast to that it's clear to us that there are a myriad of East Bay MUD documents that identify - uh - the expansion of - uh - facilities on the Mokelume River as the preferred alternative - uh - to meet most, if not all, of East Bay MUDs - uh - objectives. Now, in particular, the expansion of Pardee (phonetic) Reservoir - uh - and I'm concerned here that as I listen to this presentation this evening -

um - that you're not planning to look at water source alternatives. When you spoke of alternatives in the presentation this evening, you're talking about whether you're gonna put the pipeline at this location or that location. Those are not the kinds of alternatives that we think are - are required of you to - to review in this process. You have to look at other alternatives of water supply, which has never done adequately. And we're confident that again, that the Court will agree with us with respect to that and require East Bay MUD to go back to the drawing board. Um - it - in light of all that it's just very curious to us that - that you're pushing forward with this project now at this time - uh - with the problem of a - the Court decision looming in August or late July that's gonna have a tremendous impact on how you're able to proceed. And those are all the comments I have this evening. Thank you.

Ms. Barbieri: Thank you very much. Appreciate it. Anyone else? Yes.

Mr. Hazencamp: Thank you. My name is Bill Hazencamp and I represent Metropolitan Water District of Southern California. You may have heard of us, we're a small district down south. Uh - we serve - uh - imported water supply to 17 million people in coastal southern California which is about half of the State's population. We're a water wholesaler and we deliver about two and a half million acre feet a year to the region with a total demand of about 4 million acre feet. About half of our imported supply comes from the Colorado

River and the other half from the Delta through the State Water Project, both of which have had reduced reliability in recent years. Metropolitan has taken a number of steps to provide reliability in the face of dwindling - dwindling supplies and dry years. Recently we finished construction of Diamond Valley Lake, an 800,000 acre foot reservoir which captures water in wet years and is used in dry year. We have a number of ground water storage programs in the San Joaquin Valley where we bank wet year water for use in dry years - uh - as well as programs in the Mojave Desert and in Arizona. We have a number of water transfer programs in place such as the Coachella Canal Lining Project where Metropolitan has access to the conserved water and other transfers with Imperial Irrigation District and a land fallowing program with Palo Verde Irrigation District. We also have an aggressive conservation and recycling program with 200,000 acre feet a year of permitted water recycling - um - uh - programs being built right now. And of course we're a big supporter of the Cal Fed Process providing money and staff for the programs. And Metropolitan's strategy is to reduce its dependence on SWP supplies during dry years when a risk to the Bay Delta eco system are greatest. But this is not about Metropolitan, it's about the project here today. And our concern is that the proposed regional project to divert water out of the Delta - uh - would occur during the driest years. We feel that the project

outcome has been pre-judged to secure a dry year diversion eliminating other wet year banking alternatives. We realize that in the past some wet year programs have been screened out - uh - but this is a new project and this is a new day and - and we think it's - uh - still viable to look at wet year projects. We think that if you don't look at wet year projects then the environmental impacts would be inadequately analyzed because they would not be compared with the comparable wet year alternative. Metropolitan believes East Bay MUD should seriously consider wet year banking programs or water transfer in lieu of increased Delta diversions during the driest years when the environmental impacts are the highest. Of course, we do not fault East Bay MUD for seeking high quality water sources or for seeking to improve it's water supply reliability, but we believe those goals can be accomplished without negatively impacting the environment or other Delta water users. We likely feel that - or we think the project would likely be more successful if - uh - that approach was taken. That's all. Thank you.

Ms. Barbieri: Thank you. Would anyone else like to - okay.

Mr. Rubin: Good - good evening. My name is John Rubin. I'm with the law firm of Duane Morris and I'm here representing Santa Clara Valley Water District. I have - um - a couple of questions before I provide you with my comments. Um - the first question I have deals with some information that was handed out this evening. Um - and it

deals with the issues identified to date. Um - there was an indication earlier that the environmental issues that have been identified will be analyzed in the proposed - um - EIR/EIS. Um - I was wondering if any of the other identified issues will also be id - uh - addressed in that document, specifically the identified water supply and water quality issues. Is that yes?

Female: (unclear) be.

Mr. Rubin: And that includes impacts to state and federal contractors?

Ms. Barbieri: Yes.

Mr. Rubin: The - the other question I have deals with the proposed - the modeling that will be - um - used to form the basis of analysis in the EIR/EIS. Um - you spoke of - um - obtaining - um - public participation and involvement. I was wondering if you will include the public in - um - allowing it to review the modeling - um - that you will be performing prior to the release of the Draft EIR/EIS?

Ms. Barbieri: Yes, we will.

Mr. Rubin: Is there a set procedure to allow for those - for that participation?

Ms. Barbieri: (inaudible)

Mr. Rubin: Great. We appreciate that. Um - to - to my - um - comments - again, I am here on behalf of Santa Clara. Santa Clara will approach it's review and comment of the Freeport Regional Water Project consistent with the following principles which Santa Clara follows for all of it's activities. Santa Clara Valley Water District

approach to all proposed project is one of cooperation and interest based problem solving. Santa Clara works with any California water interest to resolve differences and identify opportunities for mutual gain. Santa Clara proactively negotiates solutions that protects Santa Clara's interests and allows the parties to move forward with the proposed development. If issues cannot be addressed in negotiated agreements, Santa Clara accepts only reasonable business risks in order to enable the collective development of water projects in California. Santa Clara encourages the coordinated development of all proposed projects with the Cal Fed program. Santa Clara would like the Freeport Regional Water Authority to approach the continued development of the Freeport Regional Project along the lines of these principles. Santa under - Santa Clara understands the water supply needs of the - of the members of the Freeport Regional Water Authority. Santa Clara recommends that the Freeport Regional Water Authority coordinate with and incorporate its needs into the Cal Fed process and particularly the Bay Area blending and exchange program or project. This approach should be particularly attractive given the fact that consistent with the approach of the Freeport Regional Water Authority members projects identified as part of the Bay Area blending and exchange project are expected to be beneficial to the environmental water account. Specific to the

Freeport Regional Water Project, Santa Clara is very concerned with its potential adverse impacts on water supply and water quality. Santa Clara is also concerned that the Freeport Regional Water Project may result in an inequitable shifting of costs to other CVP contractors. Accordingly, Santa Clara believes it is important that the Freeport Regional Water Authority fully analyze all effects of the Freeport Regional Water Project including impacts to the Sacramento San Joaquin Delta and to Santa Clara and other CVP contractors. It is important that the Freeport Regional Water Authority develop a standard for (Tape Runs Out)

(Off The Record)

Tape 1 - Side B

Mr. Rubin: - the same or consistent standard to be used further for any impacts identified as significant the Freeport Regional Water Authority should develop operational attributes that will reduce to the level of insignificant those impacts. Santa Clara proposes that to achieve these goals the Freeport Regional Water Authority work with Santa Clara and other Delta water users. Santa Clara believes such an approach will minimize adverse and maximize beneficial impacts of the project. Similar approaches have been followed by East Bay MUD as it has done with the County of Sacramento. Thank you very much.

Ms. Barbieri: Thank you. Does anyone else have a comment they'd like to make? Okay.

Mr. Tafe: Can - can we get a copy of the tape that you're doing tonight?

Ms. Barbieri: Um - yeah. I think we're gonna have them transcribed so maybe not the actual tape but we do have -

Mr. Tafe: Oh, it will be transcribed?

Ms. Barbieri: Yeah.

Mr. Tafe: And we can get a copy done of the transcription?

Ms. Barbieri: Yeah.

Mr. Tafe: Great.

Ms. Barbieri: Uh - any other comments? Other quick questions? Oh, one other.

Mr. Rubin: Another thought that came to mind is - um - prior commenters have talked about their belief that - um - the Authority will tier off of existing environmental documents. I was wondering if you might speak to that and what the intent of the Authority is with regard to those environmental - prior environmental documents?

Voice: (inaudible)

Ms. Selise: This is exactly the feedback we're looking for so we can use that to make our decision on how to scope this project and the environmental document.

Mr. Rubin: This is John Ruben again for Santa Clara. Could I take from that that there has been no decision whether the Authority will tier off existing documents?

Ms. Selise: It's exactly why we're here to collect that information to make those decisions.

Ms. Barbieri: Are there any comments? Okay. With that then we'll - um - break off into the open house and if you have other - um - questions or discussion you'd like to have with any of the - um - representatives here. Please feel free. Thank you all.

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TRANSCRIPT OF PUBLIC HEARING

EAST BAY MUNICIPAL PUBLIC UTILITY DISTRICT

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In the matter of:	Freeport Project	**Item No.:**	
		Date:	April 11, 2002
		Time:	
		Place:	
Taken by:	Cassette		

Prepared for
Jones & Stokes

Transcribed by

Foothill Secretarial Service
916/443-7400 – Telephone
916/443-7421 – Facsimile

*****

- PUBLIC MEETING -

Female: Some of you may be familiar with the scoping process, but if your not I'm going to do a little bit of an explanation. Um - again this if for the Freeport Regional Water Project, and you probably in walking around the room and looking at some of the exhibits, you probably saw some other projects that are here and I just wanted to let you know what those projects are. Um - we have Tim Flemming from Mark Thomas and Associates - um - representing the Consumes River Boulevard Extension and - um - I-5 Interchange Project and that's some information that's right here. Um - we have Don Smith from Regional Transit - um - here with information about the South Line Light Rail Extension Phase Two Project and that's information that's back in the - uh - alcove over here. Then we also have - um - folks from the Lower Northwest Interceptor Program - uh - John Butts and Patty Rensdale and their - they've got some information in the room over here, so those folks are here because we know that those are other projects that are happening in the area and we're trying to be coordinated with those projects and then with us so that we all stay on the same page - um - in this community. So for scoping purposes - um - we are starting the environmental review process, we're working on environmental impact report and environmental impact statement, and the purpose of tonight really is to give you some information about the project, but - but really it's about hearing from you, it's about getting your comments about the scope and content of that environmental document, what types of things - um - issues of concern about the

impacts - uh - to traffic to - um - to your homes, to farms, to businesses, to - uh - water supply - um - habitat, fisheries etcetera that you have concerns about that you would like to see addressed in the environmental document. So before we get there though we have a quick presentation - um - about the project, about the process, and also about the - the project itself - um - that will take maybe about 10 -10 minutes or so, and then we'll do the - uh - comments from you all. So I'd like to introduce Ms. Soleece: from the East Bay Municipal Utility District who will start things off.

(Off the Record - Mechanical Problem)

Ms. Soleece: All right. Sounds Good. I'm going to first just talk about some history and background and then the Environmental Review Process and how the public participation - uh - process fits into that. And then - um - after that, Tad Burcavaugh (phonetic) hear from the Sacramento County Water Agency to talk about the project description and the purpose and then a little bit about our new joint powers authority, it's called the Freeport Regional Water Authority. So how did we get here? In 1970, East Bay M.U.D. - uh - East Bay Municipal Utility District where our main office is in Oakland and we serve half of Contra Costa County and half of Alameda County, we signed a contract with the Bureau of Reclamation for 150,000 acre feet off of the American River and likewise the Sacramento County Water Agency signed a contract with the Bureau in 1998. In 1996, we started a - uh - environmental documentation process - uh - to take our water from the American River and there were alternatives for East Bay M.U.D. only. In 97

the City and County joined us - uh - in the Environmental Review Process and the Bureau, so we did a joint - uh - California and Federal environmental document included drug project alternatives on the American River. In 2000, we published a revised Environmental Document that included alternatives from the Sacramento River and within the Delta. And in 2001, we signed a Memorandum of Understanding with the City and County of Sacramento and the Bureau of Reclamation to start studying the feasibility of a project here within the vicinity of Freeport. So in 2002 - February, we signed the Joint Powers Agreement. So there's a new public agency that's been developed called Freeport Regional Water Authority, and two board members from East Bay M.U.D., and two board members from the County of Sacramento, and then the City of Sacramento is an associate member of the Joint Powers Authority, so they also sit on the Board.

So environmental - uh - process why are we doing this, what is it for? It's to study the alternatives that - um - we've already done some feasibility studies to come up with and also the - any additional alternatives that we hear throughout the scoping process and any potential impact with those alternatives. So earlier I talked about the California and the Federal Environmental Process, so I'll use an acronym SEQUA and NEPA later. These are the two laws that facilitate the whole public disclosure process - um - and that's what happens when we disclose what the impacts are, the public gives us their comments, we respond to their comments, and we create this document called the Environmental Impact Report and

that's the - the SEQUA side and It's a duel Environmental Impact Statement which is a Federal side. So the Bureau of Reclamation is here, Rob Schroeder, he's from the Folsom office well - there they lead Federal agency and the Freeport Regional Water Authority is the lead SEQUA agency - so they lead State agency. So the purpose of scoping again I want to inform you about what the project is that we've scoped so far - um - identify who the interested parties are - uh - identify any significant issues of potential alternatives. We haven't come up with either, and also to help us focus the environmental document - so scope this document.

What is this document? This is an example of the chapters, for instance - um - Mr. Cox - I think he left. Is he where? Okay, he's here. He lives in Yolo County right across the river. And - uh - he came here tonight, we spoke on front of some of the poster boards, and he said, you know how loud is that intake going to be? I live right across the river, I - is it going to affect my property values? I mean I want answers to these questions. And so you see there's - uh - a chapter here on noise. That's exactly what we'll do. Any of the facilities on the project we will disclose how much noise - potential noise there is and if that is a significant impact to the existing environment. So that's just an example of how these chapters are structured, same thing with - um - transportation and traffic circulation. If we're building the pipeline down a certain road and that's the way you go to work everyday, how are we going to impact the existing flow of traffic. So we'll analyze that and present

that - the draft EIR, there'll be a draft document published, you get to review that and then comment on that, and we'll publish another final document that responds - responds to your comments in writing. So this is the first of our - uh - public scoping meetings. We have five this month. In addition we've been doing about - so far that we've had about 40 - uh - what I call pre-scoping meetings where we've - uh - met with a lot of interested groups in this area trying to inform them about the project before we started the formal scoping process. Uh - a lot of you here were mailed the fact sheet. Um - I see somebody here looking at - maybe you can just hold it up, and they can see what that looks like. If some of you didn't get it there's some when you came in - to sign in, and we can also add you to the mailing list, so you'll get a direct mail of that in the future if you didn't - uh - get one that informed you about the meeting tonight. And those will also be updated, whenever there's some significant progress on a project, we will do a revised fact sheet and send it out to the public, and it will either just contain information or information about additional meetings. And we have a website for our project - freeportproject.org, where you can - um - access information about project and also an email address. And then we're available by phone - uh - City - uh - County Bureau of Reclamation in the East Bay M.U.D. representative are listed in the fact sheet I talked about earlier with our direct phone lines, so give us a call if you have any questions after today.

So - uh - this is the schedule of the five meetings, we have three more on the 15th, it's at the Panell Community Center 18th and

Harold at the Harold Fire Station and then the 25th at Wildhawk. This is just an example of when your comments are incorporated in - within the process, so you saw when you came in we had a comment card you can fill out. We also have the laptops set up if you want you can just type in your comment here today, or you can email it or send it in after the meeting. So we're - so I'm not standing in everybody's way here. We're here - Spring of 2002, and then we're going to get to the end of these purple boxes, and by this time is when we're hoping to - uh - identify a preferred alternative, so the comments that you give us to help us scope the document will also not only help us scope the document but also provide feedback to - to help determine the selection of the preferred alternative. After that, once we select a preferred alternative hire on an engineering consultant, this public process here in this long purple box is - would be more one-on-one - uh - comments with the public. For instance, if you own a nursing home on Calvine and that's where we decided to take our pipeline and your worried about noise and the hours of construction - uh - coming when we're coming by your property, then we work with you - we would work with you directly on that issue. So this - these are more construction related impacts when the project starts getting built that's where your - your - the public process is important. And this is helping scope the environmental document and also helping evaluate and give comments on the preferred alternative that we will ultimately select. Um - there is a schedule in your facts sheet too you can refer back through, and now on to introduce Tad

Burcavaugh from the County of Sacramento, and he'll go over the project description and the purpose, thank you.

Mr. Burcavaugh: Good evening, thank you for coming - uh - we appreciate any kind of input we can get from the public on this, and I'd like to say preliminarily that - uh - what we are showing you tonight is our first cut at it, and - uh - he have - we're putting up what we think would work for us, but this is with minimal outside interaction with others - and that's the purpose of this meeting tonight. So what I'd like to do is go through the project and describe what it is at this point. Um - it's - it's a regional project in the since that we're bringing supplies to two different areas in - in Northern California and we're joining together two different entities through this Freeport Regional Water Authority. Uh - East Bay M.U.D. would - uh - divert up to 100 MGD through an intake that would occur out here somewhere on the Sacramento River. Uh - the Sacramento County Water Agency - the other member of this authority would divert up to 85 MGD. The - uh - East Bay M.U.D. supply is for - um - supplemental water in drought years. Right now they're very short on - uh - water in the driest years and have to do heavy cut-backs. Um - the Sacramento County Water Agency water is to serve the projected growth that's - uh - in the general plan at this point in the central county. Uh - the project course is - is - uh - as Maria mentioned is afforded by the city of Sacramento as an associate member to - uh - our JPA and the Bureau of Reclamation is - uh - uh - cooperating the agency too. We're looking at four different - um - intake locations right now that would range from about one half mile upstream of the Freeport

Bridge to about two miles upstream of the Freeport Bridge on both sides of the river. Uh - uh - and I'll get into the details of that a little bit more here. Uh - there would be pumping facilities at the intake, there would be - uh - a pipeline running east - um - at this point some general area - let's say between Gerber and Calvine Road - that's what we're thinking as preliminary with a turnout to Sacramento County - uh - Water Treatment Plan, and then continuing on over to - uh - the Folsom South Canal. Uh - let's go back here. From the southern - the Folsom South canal then there would be a pipeline extending - uh - down to the McKinley Aqueduct, which is part of the Freeport - uh - East Bay M.U.D. facilities. The purposes I said before - um - would be to divert water to aid Sacramento County Water Agency to serve their customers in a manner where we would use surface water conjunctively with ground water to utilize the two different sources in an efficient as possible manner. Um - it would reduce - uh - impacts to East Bay M.U.D. customers instead of - uh - East Bay M.U.D having to cut back as much - or over 50 percent. Um - they may cut back like 25 percent during the drought periods. Um - it reduces costs to both of the participating partners because we're constructing joint facilities, and it also will minimize environmental impacts through the constructional - uh - joint facilities, and it provides an opportunity for additional partners in the future who could utilize - uh - excess capacity. The reason we would have excess capacity is that - uh - we would build the - the pipeline to the full capacity that we would need ultimately, but the Sacramento

County Water Agency for instance could take as long as 50 years to need that full pipeline capacity. Um - and the same with East Bay M.U.D. that - the dry years only occur about 30 percent of the time, so in the other 70 percent of the dry - of the 70 percent of the years where - when - their - uh - we have normal and wet years, there would be capacity in that pipeline available for other partners. For the potential intake locations, preliminarily we're considering four locations. The most upstream location is up here on the south side of the river, and attend a pipeline would have to feed water back over to the east side of the river. This - this is a tentative - uh - location. I've already got some feedback from Mr. Serpa on this location and the problems that he is concerned about with that. Uh - another - the next downstream one would be at the City of Sacramento site where they have the - uh - the large water tank that's up here, but right now that's set up for utility types of services. This is a pretty attractive site. Then we're also looking at two other possibilities down here both on the westside and eastside of the river as potentials. As far as pipeline alignments going east from the intakes, we're considering these alignment - alignments right now. We could do some combination of either this one, or this one, or this one tied with either of these two here - so there's different segments that we could link together. Um - generally speaking - uh - right now it appears that an alignment like this could be the most attractive one for us. In the - uh - at the south extension of Folsom South Canal for East Bay M.U.D. they're looking at these two alternatives, these were - uh - assessed

extensively in a previous environmental document, which we will be referencing in this environmental document also. Uh pi - pipeline routing criteria we're using - we're trying to minimize - uh - residential impacts - um - this - so - you now where we might run a pipeline along the frontage of - of some home - uh - that's going to cause some problems, we want to minimize those problems. We want to minimize - uh- traffic impacts. We're predominately looking at pipeline alignments that are in roadway - road - road right-of-ways or existing easements where we can do that, but there's going to be traffic impacts. Uh - we want to minimize parcel severance where we can. We want to put - uh - the road realignments as I said - uh - in existing public right - rights-of-away - um - and in County or East Bay M.U.D. property where - where it's possible. We'd like to minimize impacts to prime farmland and - and - uh - do that by minimizing severance - uh - also minimize the environmental impacts. For the Freeport Regional Water Authority, the membership is - is as Maria said earlier is - are Sacramento County Water Agency and East Bay M.U.D. - uh - Utility District are the primary members. The City of Sacramento acts as an associate member and will be a key participant - um - in assessing the intake and as esthetics values if - if - if it's - uh - intake located adjacent to the city or city neighborhoods and provide us with the possibility of using their - their - uh - property. The anticipate activities of the authority are essentially everything that the public water purveyor would have anyway, so we - we've taken our authority from Sacramento County Water Agency and authority

from the East Bay M.U.D. Utility District and combined it into the Freeport Water - Regional Water Authority. And the activities we anticipate that the authority will do will of course certify the environmental documents, do the financing, own or acquire - uh - properties - um - do the designing, the - the constructing, and operating - uh - the joint facilities. There are many other projects in this area primarily they seem to all come together in - about down here where the Consumnes River Boulevard extension would occur. The - um - Light Rail extension cou - could occur down around this way. That's the shallow line here. Uh - we also have a - a levy improvement project, and then there's the northwest - uh - interceptor sewer line coming down this way. So there's a lot of things that are occurring at the same time, and we're trying to work out the - the conflicts that could occur and the - um - impacts that - that could be worsened by having all these projects in the same area. Our project schedule is pretty ambitious. Um - we're in the - the scoping meetings - part of the process right now. Uh - by the Fall - by this Fall we hope to release the draft EIS-ERR and - uh - by the following Winter - uh - hope to complete environmental documentation. Uh - and then in Spring of 2004, we would like to complete the engineering design and award of construction contracts, and then by the fall of 2006, complete the construction and - uh - start up the - the primary facilities, and then following that Sacramento County Water Agency would - would - uh - construct their treatment plan - um - at a later date. It's - uh - it's not a joint - uh - facility itself. So what I'd like to do now is - uh - conclude my

part and turn it back over to Maria, she'll go through a couple of - uh - slides on certain concerns - uh - we've had in the past and then open it up for questions.

Ms. Soleece: Thanks Tad. Um - I just wanted to show you a list. I have about three overheads. I won't go over everything, but - uh - since we started this process in 1996 with the Environmental Impact Report we have had - heard a lot of issues already, so we are going to make sure that we readdress those issues and then if there's any additional ones that we identify, we're going to add those as well. And - uh - you see Mr. Cox, he actually asks - had another good comment tonight. He was talking about the - um - effects on river flows and quality, so there will - that will be addressed and there will be a chapter on that on this environmental document as well. He takes water on - uh - on the - uh - side of the river right across from where we are now. It's where - Yolo County is where his property is, so he was asking - he said I have riparian rights. I take water out of that river to houses - um - project going to impact that it's a lot of water 185 MGDs, so that will be addressed. Uh - more water supply and water quality - um - issues that have been identified so far and not just by property owners adjacent to - for instance the Folsom South Canal where we are going to be putting - um - Sacramento river water into the canal which exists currently and it contains Sacra - um - American river water, so SMUD has some issues there and we're going to be addressing that for example. Um - construction - uh - impacts and issues related to that you know the future maintenance needs - uh - for the pipeline if we

have to go in there and dig it up, what is that gonna to do to our - uh - road way, if it's under our road how much right-of-way do you need to do that. Those are all things that will be addressed. So in addition to what you say tonight I just wanted to give you a flavor of some of the things - um - that we are addressing and - um - I encourage your comments tonight. That's exactly why we're here and so again I just want to thank you for coming, and - uh - if there's anyone here from the Freeport - uh - Development - Freeport Improvement Association, we'd like to come and give a focus presentation to your group as well, so - um - if you could just let us know, and we could get that scheduled. I'm going to turn it back over to Janet now so we can start the public comment - uh - section of the meeting. Thank you.

Ms. Barberi: Thanks, Maria. Okay, again - um - this part of the meeting is for you all to make some comments on the project - um - again about the scope and content of the - uh - EIR and EIS. Um - it's not so much about the merits of the project, you know I don't like the project cause I'm just generally opposed to these kinds of things. It's more about you the types of things you'd like to see in the EIR EIS - uh - the sp - maybe specific concerns you have - um - and that kind of thing. And I - I did want to re - um - let you know to that if you come up and make a comment, please do use this microphone here, because we're tape-recording it so that we can get an accurate record of your comments. We will also be - um - taking notes on this flip chart. Um - I also wanted to let you know that if you don't feel like making - uh - uh - comment in public here,

you could certainly write it on the comment card that we've provided, you could leave those comment cards here with us tonight, or you can bring it home, write out your comment and mail it later - it is self-addressed. Um - and you could always send in a letter if you wanted to too not using that comment card. So - um - with that like to go ahead and open it to the floor, and if you'd like to come up, just raise your hand and come up and make a comment. Who'd like to start? Okay, come on up.

Mr. Mulderick: I'm Kevin - can you hear that? Okay. I'm Kevin Mulderick, I'm the President of Zebra Neighborhood Association which is basically The Water Tower North. I have two questions. One, which was not addressed that is the proposal of the original water waste treatment plant pipeline which is still under consideration as to it's route which will come down into the same area. That issue was never addressed. The other question I have is why the Meadowview corridor is preferred over the Consumnes corridor? And - uh - whether - uh - Delta Shores Development, which is now in the city planning stages has been considered for easement for a corridor which could conceivably handle the Consumnes corridor pipeline.

Mr. Burcavaugh: To - to answer your question about the northwest interceptor, we - we - uh - did go to the northwest interceptor scoping meeting to comment on their location and our concern that there would be conflicts but also that our project, if there were ways or opportunities to minimize impacts that we could combine with them, so that one reason we - we chose that one pipeline - uh - location to analyze that's for the utmost upstream intake diversion. Now our

attempt is to minimize - um - impacts. Mr. Serpa has pointed out for instance that there are certain concerns that - that we may actually make it worse, and so we're taking that into consideration. We've already taken his comment, we've got that. Um - as far as Meadowview alignment that's only - um - one of four different alignments, and I tried to make it clear that, that was not necessarily a alignment. And so and certainly we look at - um - we have three other alignments on the - on the sheet that you have there. One is - uh - through the power line easements south of the Meadowview area, one is the Consumnes Boulevard extension, one is on the south margin of the Delta Shores Project, so those - those are four alternatives that we're considering, and we want to deliberately compare the effects of each of those alternatives and go with those that minimize effects. Now I don't - I - did you have some other questions or - or is there more I can say about -

Male: (Inaudible)

Mr. Burcavaugh: For the northwest interceptor? The Collector?

Male: (Inaudible)

Mr. Burcavaugh: Um - not that I know of. I think they had their scoping meeting about three or four months ago.

Male: (Inaudible)

Mr. Burcavaugh: Right - right, and then we are - we're - we're only beginning our process.

Male: (Unclear)

Mr. Burcavaugh: Right.

Ms. Soleece: And they are here if you'd like to talk to them after the meeting.

Male: Oh.

Ms. Soleece: The representatives.

Male: What's in my brain that you might consider (unclear)

Mr. Burcavaugh: Yes.

Ms. Soleece: Exactly.

Male: (inaudible)

Mr. Burcavaugh: Yes, and that's - that's one of the things we're considering. There's you know other commenters have pointed out that, that could be a problem with that. And we don't see that alignment as necessarily or that intake and the pipeline associated with that intake is necessarily the preferred alternative, but we want to deliberately compare these things to fair among -

Ms. Soleece: Thank, Tad.

Mr. Burcavaugh: - uh - the different alternatives.

Ms. Soleece: Who would like to come up next? Come on up.

Mr. Robinson: - Gene Robinson, I live at 9980 Calvine, which is - oh - a little bit east of Bradshaw, and I have several questions. This is my first time to see the project, so I'm not very knowledgeable about what your doing other than you running these pipelines. You look like you have two alternatives, one to transport it down Gerber and the other is to transport it down Calvine. Uh - the Calvine Road - I don't know how well you're coordinated with County Public Works, because Calvine Road has been improved all along the way and it's due in about a year I think or two to come down in front of my house and be improved some more. This is an awful lot of tax payers money that been expended on doing that road. I don't

recommend you come along at this point of view - point of time and put a pipeline down the middle. So, of course, I'm a little bit biased. I live on Calvine, I recommend you put the pipe up on Gerber. Uh - I do have a question, how big of a main are you dropping in there about a 84 inch or - ?

Ms. Soleece: (inaudible)

Mr. Robinson: Okay. Uh - another question comes up that Calvine happens to be the borderline right at the moment between the County of Sac., City of Elk Grove, I haven't seen or heard of anyone on the City staff being here. I don't know if they're represented in your meetings or not, but - uh - I would suggest you get coordinated with the City of Elk Grove - uh - all their departments, really, because if you get involved in the areas with - uh - it will upset the people whether your going to be dealing with the politics of things, and then you got the traffic problems that effect the police, and the public works, and so on. And Elk Grove as a community as houses coming up like mushrooms all over the place, so I would suggest you get your easements finalized as sooner rather than later. Uh - that's all I can think of at the moment. I might come back if I remember another one.

Ms. Soleece: You sure could. That's great. Thank you. Who's next?

Mr. Kirkland: I guess I am.

Ms. Soleece: Okay, great. Thanks.

Mr. Kirkland: What I'm going to do is kind of face everybody, cause - uh - a lot of my neighbors know me already, but my name is Bob Kirkland, Jr. Uh - introduction, I apologize for the dirty clothes. I just got off

work.

Ms. Soleece: Its okay.

Mr. Kirkland: I work for myself, I'm a farmer - 5th generation right here in Freeport have a BS Degree in Environmental Resources from Sac. State. My voice is projecting enough.

Ms. Soleece: Yeah.

Mr. Kirkland: I do a lot of public speaking.

Ms. Soleece: I want to get it on the tape, that's all.

Mr. Kirkland: Okay. Several questions come to mind on this project, okay, both historical and water wise. Uh - many of us in here are farmers. We have riparian water rights to the Sacramento River, which are the oldest water rights in existence, they go to Eng - English law, so they are the strongest in the State. Okay, the big question I have here right now is since these water rights that we're talking about are our ability to draw water go back to 78 -98, where's the extra water coming from right now? I do not see any improved systems here for developing more reservoir space. We all experienced a drought in our occupations where we were actually at one point questioning would we be able to use our riparian water rights, because you folks need it for human consumption. Okay, where's the new water coming from? I don't see it. It's the same water, but it's going to be discharged - be taken in at a different location as all brand new water that your removing. Another question I have is - this is great East Bay M.U.D., Sacto County, City of Sacramento, most of us in here are residents of Yolo County. Why aren't we represented? Especially if your prime location is not going to be

accepted. If you would have done your homework, you would have found out that's a major Mewauk Indian Village Cite burial ground right there. You know if you don't look out, you're going to start cowboys and Indians all over again when they want to put their casino in there. Okay, so then where you gonna go next? I talked to one gentleman that said, well right closer to the Freeport Bridge here - but that's a question about water - water quality. Many of us experienced these same meetings with the big regional plant. We were told 20 years ago the water coming out of there will be good enough to drink, especially in 20 years. Okay, why don't you folks reroute that 7 foot pipe over to Folsom South Canal? We all know that answer to that, don't we? But back in those days when they said they had to be dumped before - below the Freeport Bridge the question was why is it good below the Freeport Bridge and not above? So now the question becomes if you start taking 185 main gallons of water per day out of the Sacramento River above the Freeport Bridge, and we do have reverse flows in the Sacramento River which we had to inform the Sacramento Regional - uh - Waste Water Plant, they didn't believe us, come talk to the local people we have a lot of history. Okay, now what's going to happen? You start taking the water, there's no more water coming down the Freeport area - below the Freeport Bridge and right straight in front, it's going to become a cesspool. Okay, not salt water; salt water won't get up this high, but what it will do is just like all the - the - uh - Federal State Quality Acts which we're going through, which is all whitewash, let's face the facts, address that

there'll be no environmental impact on the Sacramento River. To this - and before this sewage out called pipe - I talk fast, I'm sorry.

Ms. Soleece: That's okay. You're okay.

Mr. Kirkland: Before the pipeline went in, a lot of us did a lot of fishing in the Sacramento River. There was no major fishing in front of the (unclear) line. Sacramento shag did not exist there, but because of that vale of water - warm water coming up all the fish are stopping there right now. The salmon are not coming up the river like they used to. Okay, our planners did not see that 20 - 25 years ago. It's effected the river, okay. The big question I see here is not some much construction problems. Everybody can live with that. You're looking at lifestyles down here. Okay. You're not just effecting transient people that have moved in the state today - okay - or you know here today gone tomorrow, your dealing with generations. When I say I'm 5th generation, I'm not alone of the people especially from this side of the river. Okay. We have to a drain. There's no question about it, but I think to have a project like this forced down on people's throats, and that's where it's headed. Let's face the facts. We all have enough experience in government, don't we folks. Okay. This is just a step that we go through. Okay. I would suggest what you need to do is look at all the alternatives. We know your down here because you went to Court over the American River, they didn't want you in there. Okay. I'm not saying we don't want you down here, but we will have a lot of issues that we have to face, and I'd like - let me look at my notes here. I know I'm taking a long time, but - uh -

Ms. Soleece: You're okay.

Mr. Kirkland: Okay. We hit the - uh - representation, water rights, water quality, is a ma - major issue, and where is the water coming from? Okay, those are the main issues on that. Um - and so then how's it going to effect us that are here, you folks are gone - here today - the projects over you'll be gone, but we're still here with the project. Okay. I want to finish on one little thing, and this is my own little pet peeve with all you folks, cause I see a lot of people in here that work for government, correct? Okay. Can I see a show of hands of everyone that works for Government here? Raise your hands everybody that works for Government. Okay. When you gentlemen become - became public officials one of the things that you had to do was swear on The Oath of the Allegiance of the Constitution of United States, correct? To defend against all enemies foreign and domestic, correct? And everybody here probably - yeah, public officials have to, yes they do. The Department of Water Resources guy confirmed it. I was a softball coach down at Delta High School, and even for a softball coach I had to do it , so look in your Civil Code, and you also have to -

Male: You don't have to.

Mr. Kirkland: Well you have to it's the law.

Male: (Inaudible)

Bob Kirkland: Okay, but what I'm saying here how many of you have ever read the Constitution of the State of California, raise your hands? You also swore an allegiance to that. Read it.

Ms. Soleece: Thank you.

Mr. Kirkwood: Thank you.

Ms. Soleece: Very good. Who wants to follow that? Does anyone else want to add on? Come on up.

Male: (inaudible)

Ms. Soleece: I want to get you close enough to the mike right here.

Male: That's okay. That's all right, thank you.

Ms. Soleece: Well we have to get it on tape.

F. Kirkland: Well I will say that - uh - all - all of you government speakers and Bob - Bob are very hard speakers to follow, but I do have a few notes here and - uh - but I'm kind of short. Most of it has been addressed already. But my name is Fred Kirkland, Bob is - uh - a nephew of ours, and - uh - we - uh - we're farmers in Yolo County right across the - uh - right across the river here, and we get our water from Sacramento River. Uh - uh - the project appears to be a - a good deal for the project partners and we have no ill-will toward them. However, we all know that there's a limited supply of water in the Sacramento River to go around, especially in a dry year. For example the East Bay M.U.D. will, under the agreement, is guaranteed 100 million gallons per day, and where would we - where would that lead Delta water users in such a case. Uh - where is there a guarantee - where - where is our guarantee? Now, oh - one thing I didn't mention a while ago - uh - the young lady mentioned the - uh - the notice that was sent out that we happened to receive - uh - a special carrier delivered it to us, but evidently he didn't find a lot of our neighbors, so that's a reason a lot of our neighbors aren't here. Uh - now - now here's our biggest

concern our most - we are most concerned about a dry year water supply and the impact the proposed diversion would have on the remaining flow of the river - uh - the water level of the river, the water quality including the risk of salt water intrusion, and the water rights of Delta water users. The meeting notice states: this fact sheet describes a project that will improve water supply reliability for communities in the Sacramento and East Bay regions. Now the big question for us is can this problem be accomplished without having an adverse effect on the water supply and it's quality, thank you.

Ms. Soleece: Thank you very much. Is there anyone else? If - if you think of something else, you sure - oh, and then - and okay, let's - uh - let the other lady go and then - yeah, thank you - into the mike please.

Ms. Serpa: Okay. Hi, the one's here no me I'm Judy Serpa. Um - um - Dan and I were at the - Dan and I were at - uh - January's meeting downtown on H Street, if I'm remembering it, it was January maybe it was the 1st of February, but - um - one of the main questions we had was nobody talked about what happens during a rainy season and when you have high water. Sometimes Dan can't get in the fields till May or June because we have two feet of seepage, and all the guys in the room just kinda sat there and looked like your doing right now like you've never heard of it before. So not only do we have trouble when we have a dry year, but look what happens to us when we have a wet year. And I really expected to see it up on the board tonight as one of the problems, because we mentioned it - Dan mentioned it in January, but it wasn't there.

Ms. Soleece: I'm not sure what January meeting this was?

Ms Serpa: Down on H Street.

Ms. Soleece: Would this - would this have been for the northwest interceptor?

Ms. Serpa: Ye - yes, and we had the water fellow I think.

Ms. Soleece: Okay.

Ms. Serpa: And you look familiar to me.

Male: I was there as a commented.

Ms. Serpa: Right, and they didn't really want you to speak, but you kind of blew our minds when you talked about - this is when we first heard about this water project coming through south of the water tower, and Dan did mention what are you all gonna do when we have high water? There are 10 of us homeowners, ranchers that are going to be enclosed by the interceptor project itself, so we have big concerns in Clarksburg, all 10 of us. So not only is the gas line there, and it's running parallel with the railroad tracks, but your going to put this sewage line in 20 feet down 10 foot-wide pipe, and we're going to be all encircled, and this is our land, and our folks and grandparents have been there since 1856, so what do we do? We can't just sellout. So it's just something to think about, the few of us farmers that are there, and it means an awful lot to us, and we'd like to leave it to our kids. So if you're going to put the waterline through too, just think what happens when you have seepage. That's all I have.

Ms. Soleece: Thank you very much.

Ms. Serpa: Thank you.

Ms. Soleece: Thank you. Okay, is there anyone else who hasn't spoken yet who

would like to speak? Come on up. Speak right into that mike there.

Mr. Robinson: Yeah. Thank you. My other question was - um - uh - this is all talking about taking the river water and treating it on our own and that is a foolish thing. Uh - are you planning also any supplemental service of well water, in other words - uh - say you don't get enough out of the river, or you go down for repairs or something, or you also planning any pumping facilities from underground water - okay, that's fine. My - my concern is personal, of course we - we draw our water from wells, and don't want someone depleting the supply. It occurs to me - um - I'm not really an engineer, but - uh - I think this river is also effected by the tides even this far back up.

Female: It is.

Mr. Robinson: It is, yeah. Uh - and this relates to his point of you got the sewage outflow over here, and you're going to put your intake - uh - you better have somebody look at how close that is in case there's ever any kind of a back surge at the time of - uh - maximum tidal activity. Uh - you get the sun and the moon all lined up together, you know.

Ms. Soleece: Thank you. Would anyone else like to speak? Okay, the plan tonight was to - we set it up so that there would be an open house in the beginning of the meeting which you all participated in this presentation and comment period, then we also will be here for - um - a little while longer. If you have additional comments you'd like to make, if you have more in-depth questions - um - that you'd like to ask to talk with some of the project folks here, so - um - unless there are any more comments - last call for those. Okay, thank you all very much we definitely appreciate that you're here

and appreciate all of you comments. Thank you.

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TRANSCRIPT OF PUBLIC HEARING

EAST BAY MUNICIPAL PUBLIC UTILITY DISTRICT

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In the matter of:	Freeport Project	)	**Item No.:**
		)	
		)	**Date:** April 15, 2002
		)	**Time:**
		)	**Place:**
Taken by:	Cassette	)	
		)	
		)	

Prepared for
Jones & Stokes

Transcribed by

Foothill Secretarial Service
916/443-7400 – Telephone
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*****

PUBLIC MEETING

Mr. Montgomery: Thank you, Larry. Can you all hear me okay? Good Evening. I'm Kelly Montgomery with the City of Sacramento. I am the Neighborhood Services Area Director for city services in the southwest portion of the city. I'd like to welcome you all - um - to what is a joint meeting. It's a combined meeting. It's our regular Area Two Leadership Meeting, so for those of you who don't get enough of a meeting tonight, you can come back next month and the month after that. We are here every month on the third Monday of the month usually, and we discuss issues that are of importance regarding City of Sacramento, city services, regional services, and issues of interest to this southwest portion of The City of Sacramento. Um - the issue that were discussing tonight we thought was sufficiently important that we wanted to - to devote the entire meeting to it. Um - and - and it will be conducted by - um - people from East Bay M.U.D., and I will turn that over to them, but just very quickly I want to acknowledge that we have people here from East Bay M.U.D. and - um - Janet Barberi from Jones and Stokes will do all the introductions of that part of it - um - but we do have East Bay M.U.D., we - um - Sacramento R.T. - um - I'm sorry.

Male: The Sacramento County Water Agency and the Bureau of Reclamation.

Chair: I'm sorry, The Sacramento County Water Agency, The Bureau of Reclamation - um - Sacramento Regional Transit as you saw, they have the displays here, and also Consumnes River Crossing Project. Um - our Director of Utilities Jim Saquera, I'm - I'm doing a no-order of counsel members over here, so I'm working this way. Jim Saquera, our Director of Utilities with The City of Sacramento, and of course our - our counsel member from District Eight, Bonnie Pannel. Did I miss any city departments, any sister or brother agencies - um - any city departments that I missed? Okay. How many of you are from those agencies and organizations I've just described or listed? Okay. So everyone here - else is here to hear about what you came to say about - um - this project that is upon us. So at this point - um - I'll turn it over to Janet Barberi from Jones and Stokes.

Ms. Barberi: Thank you very much. Um - this meeting is a scoping meeting for the Freeport Regional Water Project, and some of you may be familiar with scoping - um - but fore those of you who are not the purpose of the evening is to receive your input and your comments about the scope and content of the Environmental Impact Report and Environmental Impact Statement for this project. Um - and so to do that though, we wanted to give you a brief presentation, and then after that presentation we'll go ahead and take your comments. Um - but before we do that I wanted to just quickly

introduce counsel member - uh - Bonnie Pannel and - um - she'd like to do a few - uh - welcoming remarks for you all.

Ms. Pannel: Thank you. Real briefly I just want to thank everyone for coming out. Uh - there are a lot of projects that are happening in South Sacramento and Freeport Regional Water Project is one of them - uh - Phase Two of the Light Rail is one I talk about all the time - uh - it will take Light Rail over to Calv - Calvine and Auberry - and with a major stop in front of the college with a major development there - uh - about a 100 acres of - uh - high density transit oriented development, and the other one is the Consumes River punch-through which will relieve some of the traffic that is going through our neighborhoods right now. Uh - real excited about those two projects - uh - I'm not real excited about the - uh - East Bay M.U.D. project, because it could potentially come down Meadowview, and I'm here to - tonight to say we really don't want the project to come down Meadowview, we'd prefer it coming through the open space, so just want to get that out there so everybody knows where I'm coming from. Uh - I wouldn't want to be recalled in my - uh - first term - uh - in office. So again, I want to thank you for coming out there - there's a lot of opportunity here for you to ask any and all questions that you might have about any of the projects. Thank you very much.

Ms. Barberi: Thank you. So with that we're going to start on a very brief presentation. We'll be talking a little bit about the process that we go through to conduct - um - Environmental Impact Report and Environmental Impact Statement and what that entails - um - your opportunities - um - this among many others for - for involvement in the project and for commenting on the project and - uh - talk a little bit about the project itself, describing it and giving you some more information and details about all of the - uh - figures that you see over here on the wall. So to start off I'd like to introduce Maria Soleece, she's with the East Bay Municipal Utility District.

Ms. Soleece: Thanks, Janet. Thank you and welcome. I appreciate you guys all coming out tonight especially on tax day. I think we did pretty well as far as getting the turnout we have. First, I'd like to briefly just talk about some history and background, and then I'll - uh - go through the environmental review process - how the public's input is incorporated into that review process, and then Tad Burcavaugh from the County of Sacramento will talk about the project, it's purpose, and the schedule. So how did we get here? In 1970, East Bay M.U.D. and the U.S. Bureau of Reclamation entered into contract to take water from the American River under the Central Valley Project it was 150 thousand acre feet. In 1999 - uh - Sacramento Country Water Agency entered into the same type of contract with the Bureau for about 15 thousand acre feet. In 1977,

we published a draft EIR, EIS to take water from the American River and it also included joint projects with the City and County of Sacramento to take water from the American River. So it was not only alternatives available to East Bay M.U.D, but also the city and county. In 2000, we published a re-circulated environmental document and that included alternatives on the Sacramento River and within the Delta for East Bay M.U.D. to make use of it's CBP contract. So in 2001, we worked towards a - uh - joint powers asso - agreement which formed the Freeport Regional Water Authority - I'll talk a little bit about that later. Uh - but to lead up to that we entered into a Memorandum un - un of Understanding with the City and County of Sacramento and the U.S. Bureau of Reclamation to scope a new environmental document - uh - to take water at Freeport. So what's the purpose of environmental review? Well what guides the process is the California Environmental Quality Act and The National Environmental Poli - Policy Act. This will be a dual document Environmental Impact Report, Environmental Impact Statement in the Freeport Regional Water Authority, which was formed as a joint authority between the County of Sacramento and East Bay M.U.D. in the city as an associate member is the lead state agency for that document, and the U.S. Bureau of Reclamation is the lead federal agency. And Rob Schroeder is here this evening, Rob if you could just stand, please. If you have

any questions he works out of the Folsom office, and he'll be here after the meeting to answer any questions you might have for the Bureau. So the purpose of scoping and why we're here this evening is first of all to inform you about the project, identify interested parties. We have a mailing list of about - uh - 6,000 people so far including - uh - property owners and interested parties. We had about 40 pre-scoping meetings to help develop this mailing list. I was here speaking last month to the Meadowview - uh - community leaders and also the Meadowview Development Task Force, so just part of trying to get out in your community and find out what some of your concerns may be with this project. In addition, identify other alternatives that we haven't already identified here and any potential significant impacts. This is just a list of all the chapters that go into the Environmental Impact - Environmental Impact Statement and Report, and there's a couple of 'em back here, if anybody would like to just take a breeze through. We publish a draft EIR that includes all of the comments that we received during scoping, and then there's another chance and opportunity to publ- comment on that document. Then we'll publish a final that will have all of your written comments and responses to your written comments. So afterwards, if you want to come up and just look at some of these documents, take some of them with you - uh - feel free to. And if you see here there's a

chapter on environmental justice, so just as an example of how we've incorporated comments that we've already received during pre-scoping from your community - uh - you have - uh - somebody on your development committee Keith Herron, he had - uh - talked to us about environmental justice and were we going to evaluate that so we're - have a whole chapter that will cover environmental justice in this new document. These are just some of the ways that we'll be coming to you, some of the ways you can get to us to give us your comments during scoping of the environmental document. We have a web page at freeportproject.org. We're available by phone. A lot of you got a direct mailer to you. Our fact sheet, you can pick one up on the back of the - uh - when you signed in, you can pick one on your way out if you'd like. It has - uh - a phone number for city, county, East Bay M.U.D., and the bureau. You can contact us directly, we can come to your - um - community meetings and speak. I spoke with some people here from Southland Park - was that neighborhood association about coming to their monthly meeting, so if there's any additional presentations you'd like us to give, that's no problem at all. So tonight we're here - um - April 15th. On the 18th, we have a meeting in Harold, the 25th in - um - back in Sacramento at Wildhawk Golf Course, so this is the third of our five scoping meetings. This is just an example of where the public - uh - process ties in the environmental review.

These first four pink boxes here during Spring of 2002, all the way up until Spring of 2003, around March of next year is when this environmental documentation process will be complete. So all of the public comment we receive up until then will be on project alternatives, potential - uh - impacts, evaluation of - uh - things let's just say transportation, impact, circulation - all of those types of impacts will all be incorporated into that environmental document, and all your impact will feed into that document. And then the Freeport Regional Water Authority will select the preferred alternative some time around March of next year, and from then to the end of when the project is in service 2010 or so, is when we will still be out here speaking with the public, but those comments will be focused more on construction. So for example, if you own a nursing home on - uh - Calvine and you're concerned about the hours of construction, that's the kind of specific input that will be fed into that process during the time when we're constructing the project and designing it. So now I'd like to turn it over to Tad Burcavaugh from the County of Sacramento to talk about the project description and purpose, Tad.

Mr. Burcavaugh: Thank you, Maria. I think I'm going to use this. Uh - good evening ladies and gentlemen, I'm Tad Burcavaugh, I'm with The Sacramento County Water Agency the other primary player in this project, and tonight I'd like to go through - uh - briefly give you an

overview of the project it - itself. It's - uh - in total it'll have the total facility capacity of 185 million gallons per day. It will be capable of delivering that amount of water. 85 million gallons per day would be for the Sacramento County Water Agency for use in the central county, up to 100 MGD would be used for East Bay M.U.D. in the East Bay M.U.D. service area. Uh - this project is also supported by the City of Sacramento. They are an associate member in the joint powers authority, which I'll go into just a little bit more - uh - later in the briefing. The Bureau of Reclamation is also - um - uh - given us - given us a letter of commitment and we're - and participate as the federal agency in the process. To start with - um - the diversion that we're looking at would be somewhere between half a mile to two miles upstream of the Freeport Bridge - um - that - that's the main stretch of the river we're - we're looking at right now because that's a primary candidate. Uh - and then there would be pumping facilities - uh - up the pipeline from there and then pipeline facilities running all the way over to Folsom South Canal with a turnout to a future - uh - Sacramento County Water Agency treatment plant. Then off the south - southern terminus of the Folsom South Canal there would be some kind of an extension - pipeline extension that would run down to the McKinley aqueduct which would also entail pumping facilities and some primary treatment. The Freeport Project has the benefit of - um - giving the

Sacramento County Water Agency - uh - or being able to deliver the Sacramento County Water Agency the water it needs to support growth, its approved in the general plan. This service water that would be moved for the - through these facilities would be used in conjunction with ground water in the - the most efficient manner that we can use it to protect a critical ground water in the central county. It - the water would also - uh - be used for East Bay M.U.D. to - um - supplement their supplies during drought years. Presently - uh - with the supplies that East Bay M.U.D. has - um - during severe drought years in the future - um - customers may be forced to cut back more than 50 percent. With this supplemental supply that cut back could be reduced to - uh - to only 25 percent. In addition to these two primary purposes - um - doing - participating in a project as partners - uh - allows us to reduce costs by constructing joint facilities. It also - uh - allows us to minimize environmental effects by building joint facilities instead of two separate - uh - intakes and delivery - uh - facilities, and it provides the opportunity for additional partners to benefit from unassigned - currently unassigned - uh - capacity. And I'll get into that in just a minute a little bit more. The potential intake locations as I - I showed you before on that other sheet would - that we're examining right now is one over here on the south side of the river across from the Pocket area - uh - one possibility here on the city

owned utility property here - um - other possibilities would be on either side of the river - uh - just north of Freeport about a half a mile or so. Then we're also looking at various pipeline alignments. I - this might be a little bit hard to see, but the - the primary alignments - we're looking actually - um - there - there's three shown here, but there's actually four alignments. One is on Meadowview, another one is along the power line easement, one could be along the Consumnes River Boulevard extension in this area, and then one on - kinda on the southern margin of the Delta Shores Project. Then any of these alignments could be combined with one of these pieces here - these segments transitioning either into Mack Road and Gerber on over to Folsom South Canal or down Consumnes River Boulevard, Calvine, and up Grantline, and back over to the Folsom South Canal - some combination perhaps crossing over in here. The primary alignments at the south end of the canal, which would be East Bay M.U.D. only portions - we're looking at two different cross-country alignments that - um - have been analyzed previously in other - uh - documents, but we will again take a second look at these. The criteria used for - um - evaluating - uh - various pipeline alignments include these here concentrated in the urban areas - um - were looking at a minimizing residential impacts, traffic impacts - uh - parcel severance - um - try to use public right-of-ways wherever we can, and to minimize

environmental impacts. The Freep - Regional - Freeport Regional Water Authority is - uh - composed of two major members, which are East Bay M.U.D. and Sacramento County Water Agency with the City of Sacramento as an associate member. The City of Sacramento will - um - aid us in determining - um - what architectural visual requirements we made need - um - on the intake facility itself and - uh - will help us in - um - acquiring needed rights-of-way or other - other land acquisitions - uh - within the city limits. The Regional Water Authority anticipated activities - the water authority itself will certify the environmental documents, finance, own, acquire land - uh - develop - that is design - uh - construct and operate the joint - uh - facilities. And it - it also has the authority to - uh - do the same for East Bay M.U.D. only facilities or Sacramento County Water Agency only facilities. - uh - if - if the authority agrees which each of the separate entities. There are several other projects in the general region that - uh - could be effected by our project and vice versa. Of course we have the Consumes River - uh - Boulevard extension, we have the Northwest Interceptor which is this bluish line coming down this way - down to the regional plant, we have the - uh - Light Rail extension coming around this way, and then we also have - uh - the Levy Project coming up this way and - and creek improvements. So it's critical that we coordinate with these various other projects

and not compound the situation in - in certain areas. The project schedule - uh - right now, of course we're in scoping, we hope to release the draft EIR, EIS in the fall of 2002. In - in the Winter of 2002, or in the Spring of 2003 - uh - complete the Environmental Documentation, certify the EIR - uh - Bureau issue it's record of decision - uh - we would also like to have our - uh - Endangered Species Act, biological opinion by that time. And in the Spring of 2004, we propose to complete design work and award con - construction contracts. Fall of 2006, complete the project facilities - uh - which are the joint facilities which are essentially those facilities that run out to the turnout for the Sacramento County Water Agency. Then in - in 2010, complete the Sacramento County Water Treatment Plant. Now with that I'll turn it back over to Maria, she can - uh - take your questions and answers but first wants to review - uh - certain issues that have come up in the past.

Ms. Soleece: Thanks, Tad. I just want to show you an example. I have about three slides here to go through with you of issues that have been identified to date over the last six years we've been working with the community on - uh - potentially taking water from the American River and now the Sacramento River, so there's a lot of things that we have heard in the past. We're going to reevaluate again in this document. There is also some new things - uh - that I mentioned earlier about the Environmental Justice. There is some - uh - water

supply issues that have also been raised. I was at your - uh - leadership meeting, and somebody asked you know, how much water is this gonna - how - will this effect the draw down on Folsom Reservoir or how will it - how will it affect the fisheries in the Sacramento River, so those are all issues that we will evaluate in this document fully. In addition, the - uh - in Sacramento County there's issues with ground water and contamination from Aerojet as well. This is not a ground water project, but as Tad said earlier the county will - uh - get off of that ground water basin and help it replenish itself and use surface water instead. Uh - issues - other issues construction, definitely we've heard things like are you going to be working 24 hours a day. That has not been anticipated. Those are issues that will be identified and spelled out in the environmental document. So now I'd just like to turn it back over to Janet and hear your comments and questions, and again those aren't all the issues there just an example I wanted to just show you to - so you would know that we have heard your com - your comments, and we are incorporating what we've heard so far and look forward to hearing what you have to say tonight. Thanks, Janet.

Ms. Barberi: Thanks, Maria. Public participation is a very important part of this process for all of the project partners, and so we're very grateful to you all for coming tonight - uh - to learn about the project and to

make any comments you might have about the EIR and EIS. Um - just a reminder about the - what we have remaining here in this meeting, we'll have a period for your public - uh - for your comments, and then once all the comments are addressed and you all have had a chance to - uh - to say all of your comments we will have time afterwards to break up into smaller groups or one-on-one if have in depth questions, if you want to take a look at the maps again, if you want to talk to any of the project partners, we will have time after the meeting to go ahead and continue to do that. Just - um - some information too about - about your comments - um - they are being recorded tonight, and so when you come up, please do use the microphone up there - uh - state your name very clearly so that we can get that on to the recording, and just be sure that you speak into that microphone, so that we can get the tape-recordings so that we'll have an accurate transcription of all of your comments tonight. If you don't feel like coming up to make a comment at the microphone, you can certainly - uh - write your comments, we have comment cards in the back of the room if you didn't pick one up already. You could also just send a letter. We also have a computer set up here behind me if you wanted to type in your comments, sometimes people find that a little bit easier than writing them out - so that's available to you as well. So with that - um - I'd like to open it up to the floor and see if there's anyone who would

like to make any comments. Yes, sir? Uh - if you could please, stand and use the microphone. Thank you.

Mr. Burroes: Okay, Tom Burroes. -

Ms. Barberi: Could you - could you also just state your name so that we all have a record of it.

Mr. Burroes: Tom Burroes. Okay, and I got a feeling my question is answered on one - on this chart over here. How - how large a pipe are we really talking about, number one; and how deep are we talking about placing it; and how much disruption are we talking about as far as business is? Cause I noticed that one of the things that you wanted to - one of the alignments which would be very bad is down Mack Road, and so I'm concerned about how long your going to disrupt businesses where you would be considering disrupting business down that way, not that that would ever happen. I just -

Mr. Burcavaugh: The pipe - the pipeline itself is - uh - could be up to seven feet in diameter which is pretty large, and - um - I - I would have to probably refer to somebody else on the actual period of time - how long - what our progress is - um - how - how long that disruption would occur. Do you know what that is?

Female: The minimal pipe cover is gonna be 5 to 7 feet, and so far some of the cross-sections do say it will be from 100 to 150 foot per day. It's what we're approximating right now.

Male: (inaudible)

Female: Seven plus - 5 to 7 (overlapping)

Mr. Burcavaugh: 5 - 5 feet of cover over the top, so it will be about 12 feet to the bottom.

Ms. Barberi: Okay, thank you. Who would like to speak next?

Mr. Coburn: Good evening - uh - my name is John Coburn, I'm the general manager for the State Water Contractors. Uh - we represent 27 of the 29 public agencies that take water from the State Water Project. Most of our deliveries are taken out of the South Delta at the banks pumping plant, so we have a vital interest of both from a quantity and a quality standpoint of any diversions upstream. Today - uh - tonight I would just like to address four comments that I would like to make sure that are covered - uh - in the EIR process. Uh - the first is - uh - CalFed. CalFed being a long term comprehensive - uh - program to address many of the problems that currently - uh - exist in the Delta - uh - the State Water Contractors are very supportive of that - uh - it's a very large program. Phase One is about seven years - about eight billion dollars in expenditures. Uh - we want to make sure that this project is not getting out in front of that process. We want to make sure that - uh - that your documents - uh - inter - inter are integrated or deal with how the - uh - CalFed process is going to work. We don't want to get into - uh - uh - situation - uh - where we get into a piece mealing where there's one project out ahead of - uh - a more comprehensive

project. Uh - second issue we got - um - has to do with the endangered species. Uh - right now - uh - the State Water Project has to deal with the delta smelt and the winter run salmon, which are listed under the Federal Endangered Species Act. Uh - the water that comes by on the way to our pumps - uh - uh - brings the winter run salmon down stream - uh - the delta smelt can - uh - get upstream in the Sacramento River - uh - and around the Freeport area, so we would be concerned about how your going to operate your facilities - uh - in conjunction - uh - with the endangered species - uh - any impact, if there's a certain number of winter run salmon in the system. If this project comes on line, does that mean that everybody down stream is then reduced in the amount of take that they are allowed - uh - under their biological opinions - very critical to us. Uh - another - uh - issue that we're concerned about is the volume of water - uh - if my math is right 185 million gallons a day quakes to about 18 thousand acre feet of water a month - uh - in a dry year that would total to somewhere in excess of 200 thousand acre feet. Uh - taking that volume of water out of the system upstream of the delta can have impacts on both the quantity and quality of water for all of the down stream users. So we are concerned - uh - about that. The last issue - uh - would be the alternatives. Uh - we want to make sure that the - uh - environmental document looks at alternatives to diverting water out

of the system. We would like to see - uh - you know, an analysis of reclaimed water - uh - water conservation projects just to make sure that - you know the project - uh - which - you know can effect us - you know there isn't another way to look at it. Uh - another concern we have is in - uh - previous documents especially with East Bay M.U.D. the - what their looking at - uh - their looking at a very, very - what we believe to be a very, very conservative - uh - hydro logic condition that their trying to protect against this project - uh - is that - we want - would like you to look at that and is that in concert with a normal rational planning - uh - process - uh - that say the rest of the water agencies in California are trying to deal with and protect against. Uh - we all want to protect our customers, but we want to make sure that it's a - you know fairly level - uh - playing field, especially when there's only so much water to go around. Thank you.

Ms. Barberi: Great. Thank you very much. Who would like to speak next? Thank you.

Mr. Leadbetter: My name is John Leadbetter, I'm a - uh - wine grape grower - uh - along - I have some vineyards along Grantline Road and then I have vineyards - uh - at the southern end of - of the Folsom South Canal down in that area as well. And I guess I've - just a couple of basic questions. Does this project come under the CPUC? You

are not - you are not - uh - uh - administered by The Public Utilities Commission?

Ms. Soleece: (inaudible)

Mr. Leadbetter: Do you have the power of eminent domain?

Ms. Soleece: East Bay M.U.D. does have the power of eminent domain.

Mr. Leadbetter: That's what I wanted to know, thank you.

Ms. Barberi: Thank you. Who's next. Okay, thank you. Yeah, we can -

Ms. Whitaker: My name is Joyce Whitaker, I'm with the Meadowview Development. I needed to know what were the determining factors that - uh - determined the pipeline - uh - route, and what will be the term - determining factors?

Ms. Barberi: Those will actually all be included in the Environmental Impact Report and Environmental Impact Statement.

Male: (inaudible)

Ms. Barberi: There's - there's many different factors that are included, and they will all be addressed as part of the environmental review.

Male: (inaudible)

Ms. Barberi: That does show some of the things that are - um - included and the criteria there in both urban and rural areas, so in case you can't see that - um - minimizing residential impacts, minimizing traffic impacts during construction, minimizing parcel severance - um - and routes along property lines when possible, routing lines, alignments within existing public rights-of-way, routing the pipe - pipeline within the

county and East Bay M.U.D. property where that's feasible, minimizing impact to prime farmland, and minimizing environmental impacts, so those are just a few of them.

Male: (inaudible)

Ms. Barberi: Actually, a pretty complicated process, and if you wanted you could take a look afterward at this document here that is the draft - um - Environmental Impact Report and Impact Statement from the previous time that we did that, and we could also go through that - um - in greater detail with you after the - uh - meeting, if you'd like that.

Mr. Brill: Hi, my name is Mary Brill, and my concern is, is that there is no direct benefit or nexus to the community to which you are impacting by your pipeline. And as a neighbor how will you be a good neighbor in being a partner in - um - the revitalization of this community, and would you entertain issues like contributing - um - to after-school programs and - um - so some of the programs that are dear to the hearts of the people here - seeing as though we're impacted by this development but we don't get anything other than our roads and - and potentially if there's a pipe problem we pay a price for that. So we'd like you to be a good neighbor and contribute.

Ms. Barberi: And that's definitely what we hope to do and appreciate your thoughts on those issues and bringing them forward at this

meeting, and in fact if you have any specific issues, putting them into written comments would be helpful as well.

Mr. Brill: I think that area managers - uh - the county could probably respond with some of the needs are.

Ms. Barberi: Great. Thank you. One more.

Mr. Burroes: Yes, Tom Burroes, again. One other thing I would like for you to consider as an alternative would be to desalinization plant, rather than - you know - you know - that would have no impact upon us - I give you maximum water. We don't have to worry about salt coming up from the delta. All right, plus on top of that you can sell the sea salt.

Ms. Barberi: Thank you. Okay.

Mr. Johnson: Yeah, thank you. My name is Dick Johnson, I have a number of questions. One is, you've mentioned 185 million gallons per day as the amount that would be withdrawn from the Sacramento River, is that every day of are there seasonal variations, or - uh - how does that work during winter periods versus dryer periods. Another question I have is I'm more concerned about the intake structure than I am about the pipeline, cause I live near there. You've listed four potential alternate sighting - sites for the intake structure, I'd be curious to know how those would be constructed, because it seems like if you put them on the Yolo County side it's gonna be quite a bit more costly to get the water across the river to - to get into the

pipeline in the first place. Another question I have with respect to the intake structure is - uh - obviously your going to be dealing with noise and visual impact, but one of the residents in our homeowners association understood that he heard there may be opportunities for an interpretive center or some kind of educational linkage associated with the intake structure. I - I'd be interested in seeing that addressed in the EIR. You mentioned residential uses, but I didn't know if that meant that kind of residential use or how it's going to impact the water skiers. Uh - so that would be something that I'd be interested in hearing about. So those are just kind of - uh - smorgasbord of - of interest.

Ms. Barberi: Great. Those are helpful, thank you. Would anyone else like to make a comment? There's got to be something else out there. Okay. Well we're gonna go ahead and break up then, and like I mentioned earlier I would encourage you to stay, and if you have any more detailed questions you'd like to ask of the project partners - um - if you have any more comments you'd like to make we had - we do have the comment cards - uh - please feel free to stay and do that. Thank you all for coming. Oh what a second, one more.

Mr. Johnson: Excuse me, I guess I do have one more basic question, Dick Johnson, again. Uh - why was the notion of - uh - diverting water from the American River abandoned in favor of diverting from the Sacramento River?

Ms. Barberi: Okay, great. Thank you. Kelly, did you have -

Mr. Montgomery: I stepped out of the room, I apologize, but my question - I just want to make certain that the people here are clear on the next steps of what happens after tonight, so If you could go over that again just for me.

Ms. Barberi: Sure. Maria mentioned in her presentation that we do have several other scoping meetings that we're going to be conducting - two more as a matter of fact. We will continue to be making presentations at various community organizations, and if you have any - um - interest in having one of the project representatives come and make a pres - presentation or - or come to one of your meetings to answer questions - um - they would be happy to do that and - um - I can help set that up. Um - there is a process though that - um - let me just flip back to that. I know you can't see it very well - um - but is - it is - uh - a - a copy - there is a copy of it in the presentation packet that you might have picked up at the front of the room, there's also a board up here if you wanted to take a look at it later. Um - but in terms of process what we're hoping to do is release the draft EIR, EIS in - uh - fall of this year, and so at that time there will be another set of - uh - public meetings, and - um - after that we would complete the environmental documentation. There would be another set of public hearings at that time, and there will be another opportunity I know for folks

especially who are interested in the intake and design and esthetics and those issues. There will be - um - some sort of public process developed for input related specifically to the intake structure, and - um - then after that there more group on one-on-one issues related to construction and the design work etcetera, but for the immediate future - um - there are a number of opportunities. Please do visit - visit the website too if you want any more information - um - if you want contact information, and that's freeportproject.org - www.freeportproject.org. Does that help, Kelly? Okay. Again thank you all very much. The public participation is an important part of this process, and we appreciate and are grateful that you all are here tonight. Thank you.

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TRANSCRIPT OF PUBLIC HEARING

EAST BAY MUNICIPAL PUBLIC UTILITY DISTRICT

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In the matter of:	Freeport Project	)	**Item No.:**
		)	
		)	**Date:** April 18, 2002
		)	**Time:**
		)	**Place:**
Taken by:	Cassette	)	
		)	
		)	

Prepared for
Jones & Stokes

Transcribed by

Foothill Secretarial Service
916/443-7400 – Telephone
916/443-7421 – Facsimile

*****

PUBLIC MEETING

Ms. Barbieri: Grab some coffee and find a seat. My name is Janet Barberi, I'm with Jones and Stokes, I'm helping facilitate - uh - these scoping meetings, and I see a lot of familiar faces, so I know a lot of you have gone through these kinds of public meetings and scoping meetings before, but for those of you who haven't - um - I just wanted to let you know the purpose of the meeting tonight which is to gather your input, your feed back on the scope and content of what's analyzed in the Environmental Impact Report and Environmental Impact Statement. Um - so your comments about any concerns you might have about the project - um - related to any issue that you can foresee. Um - before we do that though - before we get to - to the public comment part, we do have a short presentation, and - um - we'll be talking about the process used to go through an EIR, EIS. We'll be talking a little bit about what the project is - giving a description of that, and we've got the boards and the materials that you picked up, and - uh - after that then we'll get into your comments, so I'd like to start off by introducing Maria Soleece with the East Bay Municipal Utility District.

Maria Soleece: Thanks, Janet. Welcome. Thank you all for coming tonight. We appreciate it. I see a lot of familiar faces I haven't seen for a while, so it's nice to see you. Um - first, I'm just going to talk about a little history about the environmental review process. A lot of you here

are very familiar with that and how your input - uh - is carried forward in that - in the environmental documents, and then Tad Burcavaugh is here from The Sacramento County Water Agency, and he'll talk some about the project description, purpose, and our new - uh - Freeport Regional Water Authority that we have formed. So how did we get here? In 1970, East Bay M.U.D. signed a contract with The Bureau of Reclamation, and Cecile Leslie is here from the Bureau, who's in the back here of the room, so after the presentation he can answer questions. Uh - Sacramento County Water Agency did a similar thing in 1999, and in 1996, we started working on the Folsom South Canal Connection Project, and this poster board will look familiar to a lot of you when we were looking a alignments that came off of - uh - our turnout specified by our U.S. Bureau of Reclamation contract right where Grantline Road runs in to the canal and also some alignments off the terminus of the canal, and we looked at some - an alignment that actually continued the existing canal - and it's route - the way it was originally designed to head down to the Farmington Canal to deliver water to South San Joaquin County. In 2000, we published - I'm sorry, in 1997, we published our first draft EIR and there's - uh - copies of it here. It was two volumes, and a lot of you have a lot of input that went into these, and it included East Bay M.U.D. only alternatives and alternatives - uh - for the City and County of

Sacramento, a joint project but from the American river not from the Sacramento River. So in 2000, we published a revised EIR, EIS which is right here, and it included alternatives from the Sacramento River and in the delta. So East Bay M.U.D. amended their contract with the Bureau of Reclamation to enable them to take water from the Sacramento River - uh - in a addition to the American River. And in 2001, we - uh - entered into a memorandum of understanding with the City and County of Sacramento and the Bureau to start the process of looking at a joint project at - uh - Freeport - take our water from the Sacramento River - uh - Freeport's unincorporated town - uh - about where Meadowview - uh - Road crosses I-5 and then - uh - at the River. So now we're signing a new environmental review process. Uh - the final EIR was finally published in December of 2000, there's two volumes, and this includes a lot of people's letters that are here tonight and responses to those letter - uh - in - from the -97 and the 2000 re-circulated document. So we're going to take all of that information and start a whole new document. That's why Janet explained we're here tonight to start scoping this new document, and it's going to be lead by the Freeport Regional Water Authority which I'll explain later. Uh - as the Sequa lead agency and then the Bureau will still be the federal lead agency, so it will be a duel EIR, EIS, and then we'll look at this new Freeport Project, so it will re-

analyze everything. The purpose of environmental review - a lot of you here are familiar with it, again it's - uh - the CEQA and NEPA - um - Acts, and it will be a duel EIR, EIS so they'll study the different alternatives in the potential impacts of those alternatives. So scoping is what we're doing now. This whole month of April, and it's to inform the public about the project - uh - identified interested parties, identify potential other alternatives that you don't see on any of these maps - uh - that may be - uh - viable to us and the impacts to those - potential impacts of those alternatives. And this is a list of all the different chapters that will be covered - uh - in the EIR, EIS. We've added a chapter based on the input we received from the - uh - Sacramento community near as Meadowview, the City of Sacramento - uh - on environmental justice. We have a web page for our project, Freeport Project .org. that's new. We did - uh - have just - uh - project web page before, and again we're available by phone - uh - come out and do presentations. I think it's May 9, I'll be at the - uh - East Sacramento County Cpacs Meeting. Last night I was out at South Sacramento County Cpacs meeting, the week before I was at the Elk Grove Water Service board meeting. So is - if there's anyone here who would like to tell us tonight about coming to their chamber of commerce or shirt-sleeve session - we'll be doing that for the Lodi - uh - City Counsel, let us know. It's just listing our meetings. So we're here on April 18th, and Harold on the

25th, that will be at the Wildhawk - uh - golf course, and it's in the fact sheet that you received . In addition in the fact sheet, there's four numbers one for - uh - represented from the city, from the county and East Bay M.U.D., and and the Bureau - uh - so your welcome to give us a call if you have any questions after this meeting. It's just an example of our time line just starting here with this new environmental document, and from here until spring 2003, is when we will be looking at all the different alternatives. We're hoping by March of 2003, to select a preferred alternative, and after that - uh - the input that we receive will be based on - uh - construction implementation of the one preferred alternative. So before that period - uh - within this next year, your input is incorporated in this - um - focused on the different alternatives and - uh - both of the agencies will need to determine the preferred alternative to move forward with construction and final engineering design. So I'm going to turn it over to Tad Bucavaugh now who will explain the shared facilities between the two agencies on the joint proportion of this project.

Tad Burcavaugh: Thank you, Maria. Tad Burcavaugh, I'm with the Sacramento County Water Agency, and we are the other primary partner in the Freeport Regional Water Authority. Uh - the Free - Freeport project is designed to - uh - for a capacity - uh - to be able to take up to 185 MGD. Um - 85 of that MGD - uh - capacity - that's a million

gallons per day - would be for the Sacramento County Water Agency. Up to 100 MGD - uh - would be for East Bay M.U.D. Uh - this project is supported by the City of Sacramento and they are an associate member of the - uh - Freeport Water - Regional Water Authority. I'll get into that just a little bit more. Uh - starting with the diversion, we - we're looking at - uh - potential alternatives in this general area from about a half mile upstream of the Freeport Bridge to about two miles upstream of the Freeport Bridge. Uh - we will have - uh - pumping facilities in that area, and then we'll run a pipeline to the east to a turnout for the Sacramento County - uh - Water Agency - uh - Water Treatment Plant which will be in the second - second phase of construction. From this location, it will be a strictly East Bay M.U.D. use over to Folsom South Canal, and then off the - uh - Folsom South Canal we're looking at some alternative routings to route another pipe on down to the McKinley aqueduct. Uh - the pipe up in this area it - would be as large as seven feet in diameter - uh - from - from here over and down in this area five and a half to six feet in diameter. Also - um - in the - in the southern end as you could see here where there will be a pumping plant and a water treatment plant associated with those facilities. Uh - the purpose of the project is primarily to provide East Bay M.U.D. and the Sacramento County Water Agency with additional water supplies. For East Bay M.U.D. those water

supplies would offset - um - serious - uh - shortages during drought years. Presently - uh - with water supplies available to East Bay M.U.D. under sever - uh - drought years in a near future cut - cut backs or rationing could of - could be at 50 percent or more. With the new supplies that this project could bring down to East Bay M.U.D. service area - um - rationing during the drought years could be - uh - reduced to only 25 percent. Uh - for The Sacramento County Water Agency - uh - our water supplies are to serve - uh - growth that is pro - projected and - and approved under the general plan within the - uh - Sacramento County Water Agency zone 41 - zone 40, which is this yellow area right in here. Uh - besides these two main purposes - uh - this project - uh - will serve to reduce cost to each of the individual partners. By joining together we won't have to build as many facilities when there may be some - uh - economies of scale. Uh - It will also reduce the amount of environmental effects - um - compared to doing it independent - uh - projects and - um - it will provide the opportunity for additional partners to use - uh - some of the unused capacity which would occur in certain years - um - mainly when East Bay M.U.D. would not be taking water, those are in the wetter years. Uh - I might clarify or add to that is that those additional opportunities will be evaluated in follow on environmental documents. This environmental document does not - - um - include an evaluation of -

of the part of potential partners act - activities. Uh - to - um - add a little bit more on the potential intake locations we're looking at, on the Sacramento we're looking at - uh - one upstream - well the - the Freeport Bridge is right in this location right here. I know this is just a little bit hard to see. I don't know if we could get the - these back light off or not, but the Freeport Bridge is - is right down here. We're looking at - um - two - uh - intakes in this location, one in this location, and one here. This is about two miles upstream. This would involve - uh - a pipeline running down - uh - down to a corridor right here where another project is - uh - could potentially go in, so we're trying to minimize - uh - the environmental effects along that corridor. We're looking at - uh - - uh - potential intake - um - located adjacent or on city property right here. It's their utility department property, and - uh - this is one of the reasons why - uh - we want to work closely with the city. We think there's a good potential there. Also we have - uh - two other potential intake sites we're evaluating. This is kind of a preliminary shot, - uh - one on the west side of the river here, and one on the east side. Uh - going over to the east - this is the Freeport area. This is the city site right here, and then the other sites would be down in this location - uh - going to the east, we're looking at four different pipeline alternatives in - in the west end - uh - one running down Meadowview, one running - uh - along a power line easement here,

- uh - another one that's not shown on this drawing which would be - um - in conjunction with an extension of the Consumes River Boulevard to the west over to the freeway. And then a - another one that's kind of on the margin of the Sacramento Regional Waste Water Treatment Plant in this area here, and them - um - over here - the next portion to the east. We're looking at potential links where we could - we could run from any of these alternatives here and go down to a major alignment along Calvine or a major alignment along Mack Road and over to Gerber, but these are our preliminary look. We think these have a lot of potential, but the purpose of a scoping meeting is to get some feedback - uh - from you as - as to other alternatives that we might want to consider. Uh - running east then from - along Gerber up to about Bradshaw - uh - both on Calvine and Gerber somewhere in this area is where we would have a turnout for the Sacramento - uh - County Water Agency service water treatment plant. And the treatment plant would be located somewhere in here. Running down to the south we're looking at - um - extending a pipeline from the southern terminus of - of the canal to - uh - connect to the McKinley aqueduct. And as I said previously, there would be pumping plant associated with this - uh - a water treatment plant, and then of course the transmission facilities. And I think Maria if you'd like - uh - maybe you can expand on - on those alternatives.

Maria Soleece: Thanks, Tad. This - the alignment that comes off the Folsom South Canal right here - it would be a pumping plant at the terminus of the Folsom South Canal. In addition, there would be either at the Mokulmne aqueduct down where the KRC aggregate plan is or on our Comanche property a treatment plant to take this water into our - um - Mokulmne aqueducts. So in previous documents we evaluated a treatment plant at KRC, then the final EIR we did a potential site on the Comanche property which is property that we own, and - uh - it seems that there is space for us to evaluate an alternatives there so that has been added. In addition we've added the alignment that comes all the way down Clay Station Road and then across liberty which would avoid severance of these parcels in this area which didn't use to be vineyards and apples but now are. Uh - this alignment is about two miles longer but would avoid this severance, so this is a new alignment we've added. Um - when you were looking earlier at the alignments between Freeport - uh - and the Folsom South Canal that Tad was showing you was all of these are in public rights-of-way as well except in this area here, it's an existing utility corridor in this area - um - potentially, there will be another project that will use that same alignment, and we may share the trench. So the same concept here except originally this is in a P.G.&E corridor is where we - uh - came up with this one here, we're trying to use that same utility corridor. Um - so we've

added this other alignment in addition here. There's about 152 additional owners that we notified for today's meeting. Um this alignment up here included about 142 I believe. Uh - so there will be more property owners impacted by come - if we did choose to come all the way down Liberty and across - uh - I mean all the way down Claystation and across Liberty. This is - uh - pipeline routing criteria slide that some of you have seen before. When we tried to - uh - pick some feasible alternatives to start with to come with you to these scoping meetings. We looked at minimizing residential impacts, and now we have the - uh - high - half the project is in urban areas from Freeport to Folsom South Canal, but the other half is more rural so - uh - again same things apply as far as minimizing traffic impacts - um - trying to route along property lines, minimize property severance - uh - route alignments in existing public rights-of-way, route pipeline within East Bay M.U.D. Cou - uh - East Bay M.U.D. or county property where feasible - uh - and minimize impacts to prime farmland and to all the other environmental impacts that could include wet lands or other - uh - terrestrial species. The - is there anybody that has any questions just in general about this new alignment that's been added?

Voice: (unclear)

Maria Soleece: From the terminus to - uh - it's about - this red alignments about 17 miles long. This one here adds about two miles - about 19 miles

long, and before we we're talking about building - uh - installing in 8 foot pipeline under ground with a minimum of five foot a cover,- uh - so now that the quantity has been reduced, we're talking about a 5 to 6 foot pipeline again with a minimum of 5 foot a cover. Oh, I'm sorry, go ahead.

Voice: (unclear)

Maria Soleece: Yeah. We won't be using the Rancho Seco - Rancho Seco existing pump station that takes water out of the canal upstream of the terminus, we're building a new - um - pumping plant and the property right at the end of the - uh - Folsom South Canal is the Silva's property - um - I know that he planted vineyards now up - up from there north of there - uh - and so that pumping plant will be brand new and Tim Reynard is here, he's from the Community right in that area. Previously he has and you guys are to exactly - your on Clay station, right? Yeah. Okay. So what - um - Tim had asked for in previous meetings was to come down to Oakland or for us to bring up here photographs of pumping plants we built in our service area, so I do have some photographs here. We can look at those after the meeting of different pumping plants - um - we have designed in the East Bay and what - we talked about designing here in the past are - are providing in the design was a structure that looked similar to other agricultural structures - some kind of berm to reduce the sight of it and the noise of it and it will have

standard insulating to reduce the noise, - uh - so those are things that we're - we're - we're not saying anything different now, we're gonna even improve on those - um - architectural things we talked about before, and I also brought some - um - architectural renditions of some pumping plants, right now we're designing in Danville just to - uh - here's an architectural - uh - poster board that actually goes through and shows the materials, so just some more examples for you guys to look at. We haven't - uh - selected the preferred project yet, so he haven't got to final engineer architectual design, but so just give you an idea of what's to come in the future. And in addition - um - we talked about trying to route all of the pipelines off the public rights-of-way and then some areas from Freeport to Folsom South canal, we're right under the road, so we're considering that here too. So there's been some improvements, reducing the pipeline - uh - diameter, getting onto Claystation and Liberty with your public rights-of-way - you know, presenting that alignment. Um - and again, the pumping plant size will be reduced too, cause we're pumping less capacity. And again, the treatment plant - I brought some other photographs showing - uh - some treatment plant improvements we've done in the East Bay - kind of give you an idea of a footprint for that. And we did present site layouts in the EIR but nothing like a photograph or artist rendition or anything like that, so I just brought some

examples, and I can show you after the meeting. Um - Yeah, and in addition Tim mentioned that he had thought we were talking about 24 hour construction or he had heard that somewhere, that is not something that we have said we're going to do - construction 24 hours a period at 24 hours a day. There may be areas where that may be feasible, but right now we're just talk -we will present what was presented in this document, and it was not a 24 hour a day construction schedule. Um - the Freeport Regional Water Authority - I was talking about earlier that has been formed between the county and East Bay M.U.D. includes two board members from the East Bay M.U.D. board, two board members from Sacramento County, Natollie (phonetic) and Ila Collins, and then the City of Sacramento is an associate member to the board, So one of their City Counsel members will sit on the board, cause they're a vital partner in this project especially if we use their property near the Meadowview site and a significant portion of the pipelines do go through their city limits. Um - so the Freeport Regional Water Authority will certify the environmental documents, finance, own, develop, and cons- construct, and operate the Freeport project facility, so those are the shared facilities only. So if we come back to starting at the Sacramento River here all the way to about this area here where you see these two yellow vertical lines, that's where the county will build a treatment plant to take their water into

zone 40. Those are the shared facilities. From there all the way to the Mokulmne Aqueducts. Those facilities will be owned and operated by East Bay M.U.D. only to deliver water to our customers. And this is just an example of what's going on between - uh - Sacramento River and - um - Power Inn Road in Sacramento. There's about seven projects going on concurrently with our project. Then our environmental construction - and construction schedule, so we're trying to work with the other projects to see if we can put the pipe - our pipes in the same trench. There's a Light Rail that's coming down - uh - Consumes River Boulevard. They're on the same exact construction schedule as us, so there maybe opportunities to just disrupt that area one time and put our pipeline under their Light Rail line. And the schedule - uh - here we are staring with scoping. So by September, we're hoping to release - uh - draft EIR, EIS what will include all of the comments from scoping and all the comments we - uh - receive between now and September. As you all know from the pass this isn't your only opportunity to comment. We'll be back out here, there will be more - uh - what we call before-workshops. We sat down actually drew lines on aerial photographs of different potential ways to get from the terminus of the canal to Claystation Road. We took those back to - um - East Bay M.U.D. and we evaluated the different alternatives and came back and talked to the community about why

from an environmental or engineering standpoint they were good or bad, and actually in the - there's about 11 neighbors in the area terminus of the Folsom South Canal where we actually moved it onto an area where it wasn't before. Some neighbors were - weren't impacted originally, but it best - everyone felt that it was best for the 11 owners in that area, so - um - we'll continue t do that same type of outreach with you that we did before. In 2006, is when the project will be in service to deliver water to East Bay M.U.D., and not until 2010 will the Sacramento County Water Agency use the facilities to deliver water to their Zone 40. Uh - so that's when they will build their treatment plant and be able to deliver water to their - um - Zone 40. Before we get to the public comment period I just want to list some of the things that we've heard in the past, some new things that we've heard, and we will - we're gonna evaluate these again - um - visual effects of - uh - the intake structure itself on the river. Again we just discussed about the pumping plants, - uh - potentials for water transfers to others, - uh- some entities have said what's happening with the East Bay M.U.D. wet year capacity in that pipe, your only using it in the drought years, is it available for others? Uh - so it's a comment we received, - uh - effects on the water quality in the Folsom South Canal, cause we're putting in Sacramento River water where now there's American River water, so we're talking with SMUD about

that, - um - and again -uh- issues related to construction, and public safety during construction. Tim talked to me about be good if your going to be doing construction during the summer because schools out, so we're not going to have to worry about construction traffic at the intersection here of the Twin Cities and Claystation. That - uh - can be dangerous and there's been, oh I how many life flights out of there?

Male: Oh probably four since you've been here, and probably a dozen since I've been through, so it's -

Maria Soleece: So about a dozen since 1996, - uh - so now we'd like to start with - uh - public comment period, we'll sit the microphone here in the middle. You'll have other opportunities to comment. We have a laptop here you can just type in your comments, you can take the comment card with you and mail it in, you can go to our website, there's an Email there - uh - you can submit your comments, and you can call me too. Um - I do take - uh - um - telephone log when I'm talking to you to answer your questions and write down your comments.

Male: (unclear)get rid of the land, water, Folsom south canal, American River with Sacramento, and - uh - is Sacra- American River going down the canal?

Maria Soleece: The American River water is in the canal now, cause it comes off a nimbus.

Male: (unclear) blended?

Maria Soleece: Well it will be blended. It will be blended. Theoretically, we're taking the water off of the Sacramento River, and that's the water going to the East Bay. But yeah, theirs obviously will be blending.

Tad Burcavaugh: I'm going to add that - um - that the water for - the water for East Bay M.U.D. and for Sacramento County Water Agency - but for East Bay M.U.D. that water would be diverted at Freeport off the Sacramento, but at the same time there would be water that would be diverted for SMUD - uh - to some amount - uh - at Nimbus - uh - going down Folsom South Canal. Those would inevitably be mixed, but the amount of water that East Bay M.U.D. could then take off the south terminus would be identical to what's being diverted out of Sacramento in terms of quantity.

Male: SMUD would get the American River water.

Tad Burcavaugh: Yes.

Male: Only, and then it - none of that goes up ov -

Tad Burcavaugh: Right, but - but it inevitably it gets mixed in the canal, so it changes the water quality in the canal.

Ms. Barberi: Okay. To do this public comment thing right I need to say a couple of things.

Female: Oh, sorry.

Ms. Barberi: That's okay.

Female: I'm being scolded here.

Ms. Barberi: No, it's okay. Um - I just want to let you all know that we are recording your comments tonight, and so it's real important that - um - if you would like to come up to the microphone to make any comments that you do, do that into the microphone, so that we can actually get the tape-recording. The public participation is a very important part of this project, and so your comments - uh - your participation in being here tonight is important to us, and we're grateful that you're here, and we want to make sure we get a good recording of all of your comments. If you don't, as Maria said feel like standing up at the microphone, we have the comment cards. You can certainly right a letter. I also wanted to let you know that after the comment period we will be staying for - uh - you know as long as we need to, but we've - we've scheduled it for another half an hour if you wanted to stay have some more in depth discussion - ask some in-depth questions. So let's go ahead and start with the comments, and it looks like we have our first person here, so if you could state your name.

Paul Ulmstead: I will start off. Uh - my name is Paul Ulmstead, I'm with the Sacramento Municipal Utility District, and - uh - thank you for making this comment period open - uh - I appreciate it. First, I would like to say that SMUD does support this project - uh - conceptually to help solve the regional water problems. We're very supportive of that issue - uh - very pleased to see that you had a -

uh - the issue brought up about the water quality in Folsom South Canal. This is - uh - very grave concern to us. It - uh - effects not only our - um - not only are - are - are current operations being in commission with Rancho Seiko but also our future Consumes power plant. So as a part of that , and - and we are working with East Bay M.U.D. staff to address some of these issues, but as part of the environmental document we would like to assure that - uh - I want to see an estimate of - of what the estimate will be when you import 100 million gallons of water into the - uh - existing Folsom South Canal. It will basically out mix the American River water by about 12 plus times, so we're only going to be use about 8 million gallons the water on - in - in the power plant. So the - the impacts the water quality are pretty severe. We'd like to have you address that in the environmental document. Um - I'd like the considerations to include the existing Sacramento River water quality and the water quality the change, that will occur in the Folsom South Canal itself due to the importation in the increased amount of total amount of dissolved solace. Um - I'd like to - uh - bring to you attention that it's going to require exi- - uh - additional water treatment - uh - at SMUD, and this is going to have an impact on our - our future MPD - or existing MPD ES discharge requirements and - uh - it'll impact our discharge requirements - uh - for the future power plant. Um - also I'd like to have you address,

if you could, the power - the policy implications that is the Bureau of Reclamation policy implications - uh - when you import water from a different source into an existing facility. We believe that the Bureau has an important role in this whole issue and their - and their policy and their - uh - it is very important if you include it in your discussion. Um - one thing that hasn't been addressed on your thing is that when you will - right now we 're - we have an existing Ranch Seiko lake out there which uses the higher quality American River water as part of it's recreation opportunities out there - when that - uh - when the new mixing of the water from the Sacramento River comes in it will have a detrimental impact on the existing recreational opportunities of Rancho Seiko Lake. Now there - I forget how many thousands of people use it a year - around 100 plus thousand recreational people use Rancho Seiko Lake, and this different quality water with this higher dissolved solace which is possible. Other - other contaminants brought along the Sacramento River will degrade that recreational opportunity, so please address that in your environmental document also. Uh - we'd like to have you look at some alternatives including the pre-treatment of water before it gets not only in the Folsom South Canal or even before that in a point in time before it gets to the - uh - - uh - CEQA(Phonetic) turnout. That might - uh - have some benefits to all parties involved in - and everybody can benefit from that action.

Um - I think that's about it as far as now , but - uh - um - we are available - uh - to discuss our concerns with the - uh - you people who are preparing the document - uh - so if you have any concerns about how our operation goes on around - at a Ranch Seiko, the future plant, or existing use of the Folsom South Canal, please have the consultants contact us. We'll be glad to provide them any information possible. We'd like to be sure this document is - is complete and - uh - - um - you saw the requirements under Seiko if you don't want to go through this thing again, and - um - if there's any concerns - uh - we'll - uh - please feel free to contact us, and I will be submitting detailed written comments in the next couple of days, thank you.

Ms. Barberi: Thank you - take you up on that. Who'd like to speak next? Great, thanks.

George Weigeal: I'm George Weigeal, and we have property at the terminus - uh - at Folsom South Canal, and what - uh - uh - um - what will the pipe be lined with for - uh - to prevent head loss, and how much of a - how big a pump will they have at - uh - Freeport to pump into this - into pipeline, and - uh - what will that do to the level of the river, does it effect it? And will this bring sewage back from the treatment plant? And does this title thing have anything to do with it?

Ms. Barberi: I don't know -

Tad Burcavaugh: I can help with those.

Ms. Barberi: Okay.

Tad Burcavaugh: Let's go ahead and answer those. Um - the first question - uh - at this point we haven't made any decisions on - on how we would line - um - the pipelines at this point, and we - we will probably be getting into that - um - probably this fall sometime, so it's kind of early yet for that. Um - reverse flows in the river are important consideration - uh - with the intake being just upstream of the outfall from the regional plant, so we're trying to - uh - work on ways we might mitigate or - uh - forestall any - any - uh - you know taking in any water with the constituents that it might be a problem. Uh - your other question - you had a question about the size of the intake - um -

Male: The size of the pumps.

Tad Burcavaugh: The size of the pumps - um - I - we're looking a 185 MGD as the total capacity, and right now we're looking at - um - between eight and nine pumps - uh - some of - we're probably talking about somewhere around 20 MGD per pump - something like that.

Male: What's an MGD?

Tad Burcavaugh: Million gallons per day is the capacity to pump.

Ms. Barberi: Thanks Tad.

Female: About a hundred - uh - in million gallons per day is about a hundred and twelve thousand acre feet.

Tad Burcavaugh: Well if it were pumped constantly for year round.

Ms. Barberi: Right. Okay, who would like to speak next? As long as we can keep our power I guess.

Julie Hill: Hi - um - I came late, so you might have already addressed these. Um - or not. I have a couple of questions - um -

Ms. Barberi: Could you state your name and your organization or -

Julie Hill: Uh - huh. My name is Julie Hill, and I'm a master student at Stanford University and the operations of East Bay M.U.D. are my research project. So I'm - I'm being a little facetious. I'm studying the water resources in the Bay Area during drought period, and right now this is the segment that I'm working on is - is the Mokulmne - um - water resource. So - yeah - um - So in - um - in a brochure that I have - um - on the American River - um - it refers to - um - that East Bay M.U.D. would be guaranteed 70 thousand acre feet of water in - even - oh, it says even in extremely dry years and up to 112 thousand acre feet in all other years, so that is not - has - has the situation been revised since this has been published? So right now there's no wet year guarantee of extra water?

Ms. Barberi: Well our contract with the Bureau of Reclamation has been amended, originally it was for 150 thousand acre feet from the American River and now it's a 165 thousand acre feet over a three year period, with a maximum of 133 per year, and when we redo the hydraulic modeling for the whole central valley project and the

state water project - uh - we'll be determining what is availability of water in the dry years when we need it. Uh - so that is yet to be done. On the previous joint project on the lower American River with the city and county the average annual delivery was only 21 thousand acre feet.

Tad Burcavaugh: That this is - it's - it's a dry year supply, and there's certain triggers for other storage within the East Bay M.U.D. system which would determine when - um - this water could be diverted, so if - uh - storage - total storage within the East Bay M.U.D. system was above a certain level no water could be taken through this project. So that's - that would be essentially the wet years that water could not be taken. So it's - the history has been that, that occurs about 70 percent of the time. So the other 30 percent of the time some water could be taken through this project up to the limits that Maria was saying.

Julie Hill: Okay.

Janet Soleece: Sorry Tad. I'm not sure what - at what - what point you walked in, but just so you know (unclear) the - um - the process for tonight is we've - we're doing this comment period and then folks are going to hang around afterwards, so given it's a research project I'm guessing you'll probably have a lot of detailed questions. It might be easier to answer those individually one - on - one. You're welcome to make comments or ask you a couple more simple

questions, but if there really detailed things you might wanna get some personal attention.

Julie Hill: Okay, thank you. I have a - a simple question which is that - um - clarification on what - um - what - if the water will be treated - um - upon intake before it gets into Folsom South Canal. It seemed like you addressed that as an issue that was going to be addressed but not something that's been determined yet?

Ms. Barberi: That's right.

Female: Okay, but I'll talk to you more afterwards then. Thank you very much.

Ms. Barberi: Thank you. Who else would like to make a comment. Thanks.

Brian Nunes: My name is Brian Nunes, I live on the end of Claystation Road off that finger, and my understanding is that you're telling me that there's going to be a pump-house at the end of that canal.

Female: A What?

Brian Nunes: A pump-house at the end of that canal.

Ms. Barberi: Station.

Brian Nunes: That's right out my front door. I want to thank you for that. That's what I'm going to have to look at through my front porch. Um - what about lights, sound? Am I going to have to look at all that?

Ms. Barberi: Those -

Brian Nunes: It's going to be so visible from my front yard. Second of all, - um - what are you guys going to be using for a back fill over this pipe. Is

it going to be an aggregate that's going over this pipe, and if so where you planning to stock-pile all of this material, and what about truck traffic on our road, and the damage to our road, who's going to fix that?

Maria Soleece: I don't know that those are answered yet, but those are all definitely things that will be analyzed in our environmental impact report.

Brian Nunes: Cause that - if your going to back-field with an aggregate over the pipe and all the pipe being staged, where's that all going to be staged on Claystation Road, and what's that going to do as far as our traffic to be able to get in and out?

Tad Burcavaugh: Certainly, that's a major consideration and - and we're looking at trying to stage materials - uh - along the trench. I can't give all the specifics on these various - uh - alignments, but certainly that would be associated in - in of course maintaining traffic - uh - keeping dust down, keeping noise down, those are all concerns that we want to address and mitigate to the extent that we certainly can, or minimize.

Maria Soleece: Are you talking about for the 8 foot diameter pipeline? 130 foot right of way for construction easements.

Brian Nunes: That's a lot of footage.

Maria Soleece: And an 80 foot easement - and an 80 foot permanent rights -a - way, so now that we've got a smaller pipe we haven't determined

how that cross section is going to be shrunk down.

Brian Nunes: I wasn't here to understand what size is the pipe that you guys are installing?

Maria Soleece: From the Folsom South Canal to the Mokulmne Aqueduct so 5 to 6 diameter pipe - 5 to 6 feet, and we will replace and restore any of the construction disruption to the existing public rights - of - way. And we also talked about - we had questions about does East Bay M.U.D. have the right of eminent domain and yes we do, what we set up was a- talked about was a three tier process. At first we would - um - for the permanent right of way, try to - re - acquire the right of way, if not acquire, refer back to the owner, or go in for easements. So wanting to work with the individual owners to meet their needs.

Brian Nunes: I thought, last time I was at one of your meetings, and we discussed about - um - you guys were going to put the pump house on the other side of the hill so it wasn't visible for - for us before the turn on the aqueduct, and now that you guys are going to put it at the end of the aqueduct.

Maria Soleece: There were two alignments. One was up at Grantline Road. Is that where you're talking about?

Brian Nunes: No.

Maria Soleece: Right up from the terminus.

Brian Nunes: I can look out my front porch and look right at the end of the canal

at the end of Clay station.

Maria Soleece: And there's that nub there, and we were talking about putting it right on the other side.

Brain Nunes: On the other side to the - kind of the northeast of that hill.

Maria Soleece: Was that same area. We haven't went back and did any new analysis from what we did before yet, so it all - everything you heard before - same - the foot print and the layout that you see in the environmental document is still the same. We haven't went back and redone anything yet.

Brian Nunes: And as far as - like how often the pump will run, the decimal rating and so forth?

Maria Soleece: The previous document is based on larger quantity of water we were gonna take. We evaluated that and we will now for this smaller one. Before it was not just a dry year supply, it was - uh - during any year - mainly wet years and some - on some of the alternatives this is just a dry year supply, so no, it's not going to be on every single day, that I can tell you, but until we figure out the availability of water I can't tell you exactly - uh - the timing of that but it will be presented definitely.

Ms. Barberi: That will be part of the EIR?

Maria Soleece: Yeah, and before the EIR is published we'll be out talking to you guys and giving you details as we find - figure them out along the way.

Brian Nunes: Thank you.

Maria Soleece: I wouldn't subject anyone to reading all these documents to answer all their questions. You'd fall asleep right away. Thank You.

Tim Rhinehart: My names Tim Rhinehart, and one of the other hats that I wear is I'm president of a home owners association out on Claystation Road, and as far as the homeowners that are out there on the little finger by the terminus of the canal, we have - uh - essentially four main - uh - concerns. Uh - the first is the treatment plant. We don't want to see it and we don't want to hear it. Um - uh - Ms. Soleece and I talked about the one that's largely underground before and then maybe putting in a berm around it so you can't see it or hear it. We would prefer that something like that be put at the front of the line for consideration. Um - secondly, the traffic along Claystation Road has to be addressed. We have spoken about doing - uh - the construction in that area doing a period - during the summer when there isn't school and there isn't for importantly fog, because the traffic is going to have to be diverted along - uh - Twin Cities Road and Claystation. The intersection's dangerous. There's going to be additional construction through the same timetable through SMUD and their plant. So we're gonna have some concerns there. We would appreciate having that addressed and the road modified however so it would - doesn't create a deathtrap for us out there. Um - third, - uh - we had concerns - um - what about the actual - uh

- access to the water for Harold Fire Department. As you know we have no infrastructure out here, and in the last three years we had two close calls with fires in the Grove - um - we would like to see three fire hydrants added to the area. One at the interception at the pipe at Claystation Road, one at the Bennett Road - uh - um - intersection, and then one a Gorton Road. Um - I'm not upon the engineering to know if this water is continually pressurized or not, but I'm sure that's something that can be addressed - uh - later on. And then finally the road improvements as I'm sure you've had people out there and looked at the - uh - poor state of Claystation Road and Elliott. It's in a constant state of repair and rather than coming along and - uh - returning it to it's - uh - apre - you know that same condition it was, we would appreciate it if it was actually improved so it is not constantly in a constant state of disrepair and requiring maintenance. Thank you.

Ms. Barberi: Thank you very much.

Judy Weigeal: I'm Judy Weigeal and - uh - that's my husband, so we have the same - tie with it. I wonder what kind of facilities you plan to have where the pipeline joins the canal?

Female: Where it joins the canal?

Judy Weigeal: Yeah, what kind of facilities will be there?

Ms. Barberi: Yeah there will be an underground take-point off of the canal out to the pumping plant. Bill Harland what can you -

(Off The Record)

Tape 1 - Side B

Ms. Barberi: - no there may be some above ground structure right where it connects on the Bureau's property.

Judy Weigeal: Uh-huh

Ms. Barberi: The Bureau has an existing right-of-way there along the canal.

Judy Weigeal: Uh-huh

Tad Burcavaugh: The essential concept there is that at that, at that point there would not have to be a pumping station. It would be pumped - uh - from somewhere in the vicinity in the Sacramento River, and it would just go uphill - it may - uh - reach it's high point close to the canal and flow down into the canal. But there may be some structure there to - uh - insure that the pipe - pipeline remains full at all times no matter whether we're pumping or not.

Judy Weigeal: Uh-huh

Tad Burcavaugh: Uh - and so that there's no - uh - back flow from the canal back into the pipeline that sort of thing.

Judy Weigeal: Thank you.

Keith Watts: My name is Keith Watts, I'm a property owner up on the Borden Ranch and a vineyard owner also - um - some of my concerns are some of the paths that the pipeline takes, some paths may be less disruptive than others, maybe following vineyard lines versus cutting diagonally through them - um - I want to make sure fair

equitable consideration is given to the income-producing properties as their pretty developed and pretty important to us - uh - also any - uh - other impacts - uh - esthetic - uh - all - all those things that are important to us as property owners, so those are my - I'm not going to fight I just want to make sure that we're everything is given a fair consideration. Thank you.

Female: Definitely.

Ms. Barberi: Thanks.

Ray Harold: My name is Ray Harold. I'm a property owner at the end of Claystation - uh - along with Tim Rhinehart - uh - my concerns are the - uh - the detail or lack of detail you have with your maps. Uh - with your next visit, I would prefer to see a more detailed layout as it applies to our area here. This is our concern it's interesting to see the overall project, but what's important to us is our lives and how it will effect us. So your next visit I would like to see a better detailed - um - zooming in a little closer - uh - instead of 1 inch equals 10 miles. Uh - Or something closer

Maria Soleece: I have those maps actually to show you. We can look at them after the meeting.

Ray Harold: Okay.

Maria Soleece: They're not on poster boards. I quite - didn't put them up, but I did - did bring them showing your property lines and the pipeline alignments.

Male: (Unclear) parcel specific?

Maria Soleece: Your parcel specific - uh - without your names - incase anyone's sensitive to that, these maybe, maybe they are on there, oh, I better take that back. Anyways we can look after the meeting.

Ray Harold: Okay. And additionally the location of the pump house or pump station as you refer to it - uh - in reference to the canal - um - and any estimates of - uh - you know during the drought seasons when the pump house or pump station will be operational - uh - what is you estimated - uh - operation times - you know per day, per week, per month. What can we expect to potentially see or hear? Uh - you know at a day-to-day basis? Thank you.

Ms. Barberi: Thank you. Is there anyone else? Okay.

Beverly Nesbitt: My name is Beverly Nesbitt, and I have property fronting - uh - Claystation, and of course my concern is very selfish, because I'm wondering if - as I understand it now I - a normal road way with a right-of-way is like 70 feet, is that roughly correct?

Maria Soleece: It ranges between 30 to 60 feet actually - (overlapping)

Beverly Nesbitt: And your talking about - excuse me I didn't mean to interrupt.

Maria Soleece: Oh, that's okay.

Beverly Nesbitt: Your talking about 130 feet?

Maria Soleece: For construction - that was for the 8 foot pipeline, now we haven't determined what it is for the 5 to 6 foot yet.

Beverly Nesbitt: That means we're talking about - I think mine is 70 foot. I think the

road way is 70 foot in front of my house, and if you have to put another 60 feet on I might as well quit gardening in my front yard.

Maria Soleece: For potential construction easement is what we may be encroaching on to the properties adjacent of the roadways.

Beverly Nesbitt: I'm not too excited about this. I think that the - I liked the original idea of coming down along side the canal, because that was just basically farmland, and I'd think you'd disrupt a lot less people's coming and goings by doing it there and - uh - uh - it's just my comment.

Maria Soleece: Thank you. Is there any one else?

Kevin Canals: My name is Kevin Canals, I'm with the California Rural Water Association, and I did see on Issues Identified water quality. You did have ground water contamination issues in Central Sacramento County, and I was wondering if the project - if it was going to be mitigating some of the ground water contamination or creating ground water contamination issues?

Tad Burcavaugh: We don't see it creating any ground water contamination issues. I think in an indirect way it could help mitigate some problems. For instance we would not - um - in the Sacramento County Water Agency Zone 41, we - uh - will do conjunctive use. We will use both ground water and surface water when their most - uh - available - when their cheapest for us, and - and we will do this in kind of a balanced manner, but that does over the long - long term

is it minimizes the amount of ground water that we would use, and that indirectly then - uh - minimizes the influence of maybe drawing - uh - contaminated ground water from the Mother Boeing Aerojet area. That - so that's really the - the main connection between this project and ground water -

Kevin Canals: Thank You.

Tad Burcavaugh: - contamination.

Ms. Barberi: Is there anyone else who would like to make a comment? We got one more here.

George Weigeal: Uh - I'm George Weigeal again. Um - how many pi - uh - treatment plant will you have. Will you have one at Freeport?

Tad Burcavaugh: No treatment plant at Freeport.

George Weigeal: Okay, then you'll have one at Bradshaw and that will treat for the Sacramento, for that area?

Tad Burcavaugh: Yes.

George Weigeal: Okay and then you'll put the other treatment plant at Ranch Seiko?

Tad Burcavaugh: Yeah. One - and I - I'm not familiar with all the details of the options for locations on the extension from south of the canal, but - uh - as I understand it - it wouldn't be specifically at rancho Seiko. It'd actually be somewhere along the alignment of the pipeline that runs from the southern terminus down to the -

Maria Soleece: From the Comanche property that we own or at the KRC - uh - on KRC aggregate's property.

George Weigeal: What's KRAC?

Maria Soleece: Their an aggregate company - uh - near - uh - Mokulmne aqueducts.

George Weigeal: Okay. I have one more question. Uh - Maria this is to you. Uh - how old will your baby be when we finally get water?

Maria Soleece: All I have to say so far it's been pretty good job security. But least I know that she'll get payment for college.

Ms. Barberi: On that note, any other comments. Okay, well we'll go ahead and break up then and - uh - again just reminding you that there are multiple ways to make comments. If you didn't speak tonight and you think of something later, we have the comment cards, you can get information from the website, you can certainly send in a letter or - or call any of the project representatives with your questions, and we're going to hand around here for a while if you wanted ta - to talk to some folks, so thank you again.

Maria Soleece: So the previous environmental documents if anybody wants them for nighttime reading. You can come up and get them.

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TRANSCRIPT OF PUBLIC HEARING

EAST BAY MUNICIPAL PUBLIC UTILITY DISTRICT

-o0o-

In the matter of:	Freeport Project	)	**Item No.:**
		)	
		)	**Date:** April 25, 2002
		)	**Time:**
		)	**Place:**
Taken by:	Cassette	)	
		)	
		)	

Prepared for
Jones & Stokes

Transcribed by

Foothill Secretarial Service
916/443-7400 – Telephone
916/443-7421 – Facsimile

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PUBLIC MEETING

Ms. Barberi: Good evening everyone. We're gonna get started - so if you could find a seat. Thank you all for coming. Uh - this is the fifth of five scoping meeting we have scheduled to talk about the Freeport Regional Water Project and - uh - you're probably familiar with scooping meetings and how they work, but in case you're not - uh - the purpose of the meeting is to give you information about the Freeport Regional Water Project and - uh - hopefully you've had some time at the beginning of this meeting to have some of your questions answered and we've reserved some time at the end of the meeting to do the same thing. Um - but for this section we're going to give you a brief presentation about the project - talk a little bit about the process - the - um - uh- environmental process - what that entails. Uh - then we'll talk a little about what the project is, give you a bit of project description and then after that we'll have some time for you all to make any comments about the project that you'd like to make. So - uh - we'd like to start off with the presentation and so to do that I'll introduce Maria Soleece - she's with the East Bay Municipal Utility District.

Ms. Soleece: Thank you Janet - thanks you - thanks for coming. You guys wanna move up? No? Okay. No problem. So I'm gonna have to kinda stand sideways here. So, first I'll just talk a little bit of the project background and history and I'll go into the environmental

review process and how your comments will be incorporated into that and then Tad Burcavaugh is here from the Sacramento County Water Agency and he'll talk about the project description, the purpose and our new joint powers authority. So in 1970, East Bay M.U.D. signed a central valley project water contract with the US Bureau of Reclamation. And Rob Schoeder is here this evening - Rob if you could - if you have any questions for the Bureau, Rob's here representing the Bureau - he works out of the Folsom office. Uh - so we had a contract for 150,000 acre-feet. Since then it's been amended for a maximum over a three-year period of 165,000 acre-feet and per year a 113,000 acre-feet. In 1999, Sacramento Coter - County Water Agency signed a similar contract for 15,000 acre-feet. In 1997, we published an environmental document that included alternatives from the American River - that's where East Bay M.U.D.'s original contract was - uh - signed to take water off the Folsom South Canal from the American River. So it included not just alternatives for East Bay M.U.D. but also the City and County of Sacramento - there was a joint project to take water near the I-5 Bridge where it cos - crosses the American River. And in 2000, we negotiated a - uh - mandatory contract with the Bureau that would allow us to take water from the Sacramento River. We published or recirculated the EIR that included alternatives - not just from the Sacramento River but from the Delta for East Bay

M.U.D. only. So, in 2000 and 1, we signed a memorandum of understanding - the City of Sacramento, the County of Sacramento and the Bureau of Reclamation to start developing the Freeport Project. So, in February of this year, we formed a new water agency called the Freeport Regional Water Authority and the two main partners are the Sacramento County Water Agency, East Bay M.U.D. and then the City of Sacramento is an associate member to that Board - so they sit on the Board but they're not a - uh - paying or voting member. And then we're here starting environmental scoping for this new environmental document to now evaluate the alternatives for this Freeport diversion off the Sacramento River. So the Freeport Regional Water Authority is going to be or is the lead CEQA agency. That's under the California Environmental Quality Act and the Bureau of Reclamation is the lead NEPA Agency under the National Environmental Policy Act. So this'll be a dual EIR and EIS. So, the purpose of these scoping meetings is to inform the public first of all - first of all about what the project is - uh - to termi - determine who the interested parties are - identify any other alternatives that we have not already seen on some of the maps here and some that Tad will talk about and what some possible, significant issues or impacts a - associated with all of those alternatives. All this information is gathered into what's called a draft environmental - uh - document which EIR/EIS we

published sometime in September of this year and after that we publish a final where we include all of the comments from to - from these meetings, also, any other meetings between now and September - you have another chance to comment on the draft and this final will include all the responses to your document - to your comments so far. It's just an example of the chapters that - so far we've identified we are going to - uh - include in the environmental document - one that's new is a chapter on environmental justice and we've had about 40 - what we call pre-scoping meetings so far where we've out into the community and Meadowview area - uh - near the intake side - near the - uh - Sacramento River - they have been very active and - uh - coordinating with us - there's about seven other projects in their area and - uh - there - it's a depressed - uh - economy so their concerned about environmental justice issues so there'll be a whole chapter dedicated to that - so that's just an example of how some of the input we've received during scoping has been incorporated into the document already. We have a web page, Freeportproject.org, where you can go on line and access our information as far as phone numbers for direct contacts - email us with your comments - call us if you'd like us to come and do - uh - any presentations at your Cpacs, Chamber of Commerce - uh - last - about a week and a half ago I was at the Elk Grove Water Service Board Meeting - gave a presentation

there - uh - so if there's any presentations that you'd like us to do, just let us know before you leave or you can contact us through the web page. This is just a list of the five scoping meetings that we've had this month. And this is a diagram - not just showing our schedule - but the - this process that we're starting now - the public scoping meetings - will scope this environmental document that I talked about earlier will be - uh - completed and published sometime in September of this year and the final being published around March of next year - so the period between Spring of 2000 and 3 and March or 2000 and 2 and March of 2000 and 3 - this is where your input is incorporated into the EIR/EIS and that input is based on alternatives that are presented to you and then the Freeport Regional Water Authority will have to determine what the preferred alternative is based on this environmental impact - uh - report - impact - and impact statement. But your public input doesn't stop at that point - once we determine what the preferred alternative is, we'll start - uh - initiating final engineering design - get into construction - which is a two and a half year - uh - season and the project will be in service for East Bay M.U.D. by 2000 and 6 and for the County by 2000 and 10. So the input that we continue to receive throughout this longer box here to 2000 and 10 is directly related to the construction impacts as opposed to this process leading us up to March of 2000 and 3 where we're actually

- you're actually commenting and providing input on all the difference alternatives that we'll be evaluating. There's many ways to comment tonight - we have a comment card here you can pick up - you can mail them in - you can fill it out today - we also have a laptop here setup that you can type em in if you'd like or you can email them through our web page. So I'd like to introduce Tad (unclear) from the County - he'll talk about the project description - thank you.

Mr. Burcavaugh: Thank you Maria. Hello everyone - thank you for coming in - uh - we appreciate any - uh - comments you may or other alternatives you'd like us to consider and - uh - that's what we're here for tonight - to help us shape - uh - our document. So right now I'd like to tell you - give you a - a brief overview of what we're thinking right now, the project will be. We've got certain needs and - and - uh - initially, so we know - for instance going into the project that we do need up to a 185 MGD capacity - that's the peak - uh - diversion rate we forecast we - we would actually be moving water at - out of Freeport. The - uh - facilities themselves - we - we start over here on the Sacramento River with some kind of intake that would be in this general location. Perhaps you're looking at four different alternatives - uh - sites in that area. Then from the intake we would run a pipeline to the East to a turnout where - um - a pipeline would run to the Sacramento County Water Agency proposed treatment

plant. And then from that location over to the canal - uh - there would be a pipeline which would be moving solely - uh - East Bay M.U.D. water - uh - to the canal and then - uh - new facilities will be constructed to extend from the South end of the canal - a pipeline that would water down to - uh - the Mokelumne Aqueduct. This would include a pumping station and probably a primary treatment -tuh- plant from some kind to bring the water quality up to - to match - uh - that that's in the Mokelumne Aqueduct presently. The project - as Maria said - the project is - uh - supported by the City of Sacramento - uh - they are an associate member to the - uh - JPA which is Joint Powers Agreement which has formed - uh - the Freeport Regional Water Authority. Um - of course the Bureau of Reclamation is our partner in this too - uh - and - uh - will be acting with us along the way - uh - for any Federal actions in the environmental document. Diversion - as I said before - uh - the extent of the diversion locations would be from about a half mile upstream of the Freeport Bridge - down in this area - right in here - uh - to about two miles upstream of the bridge. Uh - the purpose of the project is - uh - for - is the Sacramento County Water Agency is to bring water - surface water into what we call Zone 40 or Zone 41 which is really the central county service area which - uh - under the general plan - uh - the County general plan is forecast to grow substantially and we're - our mission is to provide - uh - the water

to - uh - service that - uh - potential growth. And we would do that in conjunction with ground water in such manner to most efficiently use both of those sources. Uh - for East Bay M.U.D. this - uh - facility would move water in the driest of years to supplement - uh - their needs - uh - presently they are forecasting in the - in the near future that without this supply they - they probably would have to ration - uh - more than 50 percent during really heavy drought periods. With the supply they could cut that rationing from over 50 percent to about 25 percent. Um - and then ob - some of the obvious - uh - benefits to the project of course are - be reducing costs by - uh - participating in joint facilities. Uh - we would minimize environmental effects by having a single footprint which - uh - would probably be - uh - uh- have about a half of the impact as two facilities. And then - uh - there - there would be unused - uh - capacity during certain years - especially in the East Bay M.U.D. portion of the pipelines. Uh - that would offer opportunities for other partners in the future. As I said before - we're looking at - uh - four potential intake locations right now - these are preliminary. As we get your input - uh - through the scoping process and on down as we're developing our environmental document - we can look at other - uh - potential inlo-intake locations. We're also looking at - uh - various pipeline alignments - uh - Meadowview Road in the North - uh - an alignment that runs along this power

line easement here - um - another one that would actually - uh - coincide with the extension of Cosumnes River Blvd. through here - which - which is not shown on this map and then one at the - uh - northern margin of the regional plant or the southern - uh - edge of the Delta shores development. To the east we're looking at - uh - two major alternatives for pipeline location - um - one is up here on Gerber - the other on Calvine - uh - through our process meeting with other agencies and so on - we're - we're examining the possibility of other alignments plus we wanna get input - uh - from the public on those, too. So - uh - everyone of these alignments - uh - it carries some kind of - uh - either environmental impact or impact to - uh - residential neighborhoods or businesses along the way so there - it's problematic in any case and we're trying to minimize those effects wherever we can. Um - at the south end of the canal - which is right in this location right here - we're examining and evaluating two basic alternatives - uh - that would take water down to Mokelumne Aqueduct. This - a lot of this work was done in the prior environmental document that - uh - Maria referred to - uh - for the joint project and - uh - at this stage we haven't really reformulated anything - uh - haven't changed the facility location or anything like that - for this general area. As I said before one of the things we wanna do is - uh - minimize - uh - impacts to residential - uh - neighborhoods - minimize traffic

impacts during construction wherever we can - minimize partial severance - uh - in some areas - uh - those people who have ag parcels or that sorta thing that's really important for - uh - for their consideration - it - it's important for any - any landowner. Uh - (unclear) alignments - we - we - we'll attempt to put the alignments within existing public rights-of-way. Um - in the rural areas - uh - we - we'd like to put - uh - the pipeline in County or East Bay M.U.D. property where feasible. Minimize impacts to fra - prim - farmland. And then overall we wanna minimize environmental impacts. Just to give you a brief overview on the Freeport Regional Water Authority - the membership - the two main partners are the Sacramento County Water Agency and East Bay M.U.D. Municipal Utility District. The City of Sacramento is an associate member and they have a representative that sits with our elected officials on this Board. Uh - it - we each - uh - Sacramento County Water Agency and East Bay M.U.D. - uh - Utility grou - District - East Bay M.U.D. District - uh - each have two elected officials that sit on the Board. Uh - the - the Freeport Regional Water Authority will be certifying the environmental document - document - the CEQA portion. It will do the financing - it'll - it'll own the facilities - it will develop and design - it'll construct and operate the facilities. There are other - uh - major projects occurring over in the - in the Western area of our project that - uh - we need to coordinate with

also. We have - uh - light extension that comes down - uh - here and onto the Cosumnes River Blvd. We have - uh - as I said before the Co-Cosumnes River Blvd. extension which are these green areas. There's levee improvements plus the regional plant is - uh - planning a north/west interceptor line to come across here and over into the plant. So there are several other projects and they all kinda meet right in here - Morrison Creek - or in this general vicinity so we've had some major - uh - coordination - uh - discussions with these various projects and we want to attempt to - uh - take advantage of any opportunities - either to minimize impacts or - uh - improve the situation in the local neighborhoods. Our project sche-schedule we're here in the scoping meetings now in April - uh - in the Fall of 2002 as Maria said we - we plan on releasing the draft EIR/EIS - uh - in the Winter of 2002 to the Spring 2003 we wanna complete the environmental documentation in - uh - permitting. Spring of 2004, we'd like to - uh - complete the engineering design and award the construction contracts. And then from there we'd like to complete the construction by the Fall of 2006 for the joint facilities and then for the separate - uh - Sacramento County Water Agency facilities - uh - complete those in 2010. So I'd like to hand this over to Maria here for a moment and then we'll go - get into - uh - questions and comments.

Ms. Soleece: Thanks Tad.

Mr. Burcavaugh: Sure.

Ms. Soleece: As Janis said you'll have an opportunity this evening to comment but I just wanted to show you a couple of slides of some of the issues that we've heard so far since we've been working on this project since 1996. So, these issues that are listed here - and I'll go through a few more - are going to be re-evaluated in this new document - so this is gonna be a brand new document from scratch - it'll re-evaluate the impacts again sin - example affects on Folsom Lake levels - affects on Fisheries - there's some ground water contamination issues in central Sacramento County - well how will this project help or relate to that? Um - issues of water quality in the Folsom South canal - SM.U.D. is concerned about us putting Sacramento River water into the Folsom South canal that now carries American River water. So, we need to coordinate with them and work through those issues and also - uh - present any potential impacts of that in our document. In addition, construction impacts as far as during construction - are you gonna impact my property - are you gonna tear my house out - are you gonna sever my property - some of the issues that we've heard. We have evaluated but we will evaluate those again. So, now I'd like to turn it back to Janet and go ahead and start the public comment period of the meeting.

Ms. Barberi: Something I didn't mention before is that - uh - we have a

microphone set up there in the middle of the aisle way and we are tape recording the meeting tonight so if that you do have any comments we'll get them on tape and we'll have a very accurate record of what you said - um - and Maria did mention this but I'll say it again - if you don't wish to make - uh - uh- a public comment tonight you could also - we have public - uh - we have comment cards - you could write your comment out or you could take those home - write them later and mail them in - uh - it's up to you. So - uh - we'll go ahead and open up the floor to anyone who has a comment to make or a question they'd like to ask. Is there anyone who would like to start? Yeah - um - please use the mike in the middle there - thanks and -duh- tell us who are, too.

Male: Can I take it with me?

Ms. Barberi: If we can have your laptop.

Mr. Nelson: I'm Bob Nelson, I represent SM.U.D. and - uh - I just wanted to comment just a little bit on some of our concerns and - and before the first one slips my mind - um - we do have a proposed facility - uh - which is - uh - a 26 mile gas pipeline extension which will run from near our Carlson Cogeneration Project near the Regional Waste Water Treatment Plant to the Rancho Seco property. And depending on which route your proposed pipeline will take - there will be crossing - actually in - in either - in either case there would be a crossing. So, that's something that needs to be worked out.

Um - primarily and - uh - I guess you'd have to go to Jan Shori (phonetic) or the Board of Directors to get - you know - an official resolution, but just in general I'd like to explain SM.U.D.s position. Um - one thing SM.U.D. does not wanna do is see the residents in the East Bay deprived of - of water during dry years. That's the No. 1 thing. But what I can tell you - is we're interested in making sure that our customer honors are kept whole in the process. And we do have - as Maria mentioned - some - uh - very strong concerns about - uh - Sacramento River Water being convened into the Folsom South canal. There's a variety of constituents at issue but one of the largest issues is M.U.D.. There's a considerable amount of - uh - silt and suspended solids present in Sacramento River water that aren't present in the American River water that flows into the canal today. So, as a result - uh - issues about maintenance of the Folsom South canal and the cost supportion among the contractors - uh - come us as well as - uh - the affect on all users of the - uh - south end of the Folsom South canal - our Rancho Seco Reservoir - uh - recreation - uh - area which is very popular at this point. The existing Rancho Seco Nuclear Plant in our future Cosumnes power plant operations which quite frankly couldn't tolerate the - uh - the level of - of silt and debris and suspended solids that are in the water, so. On things we've talked with East Bay M.U.D. about and we think one

of the best solutions is clarifying the water and treating the water before it enters the canal, so. I guess that's some of - uh - some of our thinking - the SM.U.D. staff.

Ms. Barberi: Great. Thank you. Is there anyone else who'd like to make a comment? You have anything you wanna add to your - your comments previously? No? Okay.

Male: Can you tell us what in -

Female: Here - use this.

Male: What is environmental justice? Have we got a legal system going for the environment?

Ms. Barberi: What it - what it means is - uh - making sure that as - you know - projects are being developed that the - all of - all of the communities that are impacted have an opportunity - uh - to be engaged in the process and have a voice in the process and - uh - it's a very specific - uh - executive order that specifically states that government agencies that are working through this - you know - have to do as much outreach as they can to all of the communities and be sensitive to people who have various - uh - cultural differences or language differences and really going the extra mile to insure that you're doing the appropriate level of outreach. Did I explain that?

Female: (inaudible)

Ms. Barberi: Right. Yeah and that's - that's the point is to hear from them - uh -

Female: (inaudible)

Ms. Barberi: Well it's - it's making sure that the - that the project addresses all of the concerns through - throughout the decision making process. So - you know - it's - it's different - there's a difference between - you know - going through and doing a project and not hearing from anyone and working on a project and making changes to the project based on what you hear from the community, so that's the point of environmental justice. And Greg has an addition to that.

Gregg: I - I would just add that it also - uh - insures that specific communities aren't unfairly targeted or overburdened with - uh - um- more projects than an adjacent community.

Ms. Barberi: Any other comments or questions we can address? Could you use the microphone?

Male: Okay, good. I have a couple of points for clarification here.

Female: Here.

Male: Okay. The - the first point is - with the 22,000 acre-feet and the water contract amount to Sac County - I believe 7,000 of that goes to Folsom and 15,000 is identified to go to - to Zone 40 and 41.

Gregg: That's correct.

Male: Yeah. And then from that perspective of the existing development which that water was identified to serve - does in the projected 94 - 94,000 acre-feet identified in this particular proposal - does that mean in - under the general plan - grant it's - it's substantial

development here but it's about five times what is existing - if it's correlated with the -

Gregg: Uh-huh.

Male: - warm climate.

Gregg: Uh-huh, uh-huh. Well actually what we're looking at is - uh - what we - the - the amount we established in water form which is 78,000 acre-feet annually - uh - for over the long term and you're right 15,000 acre-feet from the CVP contract - uh - that we have presently would go to - to that and that's only a small portion of our total projected demand under - under the general plan. We're looking at other sources that we would bring through this facility which - uh -would include an assignment of - uh - CVP contract water from SM.U.D. - uh - apostle - and a possible water rights application.

Male: Of the - uh - total 207,000 acre-feet potential for the pumping facility - where would that water be accounted for? Does it come out of the American River - does it come out of - in other words does it come Folsom - does it come from Shasta?

Gregg: Well I think - uh - that kind of question is -it's one -one that's - uh - dealt with as the Bureau operates to supply its contractors and - uh - if - I don't know - if Rob wants to add anything to that but that's - that's a Bureau decision as to how they operate the system in order to meet - uh - contract obligations.

Male: And that to me needs to be very clear in the environmental documentation as far as where the water's coming from - where it's going and how it's going to be used.

Gregg: Ah - we - we will be doing a full blown hydrologic impact.

Male: Okay.

Gregg: Of the whole system including the state water project and this CVP. - Central Valley Project.

Male: And the other one, of course, isn't from the perspective of the Fish and Wildlife Service one does need to - to complete the - uh - Section 7 consultation and requirements under the Species Act and complete the compliance requirements under the Fish and Wildlife Coordination Act.

Gregg: We certainly will do that and we all - we've already touched based with both Fish and Wildlife Service and National Marine Fishery Service - also - I - might be helpful if you (unclear) identify yourself.

Male: Well my name is John (unclear) with Fish and Wildlife Service.

Gregg: Okay. Thank you.

Ms. Barberi: Okay, is there anyone else who'd like to make a comment? Or have a question we can address? Yeah. Use the microphone right there.

Male: - uh - part of your proposed route is down toward the -

Ms. Barberi: Would you tell us who you are, too?

Male: Oh my name is Joe Mertin (phonetic) - I'm from the Clements area.

And part of your proposed route there - is it possible to get the map on there again?

Gregg: Are you - you're talking about the southern portion?

Mr. Mertin: Yeah.

Greg: South of the canal.

Mr. Mertin: I couldn't get to the southern portion meeting - I was -

Gregg: There - oop - back one.

Mr. Mertin: Yeah - there is - uh - you see where the intersection of Highway 88 and -duh- and Liberty is - well - uh - that's our property there at the intersection and over to the next road - Buena Vista Road you'll be going through and my major concern is that you're going into your - your own - uh - uh- watershed area around the Comanche Lake and - uh - on the west side of Comanche Lake and that watershed area is very heavily infected with - uh - obnoxious weed known as - uh - star thistle - uh - about the only animal I know that likes it are bees. And - uh - we have endeavored on our ranch to keep star thistle out and have eradicated it consistently over the last 50 years and I'm concerned that your vehicle traffic on construction as well as - uh - subsequent maintenance and what have you is going to be carrying it in and I'd like you to address what you're gonna do about that - in fact I'd like you to clean up the mess around the Comanche Lake and get rid of that star thistle if there's someway to do that - uh - so that's my comment.

Ms. Barberi: Thank you. Are there any other comments?

Male: Sure I had one final question - I guess I'll get the mike.

Ms. Barberi: Yeah, thanks.

Male: Um -my question had to do with Dry Year Operation - um - I was at - uh - a meeting last night of Cosumnes C-Pac and - and I think there was considerable attention paid - uh - to the fact that the project was only designed to operate in dry years and absent a crystal ball I guess we don't know how many that is but 3 and 10 is - is something we've discussed with East Bay M.U.D.. Um - what I'd like to - uh - get on the record and have you comment about and (unclear) is what our plans for additional marketing in your water - you talk about opportunities for additional partners and - and the real issue is what percentage of the time is a hundred million gallons a day flowing through the canal as proposed - uh - or a greater volumes that - uh - and greater frequency than 3 and 10 years. Can you comment on that?

Ms. Soleece: Yeah - right now this environmental document is scoped to only include the 185 MGD - the 85 going to the County and then what goes past the treatment plant is the 100 MGD for East Bay M.U.D. during the dry years - so the wet year capacity is - I think - what you're talking about and this document is not included - that's not included in this document. So, if there are any other people who would like to use that wet year capacity - they're gonna have to go

through the same environmental document proc - documentation process we're doing now to address any impacts associated with diverting water and - and using that wet year capacity. So, still the - the total capacity is still only a hundred so there'll never be more than a hundred - uh - MGDs and they would only be during the wet years instead of the dry years and the modeling that we did for the - um - project in the 2000 re-circulated document - there was an average - uh - annual delivery of 21,000 acre-feet over the 70 year hydrology - so redoing all that modeling now - uh - but that's the numbers that was presented in the 2000 document - 21,000 on the average - so - we have copy actually of the 2000 and 97 documents if you'd like to take some with you - you can find out what those numbers were.

Male: (inaudible)

Ms. Soleece: I'm not sure if he does actually - I did not give them to him - he didn't ask at any of the meetings. So -

Gregg: But I - I might add a little bit to that is that each of the potential partners would probably have to bring their source of water - um - to that - to the facility - to use the facility.

Ms. Barberi: Okay - uh - unless there are - oh you have one more.

Male: Could I?

Ms. Barberi: Yes.

Male: My name is Gene Robinson - I live at 9980 Calvine and I - I realize

you're only doing the environmental portion of this at the moment but I would strongly urge the agency - get in there as soon as they possibly can and option enough land to build their plant. I was told tonight that you need 50 acres of open space out there - someplace - uh - in a circle there - maybe they should option several sites at - to accommodate the thing - if you don't do it now - you're gonna have houses springing up in the middle of it before you get there.

Ms. Barberi: Thank you.

Gregg: Thank you sir. We - we are attempting to do that at this point and we appreciate that.

Ms. Barberi: Okay, any other comments or questions? Got one more over here?

Female: I wanna get - I'm Betty Robinson. I live on Calvine Road also. Um - I spoke to several gentlemen tonight about it but - uh - they were under the - uh - under - misunderstanding that the - uh - Sacramento County - uh - community park was there on - uh - - uh - on Gerber - it's not - it's on Florin and so - uh - the Gerber you have several places that you could find your 50 acres very well.

Gregg: Okay.

Ms. Robinson: And this is what - uh - we were suggesting because you don't have as much population up there at the moment. Seems like the County has kinda forgotten that area in - uh - putting their subdivisions out there - they all went south.

Ms. Barberi: Thank you for that. Okay we'll go ahead and break up this portion of the meeting then and - uh - we'll stay for a while if you'd like to ask any more questions or take a look at the maps and talk to any people and - uh - definitely take a comment card and take some of the information materials if you haven't had a chance to collect those yet. So thank you all very much for coming.

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Attachment D

Freeport Regional Water Project
Scoping Outreach List

Freeport Regional Water Project
Scoping Outreach

Throughout the scoping process, Freeport Regional Water Project representatives contacted a multitude of agencies, organizations and individuals interested in the Freeport Project in an effort to provide them relevant project information, gather their input, and answer any questions. Organizations that were contacted include the following:

Arcade-Northridge Water District
Area 2 Neighborhood Group Leadership
Association of Bay Area Governments
Building Industry Association of Superior CA
Business Advisory Forum
California Department of Fish & Game
California Department of Water Resources
California State Reclamation Board
Carmichael Water District
Central Sacramento County Groundwater Forum
Citizens Utilities
Citrus Heights Water District
City of Folsom
City of Roseville
City of Sacramento
Clay Water District
Community Services Planning Council
Contra Costa Water District
Community Planning Advisory Councils:
- Cordova
- Cosumnes
- South Sacramento
- Southeast Area
- Vineyard

Cosumnes River College
County of Sacramento
County of Yolo
Del Paso Manor Water District
Delta Protection Commission
El Dorado County Water District
El Dorado Irrigation District
Elk Grove Water Service
Environmental Council of Sacramento
Fair Oaks Water District
Florin Resource Conservation District
Foothill Conservancy
Freeport Boulevard Improvement Association
Friends of the River
Galt Irrigation District
Georgetown Divide Public Utility District
Lodi Chamber of Commerce
Lodi City Council
Mack Road Merchants and Property Owners
Meadowview Development Committee
Mokelumne River Association
National Marine Fisheries Service
Natomas Mutual Water Company
Nature Conservancy
North Laguna Creek Neighborhood Association
Northern California Water Association
Omochumne-Hartnell Water District
Orange Vale Water Company
Placer County Water Agency
Pocket Road Homeowners Association
Rancho Murieta Community Services District
Regional Water Authority
Rio Linda/Elverta Community Water District
Sacramento Area Flood Control Agency
Sacramento Area Water Works Association
Sacramento County Alliance of Neighborhoods
Sacramento County Farm Bureau
Sacramento County Taxpayers League
Sacramento Metropolitan Chamber of Commerce
Sacramento Municipal Utility District
Sacramento Regional Transit
Sacramento Water Forum
San Joaquin County Farm Bureau
San Joaquin County Flood Control & Water Conservation District
San Joaquin Groundwater Banking Authority
San Juan Water District
Save the American River Association
Sierra Club
South Land Park Neighborhood Association
South Pocket Homeowners Association
South Sacramento/Greenhaven Chamber of Commerce
State Water Resources Control Board
Nature Conservancy
Upper Mokelumne River Authority
Urban Creeks Council of Sacramento
U.S. Army Corps of Engineers
U.S. Congresswoman Ellen Tauscher
U.S. Corps of Engineers
U.S. Environmental Protection Agency
U.S. Fish & Wildlife Service
U.S. Senator Barbara Boxer
U.S. Senator Diane Feinstein

Appendix F

Wet Year/Groundwater Storage Conceptual Alternative—Programmatic Evaluation

Technical Memorandum

Freeport Regional Water Authority

Date: May 28, 2003

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Reference: 068.0020

Subject: **Wet Year/Groundwater Storage Conceptual Alternative – Programmatic Evaluation**

Introduction

This document evaluates the range of technical, environmental, and institutional effects associated with utilizing a Wet Year/Groundwater Storage Conceptual Alternative to minimize dry year diversions of surface water from the Freeport Intake for the Freeport Regional Water Authority (FRWA). This effort was initiated by FRWA in response to comments during the scoping process for the Freeport Regional Water Project (FRWP) EIR/EIS, as well as a logical extension of some programmatic exploration of wet year diversions and groundwater storage elements of previous EIR/EIS processes within which EBMUD has investigated export of its entitled surface water to meet dry year demands. The primary purpose of this exercise is to explore the hypothesis that a modified FRWP that includes wet year diversions and groundwater storage would result in reductions to the effects anticipated downstream of Freeport. This document will bracket the potential effects of this concept, in order to evaluate this alternative at a programmatic level in the FRWA environmental document. The following parameters are the primary indicators used to evaluate potential effects:

- Tracy pumping;
- North of Delta Central Valley (CVP) Project storage;
- Oroville Reservoir storage;
- CVP and State Water Project deliveries; and
- Delta salinity (as measured by the position of the X2 location in kilometers).

These parameters provide a separate measure of a project's effect on the Bay-Delta environment or on the water storage and conveyance system of the CVP and the SWP and the respective customers of each. This document identifies four potential scenarios that reasonably test the hypothesis that a modified alternative would result in significant downstream benefits that might justify the additional financial investment in additional storage and conveyance (over and above the Base Project).

The Base Project would divert surface water from the Sacramento River at Freeport, California, and convey the surface water to the proposed SCWA water treatment facility in Sacramento County, and to EBMUD at the Folsom South Canal (FSC). The Base Project would deliver water to EBMUD during dry

years and to SCWA during all years, though SCWA would receive more water during wet years than dry years. The intent of this evaluation is to investigate how a change in the planned FRWA yearly diversions from the Freeport Intake, primarily during wet years, instead of diverting water primarily during dry years, would affect project parameters such as cost, schedule, downstream delta outflow, water quality, and downstream deliveries, groundwater level fluctuations and other environmental measures. The stored water or natural groundwater would be delivered to FRWA for use by EBMUD and SCWA primarily during dry years, reducing the FRWA dependence on dry year diversions. The impact of this operational approach would be to increase natural flows to the Delta during dry years, potentially increasing water availability and improving water quality, while potentially providing benefits to the Sacramento groundwater basin(s).

The Base Project and Wet Year/Groundwater Storage Alternative are intended, within the context of the Water Forum, to meet the long-term surface and groundwater needs in Sacramento County's Zone 40 and EBMUD's dry year (drought-related) needs through the long-standing contract for water from the American River. One of the key project objectives for evaluating the feasibility of each candidate scenario is that the scenario cannot delay project implementation, since this project is a critical water supply source for both SCWA and EBMUD.

This document does not evaluate other types of storage, such as construction of a reservoir, construction of storage facilities near EBMUD's service area, or modification of the surface water diversion point to facilitate storage elsewhere. These projects are identified as alternatives in the EIR document, and the impacts of those are summarized there. This document also does not evaluate the storage of Mokelumne River water in upcountry groundwater basins such as the Galt Basin. The institutional constraints analyzed for storing Sacramento River water in the Galt Basin (resulting in at least a 10-year delay in project implementation, making the alternative infeasible as a stand alone project) would be similar for storing Mokelumne River water in the Galt Basin for subsequent delivery back to EBMUD.

This document also does not evaluate the technical and operational issues of exchange and recovery of American River water in the North Basin for EBMUD use in dry years, although the institutional analysis herein does address this potential alternative and finds it infeasible for full scale implementation in the short-term. The Sacramento Groundwater Authority (SGA), which governs the North Basin, does not establish groundwater baseline usages or enforceable banking provisions, and allocation of groundwater to non-SGA signatories could not be reliably accomplished at this time (would have to be acceptable to all 15 signatories). These factors would not necessarily limit EBMUD or SCWA's participation in the water bank, but would constrain FRWA from relying exclusively on banking in the North Area to meet total project needs for either EBMUD or SCWA.

The analysis of potential effects on the downstream Delta environment was evaluated in two steps. The first evaluated modifications to the EBMUD diversion schedule. Since EBMUD wet year diversions appeared to provide measurable benefits, the second step incorporated modifications to the SCWA and EBMUD diversion schedules. This stepwise analysis was performed to analyze the impacts of changing the EBMUD diversions on the SCWA ability to acquire "Other" or "Excess" water from the FRWA intake (in other words, to ensure that changing the timing of diversions would not adversely affect the availability of surface water to EBMUD and SCWA and detract from the project purpose).

This document evaluates the change in the EBMUD diversion schedule from a predominantly dry year[1] diversion to a predominantly wet year[2] diversion (Scenarios 1 and 2), and determines the potential benefits and impacts associated with implementation of this change in the Freeport project. Scenario 3 was developed to evaluate the overall effects of changing both the SCWA and EBMUD diversion schedules to emphasize wet year diversions. Scenario 4 was developed to evaluate the change in effects of the Freeport Project if SCWA only were to change its diversions to predominantly wet year diversions with injection and storage in the Central Basin.

Document Organization

This document is organized as follows:

- Introduction
- Document Organization
- Groundwater Basins for Potential Storage and Recovery
- Scenario Identification
  - Scenario 1 – Wet Year Groundwater storage for EBMUD (Injection in Central Basin)
  - Scenario 2 – Wet Year Groundwater Storage for EBMUD (Percolation/In-Lieu in Galt Basin)
  - Scenario 3 - Wet Year Groundwater Storage for EBMUD and SCWA (Percolation/In-Lieu in Galt Basin and Injection in Central Basin)
  - Scenario 4 - Wet Year Groundwater Storage for SCWA (Injection in Central Basin)
- Evaluation of Alternative Conceptual Scenarios
  - Availability of Water for Extraction
  - Extracted Water Quality
  - Impacts to Groundwater Basins
  - Impacts to Other Downstream Surface Water Users
  - Environmental Issues
  - Institutional Issues
  - Program Timing
- References
- Acronym List

Appendix

- Potential Recharge and Banking Locations
  - North Basin
  - Central Basin
  - Galt Basin
- Regulation of Groundwater Storage and Recovery
  - Regional Water Quality Control Board
  - State Water Resources Control Board
  - Department of Water Resources
  - Department of Health Services
  - Other Agency Jurisdiction
- Scenario Evaluation
  - Scenario 1 – Wet Year Groundwater storage for EBMUD (Injection in Central Basin)

[1] Dry year is defined by a rating of 4 or 5 in the Sacramento River 40-30-30 index.
[2] Wet year is defined by a rating of 1 or 2 in the Sacramento River 40-30-30 index.

- Scenario 2 – Wet Year Groundwater Storage for EBMUD (Percolation/In-Lieu in Galt Basin)
- Scenario 3 - Wet Year Groundwater Storage for EBMUD and SCWA (Percolation/In-Lieu in Galt Basin and Conjunctive Use in Central Basin)
- Scenario 4 - Wet Year Groundwater Storage for SCWA (Conjunctive Use in Central Basin)

Groundwater Basins for Potential Storage and Recovery

There are three groundwater basins in Sacramento County being considered within the context of the Water Forum for the long-term storage of surface water identified in this alternative: the North, Central, and Galt Basins. A brief description of the available information for each basin is summarized below. Each may represent a technically effective mechanism to store treated surface water locally during wet years. A map of each basin is presented in Figure 1. For the purposes of this Technical Memorandum, the groundwater basins limits are as defined by the Water Forum in its 2001 Annual Report. Table 1 quantifies the sustainable yield, capacity, and key features of each basin. Note: compare to the annual injection and withdrawals we are proposing for EBMUD and SCWA.

Table 1: Summary of Groundwater Basin Characteristics

Basin	Sustainable Yield[1] (AFY)	Volume[2] (AF)
North Basin	131,000	1,500,000[3]
Central Basin	273,000	4,816,000
Galt Basin	115,000	6,000,000

1: Based on information in the Water Forum Agreement, 2001
2: Based on DWR Bulletin 118 estimates. Note that the Water Forum defines the groundwater basins limits within Sacramento County, but the basins extend outside of Sacramento County in the DWR definition.
3: Estimated by MWH in the ARBCA Evaluation as "Available Storage". Total Basin Volume would be much larger. Taking into account the physical characteristics of the basin and potential contamination, the available "exercisable" storage is 0.5 Million AF. Current groundwater demand among SGA members in the basin is about 100,000 AF/year.

Additional technical information about each basin and the rationale for identifying the Scenarios identified in the following section is summarized in the appendix.

Figure 1: Map of Sacramento County Basins

Scenario Identification

Each Scenario identified in this document builds upon the Base Project, which is the preferred alternative of the EIR/EIS. This project would deliver water from Freeport during all years to SCWA, and during dry years to EBMUD. This project includes all of the facilities required to deliver the surface water, including a Sacramento River intake, conveyance facilities to the SCWA treatment plant and Folsom South Canal, and EBMUD treatment facilities.

For the development of each Scenario, it was desired to utilize the same water diversion capacity of 185 MGD from the Freeport intake but modify diversions and identify the facilities to utilize the water under the new schedule. In each Scenario, it was assumed that only 90% of the water stored in the groundwater basin can be extracted. This difference accounts for the technical constraints that some of the water recharged (injected and percolated) cannot be recovered and is no longer available for extraction. Artificial recharge can result in decreased natural recharge or increased basin outflow.

In addition, this constraint relative to EBMUD has additional importance. Since EBMUD is not a local purveyor, EBMUD can only extract the same volume of surface water, minus losses, in order to reduce the chances of injury to other groundwater users in the Basin. Water Code 1220 also prohibits the export of groundwater from the combined Sacramento and Delta-Central Sierra Basins, as defined by DWR

Bulletin 160-74, unless the pumping complies with a groundwater management plan adopted by the County, or portion of the County, that overlies the groundwater basin. The boundaries of these protected basins include Sacramento County (including North, Central and Galt areas). Thus, pursuant to the Water Code, unless there is a voter-approved AB 3030 plan, which provides for the export of groundwater (there is not), EBMUD would be limited to using only an equivalent amount of surface water that was stored in the groundwater basin, minus losses.

Four potential Wet Year/Groundwater Storage Scenarios were identified in this document. Each Scenario is summarized below.

Scenario 1 – Wet Year Groundwater Storage for EBMUD (Injection in Central Basin)

The workplan identified the concept of surface water recharge from the Freeport intake in all three groundwater basins. For the development of this document, the initial thrust for scenario identification was to limit any modifications only to the EBMUD portion of the surface water diversions, and determine their impact on the availability of surface water supplies to SCWA. This hypothesis was based on the belief that modifications to the EBMUD diversion schedule may negatively affect the ability of SCWA to obtain "Excess" or "Other" water from the Freeport Intake. Thus, it was decided to model modifications to the EBMUD diversions and opportunities for recharge first, then to model the combined modifications to EBMUD and SCWA diversions to ensure adequate water availability.

This scenario would utilize the same facilities as identified in the Base Project, but add additional infrastructure to store surface water from Freeport in the Central Basin. SCWA would divert, treat, and store surface water from Freeport in the same manner as the Base Project. EBMUD would divert surface water from Freeport during wet and above normal years, and not divert during dry, below normal or normal years. This EBMUD diversion would be conveyed to the SCWA Water Treatment plant and treated to a level sufficient for injection into the Central Basin. The injection would be accomplished with a series of injection wells in the eastern part of Zone 40, generally between the Folsom South Canal and Bradshaw Road. During dry or critical years, water would be extracted from wells down gradient (south and west) of the injection wells, and conveyed to EBMUD through the Folsom South Canal, which would ultimately deliver water to the Mokelumne Aqueduct, similar to the Base Project.

Scenario 2 – Wet Year Groundwater Storage for EBMUD (Percolation/In-Lieu in Galt Basin)

Scenario 2 contemplates the diversion of EBMUD water in wet and above normal years from the Sacramento River at Freeport and the diversion of SCWA water at Freeport under its Base Project diversion schedule. The SCWA water would be treated and distributed as contemplated within the Base Project. The EBMUD water would be pumped directly to the FSC and conveyed through the FSC to the Galt Area for in lieu and direct recharge. The water would be pumped from the FSC through a distribution system and 80% of the water would be used on farms throughout the Omochumne-Hartnell Irrigation District, Clay ID and Galt ID. The balance (20%) would be recharged through in percolation ponds along the Cosumnes River. During dry years, the stored and in-lieu water would be extracted from the groundwater basin from wells near the farms and percolation ponds receiving the wet/above normal year surface water. The high quality, extracted surface water is conveyed through the FSC to the Mokelumne Aqueducts with the treatment and conveyance facilities of the Base Project.

Scenario 3 – Wet Year Groundwater Storage for EBMUD and SCWA (Percolation/In-Lieu in Galt Basin and Injection in Central Basin)

Scenario 3 builds upon Scenario 2, and includes the diversion of both EBMUD and SCWA water in wet and above normal years from the Sacramento River at Freeport. The SCWA water would be treated at the SCWA WTP and distributed throughout its service area in Zone 40 to demand points and injection wells near existing and planned extraction wells. During dry years, below normal, and normal years, SCWA demands in Zone 40 would be met through the increased use of groundwater and stored surface water and reduced use of surface water diverted at Freeport. EBMUD water would be conveyed as described for Scenario 2 to the FSC for conveyance to the Galt Area for in lieu recharge and percolation. Subsequent extraction would be managed as proposed for Scenario 2 as well.

Scenario 4 – Wet Year Groundwater Storage for SCWA (Injection in Central Basin)

Scenario 4 is the same as Scenario 3, except that it removes the Wet Year/Groundwater Storage facilities for EBMUD, and changes the EBMUD diversion schedule to match the Base Project. All SCWA deliveries and operations would remain the same as Scenario 3.

Evaluation of Alternative Conceptual Scenarios

This section will focus on the technical, environmental, and institutional issues associated with the development of Scenarios 1-4. If there are specific negative effects that constitute an insurmountable fatal flow, they are identified as such. The benefits of each Scenario will be quantified to the extent known. The specific issues evaluated in this section include:

- Availability of water for extraction/extracted water quality
- Impacts to groundwater basin
- Impacts to downstream water users
- Environmental issues
- Institutional issues
- Program timing

Each of these issues is further discussed in this section.

AVAILABILITY OF WATER FOR EXTRACTION/ EXTRACTED WATER QUALITY

Both the Base Project and all of the scenarios identified in this document make water available during dry years. One potential advantage of utilizing a predominantly wet year diversion schedule is the immediate ability of the SCWA or EBMUD to extract water from the ground, and thereby the reduced dependence on when monthly flows are available at the Freeport Intake. However, CVP releases could be scheduled based on a known diversion pattern to accommodate EBMUD water supply needs. Scenarios 3 and 4 would result in the most water available for extraction, since a large portion of water used by SCWA would be stored in the groundwater basin prior to use. However, water stored in the groundwater basin may not be resident where it is recharged. IGSM modeling showed that storage of water in the quantities required to eliminate dry year diversions results in water migrating outside of the area where it is applied. To minimize this effect, injection wells would need to be widely distributed throughout Zone 40.

Scenario 1 has the least groundwater available for extraction, since IGSM modeling showed that water does not remain resident in the injection field in the Central Basin. Scenario 2 appears to have adequate levels of water availability.

There is no feasible method FRWA can utilize to implement a long-term water supply storage project and ensure that the water recharged is the water extracted. The scenarios, as currently modeled, show that some water recharged into the basin may have to be stored in the ground for over twenty years before extraction. The long duration between recharge and extraction limits opportunities to locate pockets of recharge water that FRWA can manage and/or operate. Furthermore, the quantity of water required for recharge is large, and the water does not necessarily remain resident in the basin. Losses must also be accounted for. Additionally, there are other pumpers utilizing the same basin who could pump the recharged water. It is likely that the groundwater pumped will be of a poorer quality than the surface water added to the groundwater basin, though the water quality in the Central and Galt Basins is generally of good quality. No uniform expectation of extracted water quality can be identified at this time for any of the Scenarios.

IMPACTS TO GROUNDWATER BASINS

The operation of Scenario 1 seriously affects pumpers near extraction wells, and draws down groundwater levels throughout most the Central Basin. Injection results in surcharging, and raises the water table near the injection site by approximately 50 feet after one year of injection. Extraction during a dry year typically lowers the water table by approximately 55 feet. Multiple years of extraction in sequence lowers the water table well below baseline levels, due to the lack of residency of the injected water. Water injected into the groundwater basin and stored for many years tends to flow out of the injected area. During a seven year drought at the end of the IGSM model simulation, the water table is drawn down by over 70 feet. The impact to the Groundwater Basin is a fatal flaw for this Scenario.

Scenario 2 IGSM modeling results showed widespread raising of the water table in the Galt Basin by between 0-10 feet, but localized drawdowns in the vicinities of the extraction wells, especially during dry years. The extent of drawdown varies based on the number of extraction wells, but can range from 20-30 feet during multiple sequential dry years if using 5-15 extraction wells.

The operation of Scenarios 3 and 4 will result in significant rising of groundwater elevations during most wet years in the Central Basin (when using 1990 groundwater demands in the basin), due to the introduction of additional surface water supplies exceeding average demands. During extended dry years when using the 1990 condition, the water table remains above the baseline. Modeling of Scenario 3 for the 1990 condition also shows significant increases of the water table throughout the basin, and the elimination of depressions in the groundwater table. If basin demands were modeled based on the projected 2030 buildout condition, it is expected that a flat to slight increase in the water table would be seen in the Central Basin. However, during periods of extended dry years, it is expected that some drawdown of the water table would occur. Modeling at the 2030 condition was not immediately available, since those demand conditions have not been finalized. Central Basin groundwater demands in the year 2030 are expected to be between 90,000 – 100,000 AFY, not including demands associated with remediation of the Aerojet and Kiefer sites.

IMPACTS TO OTHER DOWNSTREAM SURFACE WATER USERS

Table 2 presents the modeling results for each of the Scenarios, the Base Project, and the No Action Alternative. All of the data is presented in relation to the No Action Alternative, which helps to measure table the net impacts of each Scenario to the condition where no project is constructed.

In terms of the net changes to the availability of water to downstream water users, and the overall system storage in the CVP and SWP systems, the four scenarios evaluated in this document do not vary considerably from each other, the Base Project, or from the No Action Alternative. This is, in part, due to the magnitude of water utilized in each alternative compared to the magnitude of water available in the CVP and SWP. A more detailed description of each difference is further described below.

While the effects on Tracy Pumping of the Base Project are small (less than 0.3 % in all years and 0.7% in dry years), the Wet Year Diversion and Groundwater Storage Scenarios appear to further reduce these effects to near the No Action Alternative.

The North of Delta CVP Storage simulations show that modifications to the EBMUD diversions improve this parameter more than modifications to SCWA diversions. Scenario 4 showed virtually no change (0.3%) in North of Delta CVP storage from the Base project. Similarly, modifications to EBMUD diversions appear to improve September storage quantities in the Oroville Reservoir more than modifications to SCWA diversions. Modifying both diversions as in Scenario 3 brought these storage values very close to the No Action Alternative.

CVP Deliveries to users North of the Delta are largely unaffected by any of the Scenarios or the Base Project. A long-term average decrease compared with the No Action Alternative of 7 TAF/yr was witnessed for the Base Project during dry years, but no differences of more than 2 TAF/yr was observed for either all years or the dry years for any of the Scenarios. Deliveries to South of the Delta Users showed that the Scenarios varied only slightly from each other, with values similar to the No Action Alternative identified for Scenario 3, and slight modifications from the No Action alternative for Scenarios 1, 2, and 4. SWP Total Deliveries reflected similar results to the CVP deliveries to South of the Delta users.

The maximum and minimum change to the X2 position over the course of the entire simulation period was identical to the No Action Alternative for all diversion scenarios. Some monthly variations of up to 0.43 km and -1.25 km were shown for Scenarios 1 & 2, but these were compensated for by other counter modifications during other months.

In conclusion, the effects of Wet Year diversion and groundwater storage scenarios on the Delta and its users are very small (long-term 0.1 to 0.5% enhancement effect compared with the Base Project, depending upon the parameter and the scenario; 0.3 to 2.4% enhancement effect during the dry period examined). The parameter affected the greatest was average Oroville Storage during the dry period examined, especially when utilitizing Scenario 3. In general, the Scenarios that divert more water during wet years show slight increases in water storage or water availability compared to the Base Project, and bring the overall project closer to the No Action alternative. The positive effects of wet year diversion and groundwater storage relative to the Base Project are quite limited relative to the extensive facilities and costs required to implement such alternative projects.

Table 2: Comparison of Downstream Delta Effects of Wet Year/Groundwater Storage, Base Project, and No Action Scenarios

Criterion	No Action Alternative[7]		Average Values by Diversion Scenario (Difference between No Action Alternative and Scenarios expressed as a percentage)															
			Base Project				EBMUD only (Scenarios 1 & 2)				EBMUD and SCWA (Scenario 3)				SCWA Only (Scenario 4)			
Water Year	All Years[a]	Dry Period[1]	All Years		Dry Period[1]		All Years		Dry Period[1]		All Years		Dry Period[1]		All Years		Dry Period[1]	
Tracy Pumping (TAF/yr)[2]	2,256	1,662	2,249	-0.3%	1,651	-0.7%	2,253	-0.2%	1,654	-0.5%	2,255	-0.1%	1,662	0.0%	2,251	-0.2%	1,655	-0.4%
North of Delta CVP Storage (TAF)[3]	4,547	2,554	4,523	-0.5%	2,511	-1.7%	4,537	-0.2%	2,524	-1.2%	4,539	-0.2%	2,559	0.2%	4,526	-0.5%	2,530	-0.9%
Oroville Storage (TAF)[4]	2,072	1,506	2,053	-0.9%	1,469	-2.5%	2,062	-0.5%	1,480	-1.7%	2,063	-0.4%	1,505	-0.1%	2,058	-0.7%	1,480	-1.7%
CVP Total Deliveries – North (TAF/yr)[5]	2,199	1,959	2,199	0.0%	1,952	-0.3%	2,200	0.0%	1,956	-0.1%	2,200	0.1%	1,958	0.0%	2,199	0.0%	1,957	-0.1%
CVP Total Deliveries – South (TAF/yr)[5]	2,554	1,695	2,548	-0.2%	1,683	-0.7%	2,553	0.0%	1,689	-0.3%	2,554	0.0%	1,695	0.0%	2,549	-0.2%	1,686	-0.5%
SWP Total Deliveries (TAF/yr)[5]	2,980	1,946	2,973	-0.2%	1,917	-1.5%	2,975	-0.2%	1,927	-1.0%	2,978	-0.1%	1,950	0.2%	2,976	-0.1%	1,932	-0.7%
Maximum and minimum change in X2 position (km)[6]	89.7 km – Oct 1932		89.7 km (0%) – Oct 1932				89.7 km (0%) – Oct 1932				89.7 km (0%) – Oct 1932				89.7 km (0%) – Oct 1932			
	42.0 km – Apr 1983		42.0 km (0%) – Apr 1983				42.0 km (0%) – Apr 1983				42.0 km (0%) – Apr 1983				42.0 km (0%) – Apr 1983			

Notes:
a. Modeled period was the historical runoff from WY 1922-1994. Average value during that period listed.
1: Dry period values reported are for WY 1928-1924. Average value during that period listed.
2: Tracy Pumping is measured at the Tracy Pumping Plant.
3: Based on the sum of storage within the Trinity, Shasta, and Folsom Reservoirs during September.
4: Average September Oroville storage during the 73-year simulation.
5: Total Deliveries during water year (October – September)
6: X2 is measured as the distance away from the Golden Gate Bridge. It was not assumed to be accurate to a level of detail less than 0.5 km. The values presented here are the maximum and minimum distances for the duration of the simulation.
7: Percentage differences are reflected as the difference between the Scenario and the No Action Alternative
Source data provided by CH2M Hill, 2002 and 2003. All modeling is based on the 2001 hydrology

Abbreviations:
TAF: Thousand Acre-feet
M&I: Refers to Municipal and Industrial deliveries of CVP water
Ag: Refers to Agricultural deliveries of CVP water
WY: Water year

ENVIRONMENTAL ISSUES

One of the major environmental issues in the Central or Galt Basin is the ephemeral nature of Cosumnes River flows. Cosumnes River is the primary river draining the local watersheds, and has historically provided habitat and passage for salmon. The upper aquifer was historically connected to the Cosumnes River, and helped provide perennial flows to the reach roughly located between Highway 99 and approximately the FSC. However, a variety of issues has recently resulted in a 15-mile gap between the downstream reaches of the River and the spawning areas in the upper reaches. The Consumes River division of The Nature Conservancy is attempting to purchase water supplies from others to provide water to the Cosumnes River during the fall salmon run to wet the channel, and provide passage. Projects that further this goal would provide an environmental benefit to the local habitat.

Attempts were made to model the impact of the projects on Cosumnes River flows. However, the IGSM model does not necessarily have the level of precision required to predict changes in stream flow, but is better suited to compare changes in the depth to the local groundwater aquifer due to a change in project conditions. IGSM modeling showed that both Scenarios 1 and 2 do not affect the ability to the Cosumnes River to provide fish passage. The local aquifer is still disconnected from the river streambed. Scenarios 3 and 4 would result in benefits to the local water table elevation near the Cosumnes River, but no determination could be made if these benefits would be significant enough to provide passage in the 15-mile gap at the 2020 level of development.

In summary, there are no major environmental issues independent of those addressed in the other sections. These issues, which are potentially associated with groundwater levels and downstream water user effects, are addressed in the other sections.

INSTITUTIONAL ISSUES

This institutional analysis addresses the feasibility of the Wet Year Diversion and the Groundwater Storage aspects of the alternative Scenarios. First, relative to wet year diversions, the EBMUD Wet Year diversion is not yet feasible without an amendment of EBMUD's contract with the Bureau of Reclamation. This is considered feasible, but would affect the timing of implementation of the project, and could result in delays to delivery of surface water to FRWA by 2008, a key project objective. Second, the focus of this Institutional Analysis on the groundwater storage component. EBMUD has attempted to implement similar projects in the past, and lessons learned from those efforts have been applied to potential projects in the Sacramento County area. A review of the institutional analysis revealed several institutional issues that would need to be answered prior to implementation of any Wet Year Groundwater Storage Alternative. These issues include:

- Is there a legislative or legal framework for groundwater storage and recovery of stored groundwater?
- Can a groundwater bank be implemented?
- What is the level of control of groundwater overpumping by overlying agencies and pumpers?
- Does EBMUD have the authority to export banked water out of Sacramento County?
- Is there a strong local authority with clear boundaries and sufficient powers to partner with FRWA?
- Does local/regional consensus exist for implementation of a groundwater storage project?
- What is the ability to assure protection of existing groundwater users?

A discussion of these questions is contained in Table 3. This institutional analysis table contrasts the feasibility of the Base Project with a possible groundwater storage project in the North, Central and Galt Basins with an eye towards the scenarios identified.

Table 3: Institutional Analysis – Degree of Feasibility for FRWA Base Project and Alternative Concepts for Groundwater Storage

Issue	Base Project	FRWA Project w/ Wet Year Diversions from Sac River and Groundwater Storage for Deliveries in Dry Years		
		North Area Banking	Central Area Injection/Extraction	Galt Area In Lieu Recharge/Percolation and Extraction
1) Legislative/Legal Framework for Groundwater Storage and Recovery of Stored Groundwater	**N/A -** Zone 40 Master Plan contemplates no artificial recharge. Only in-lieu banking consistent with the CSCGF.	**YES -** Appendix 66 of State Water Code Allows it in Sacramento County	**YES -** Appendix 66 of Water Code Allows it in Sacramento County	**YES -** Appendix 66 of State Water Code Allows it in Sac County
2) Implementability of a Groundwater Bank	**YES** – Zone 40 Master Plan contemplates in-lieu recharge consistent with Water Forum Solution	**YES** – Pilot water banking projects demonstrate feasibility of establishing long-term project	**YES** – Conjunctive Use of GW Basin in Zone 40 Contemplated in Water Forum Solution; Banking and Exchange (B/E) not explicitly stated; CSCGF is vehicle to address B/E in Central Basin	**Not Yet Clear** – JPA formed, but not bank. Pilot projects needed. Will take 3 years to determine.
3) Control of Groundwater Overpumping by Overlying Agencies and Pumpers	**YES (incomplete)** – SCWA has legal authority to establish regulatory controls over pumping in all basins, including Zone 40 area, and is exercising that authority through the Water Forum.	**YES (partial)** – Although basin not adjudicated, Sacramento Groundwater Authority (SGA) has some authority, but expressly provided that it will control only with economic incentives.	**YES (incomplete)** – Although basin not adjudicated, SCWA has clear authority in Zone 40, and is exercising that authority through the Water Forum. EBMUD's stored water could be protected if there were an allocation of groundwater storage to existing users and a mechanism for enforcing those limitations (not yet in place).	**YES (incomplete)** – Groundwater Management Plan established at a preliminary level. Full Basin Management Plan not yet in place. SCWA has authority but not delegated that authority.
4) Ability to Export Stored Groundwater out of Sac County to EBMUD	N/A	**Not Yet Clear** – AB 3030 Plan not yet in place, but SB 1938 plan projected by end of year, 2003. No known political obstacles. Pilot to export not yet done. Lack of actual groundwater export and use of water trading may improve feasibility. Two to five years to establish necessary additional framework.	**NO** – No AB 3030 Plan in place. Political support for exports uncertain. Central Groundwater Forum started. County Ordinance passed in 2000, Title 3, Chapter 3.40.090 authorizes Director of Water Resources to issue permit to export groundwater and surface water. Probably will take 5 to 10 years to establish necessary framework to implement groundwater export.	**NO** – Groundwater Management Plan established at preliminary level, but no AB 3030 specific authority for exports. Collaborative stakeholder process not yet begun to extent contemplated in Water Forum. Probably will take 5 to 10 years to establish necessary framework to implement groundwater export.
5) Presence of Strong Local Authority with Clear Boundaries and Sufficient Powers to Partner	N/A	**Not Likely –** Can partner but does not yet have enforceable program acceptable internally to SGA to make partnering likely. Can occur in future, but will take approximately 1.5 years or more.	**Partial YES** – SCWA is strong local authority, has established service area. Has powers to partner. Deferring to CSCGF process for comprehensive plan for governance. FRWA not yet a formal stakeholder.	**Not Yet Clear** – JPA formed. Partially staffed. Clear boundaries. No collaborative process yet started.
6) Local/Regional Consensus that GW Storage Project is Desirable	**YES** – Consistent with Water Forum solution	**YES –** The North Basin already has a banking program underway.	**NO** – Not yet explored within County. Due to large number of farmers and other institutions affected, probably will take 1 to 2 years to determine with full time vetting; governance establishment through the Water Forum CSCGF will take an additional 2 to 5 years.	**NO** – Preliminary exploration in 1998. Not yet explored within community. Due to large number of farmers within 3 districts, probably 1 to 2 years with full time vetting. Collaborative stakeholder process still needed.
7) Ability to Avoid Potential Injury to Existing GW Users	**YES** – Zone 40 Master Plan developed to accomplish this objective	**Not Clear** – Basin is relatively small (131,000 AF yield, 500,000 AF bankable volume); may not be sufficient to support entire FRWA project w/o impacts.	**Not Clear –** Basin may be large enough to bank SCWA water during wet year diversions, but detailed modeling needed to verify. Basin not large enough to bank both agencies water through injection and extraction without large water level fluctuations (50 feet or more).	**Not Clear –** Basin may be large enough to bank EBMUD water during wet year diversions, but detailed modeling needed to verify.

PROGRAM TIMING

Relative to timing for project implementation, an assessment of the status of the North Area Groundwater Bank is instructive relative to the progress needed in the Central and Galt Areas to create a Feasible Alternative to carry into development and detailed, project specific environmental (CEQA/NEPA) review, as shown in Table 4.

Table 4: Comparison of Status of Groundwater Storage in North Area with Central and Galt Areas

	North Area	Central Area	Galt Area
Organizational Infrastructure	Formed SGA to manage Basin; formed RWA to provide regional forum for project development. Have full time Executive Director and Consultants providing support.	SCWA is in place, but not organized for banking yet. SCWA is participating in CSCGF process to develop a basin management plan.	JPA of Omochumne-Hartnell, Galt ID and Clay ID; no full time staff or consultants working for JPA. WFA contemplates a Galt Basin management plan, but it has not yet begun.
Delivery Infrastructure	Pipeline in place to deliver American River water for injection.	None. Base project would provide delivery pipelines and treatment to enable banking.	None. Base project would provide delivery pipelines to enable banking
Pilot Projects	Completed two pilot projects; SAFCA with USBR and Storage for the Environmental Water Account	None. Some feasibility investigations done.	None
Funding Status	Raised $2 Million; Obtained $22.5M construction grant for facilities	None for groundwater bank.	None

The stakeholders have taken three to four years to develop the institutional basis for the North Area groundwater storage program. One of those years was not fully productive due to the loss of an Executive Director and a delay in filling the position. It is estimated that it will take the North area another five years to establish a long-term program that could accommodate outside participants. For the Central Area, because the Water Forum has just begun the collaborative process through the Central Sacramento County Groundwater Forum it is estimated that it will take 1 and ½ years to reach the end of the negotiation phase, and another seven years to have an established plan and long-term program for a total of 8 and ½ years. For the Galt Area, it is estimated that is would take about five years within a process like the Groundwater Forum Process to progress to where the North Area was when they formed the organizational infrastructure and began to implement the banking program, and another five years to get to an established plan and long-term program, for a total of ten years.

Once a plan and program are in place, a project could be developed and a public/environmental documentation process, such as the one FRWA is currently engaged in, could begin. To meet the project objectives of delivering water supplies to SCWA and EBMUD by 2008, the wet year/groundwater storage alternative cannot be implemented in place of the Base Project. Rather, implementing the Base Project enables the future implementation of such a plan.

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Acronym List

Acronym	Name
AF	Acre Feet
CALSIM	Surface Water Operational Model
CEQA	California Environmental Quality Act
CSCGF	Central Sacramento County Groundwater Forum
CVP	Central Valley Project
DHS	Department of Health Services
DWR	Department of Water Resources
EBMUD	East Bay Municipal Utilities District
FRWA	Freeport Regional Water Authority
FRWP	Freeport Regional Water Project
FSC	Folsom South Canal
IGSM	Integrated Groundwater/Surface Water Model
JPA	Joint Powers Authority
M & I	Municipal and Industrial
MAF	Millions of Acre Feet
NEPA	National Environmental Protection Act
OHWD	Omochumne-Hartnell Water District
RWA	Regional Water Authority
RWQCB	Regional Water Quality Control Board
SCWA	Sacramento County Water Authority
SGA	Sacramento Groundwater Authority
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	Thousands of Acre Feet

Appendix

FREEPORT REGIONAL WATER AUTHORITY

This appendix provides documentation supporting the technical memorandum. This appendix is intended to provide additional details about the technical memorandum, but not to duplicate or replace that document.

Potential Recharge and Banking Locations

Sacramento County has three major groundwater basins, commonly referred to as the North, Central, and Galt Basins. This section identifies major characteristics of each basin, and identifies the logic justifying the selection of the Scenarios.

NORTH BASIN

Within Sacramento County, the North Basin is generally bounded by the American River to the South, and the Sierra Nevada Foothills to the East, the Sacramento River to the North, and the county line to the North. The DWR characterizes the groundwater quality as marginal in some portions of this basin. Generally in the southern part of the basin, the groundwater is generally of good quality, with moderate mineral content and low disinfection by-product concentrations (DWR, September 2001), though some areas have elevated levels of minerals.

The North Basin has three major known groundwater contamination sites: the McClellan Air Force Base, the United Pacific Roseville Rail Yard, and the Aerojet Superfund site. The Aerojet site is located in the Central Basin, but its contamination plume extends into the North Basin.

Historical extractions from this basin have greatly exceeded natural and artificial recharge. DWR estimated the natural recharge to be 83,800 AFY, and artificial recharge of 29,800 AFY. Annual extraction was estimated to be 399,000 AFY for urban and agricultural uses (DWR, September 2001). The Water Forum has estimated the sustainable yield of this of the North Basin to be 131,000 AFY. The North Basin has existing groundwater banking programs in place with the Placer County Water Agency and two local water districts. The quantity of water banked in the North Basin through this artificial recharge totals 29,800 AFY (DWR, September 2001). The bank appears to have sufficient capacity to meet some of FRWA needs. However, on an annual basis, the Sacramento Groundwater Authority (SGA) has indicated it could sell available water supplies to FRWA during a typical year (Personal Communication, EBMUD, November 2002). During a dry year, the peak demands of SCWA and EBMUD are 80,000 AFY and 55,000 AFY, respectively.

The Sacramento Groundwater Authority (SGA) is a joint powers authority created to manage and protect the North Basin, and is comprised of sixteen public and private water agencies, including the City of Sacramento, and the Sacramento County Water Agency.

The most likely mechanism to feasibly deliver water to the North Basin would be to divert CVP water and Excess water at Folsom Dam into the Cooperative Transmission pipeline in wet years for banking in wet years. In dry years, the SGA would need to forego their surface water diversions and rely on groundwater. The foregone surface water would then be diverted at Freeport by FRWA. SGA would change a handling charge for diverting, banking, and shifting to groundwater use. This also would require amendments to the EBMUD and SCWA CVP contracts with USBR, which would delay project implementation. Water trading was also not considered with the Placer County Water Agency or another

American River diverter at this time due to the significant institutional hurdles that would need to be overcome compared to the Base Project.

As a result, project ideas were limited to water diverted at the Freeport Intake.

Even if the institutional issues could be overcome by using existing facilities to divert and transport American River water from Folsom to the North Basin, other legal and institutional issues would have to be overcome, as follows:

- The focus of the institution responsible for groundwater management and developing a banking project, the SGA, has been on developing a bank to primarily meet the needs of the purveyors north of the American River. The SGA has implemented some preliminary pilot programs but has yet to grapple with fundamental institutional issues that must be resolved before implementing a long-term groundwater banking program. For instance, before an effective long-term program can be established, a baseline pumping allowance must be established for each of the agencies within the basin relying on groundwater. Moreover, a mechanism must be developed to enforce the baseline pumping allowance. It is not reasonable to believe that an allocation of groundwater storage would be made to an outside agency, such as EBMUD, until the needs of the local agencies have been met and those agencies have a means of protecting their respective rights to the groundwater and surface water stored in the groundwater basin.
- There are at least 15 separate agencies that are members of the SGA. Any long-term groundwater banking program will require the cooperation and acceptance of all SGA members, particularly if any FRWA alternative were to use existing facilities. The SGA expressly specifies that local control of groundwater resources will remain in the hands of the local agencies, and control of pumping will be exercised through economic incentives and disincentives. FRWA cannot yet rely on the as yet not established incentives and disincentives and a unanimous vote of 15 independent agencies as a mechanism to ensure that water banked in the North Basin could be extracted and exported. FRWA is not part of the SGA, and there are significant institutional obstacles to implementation of a reliable water supply project dependent on banking and exchange with the north area. SGA has also not yet set a baseline for groundwater pumping for its member agencies in the North Basin.
- SGA has implemented two pilot banking projects. As a result of those pilot projects, it is evident that the individual decision making authority by each of the SGA members is critical. Every agency wants to be free to make independent business and policy decisions. Developing a legal framework that both preserves local autonomy as well as provides an enforceable structure for regulating and managing the groundwater basin will continue to take several years to establish. The legal framework for managing groundwater must also be consistent with the express language of the SGA Joint Power Agreement that "prohibits the SGA from restricting or otherwise limiting the extraction of groundwater within the boundaries of the Authority except by means of economic incentives and disincentives."
- Until the SGA comes up with an enforceable groundwater banking program that is acceptable internally to the SGA members, it is not likely that an outside agency would be able to partner with them. The institutional issues required to develop a project would delay project implementation. It is especially true that a groundwater project of the magnitude of what FRWA requires for its entire yield would be difficult, if not impossible, to accommodate in the North Basin, currently.

Therefore, until the SGA develops an enforceable groundwater banking program that FRWA can rely upon to assure its water deliveries, partnering with SGA to develop a groundwater banking program for the entire project yield in the North Basin is not feasible at this time (see Issue No. 5 in Table 3).

CENTRAL BASIN

The Central Basin Area spans from American River to the North, the Sierra Nevada Foothills to the East, Cosumnes River to the South and the Sacramento River to the West. Groundwater is typically a calcium magnesium bicarbonate or magnesium calcium bicarbonate groundwater. TDS ranges from 24 – 581 mg/L, with an average of 221 mg/L (Montgomery Watson, 1993).

There are seven major known groundwater contamination sites in the Central Basin Area. They include three Superfund sites: Aerojet, Mather Field and the Sacramento Army Depot. The other sites include the Kiefer Boulevard Landfill, an abandoned PG&E site in Old Sacramento, and the Southern Pacific and Union Pacific Rail Yards near downtown Sacramento.

Central Basin inflows historically total approximately 257,000 AFY. Extraction rates have been estimated to be approximately 230,000 AFY for urban and agricultural uses. The Water Forum has estimated the Central Basin annual sustainable yield to be 273,000 AFY.

The Central Sacramento County Groundwater Forum (CSCGF) was created as an extension of the Water Forum, DWR, and the California Center for Public Dispute Resolution. This forum was assembled to develop a groundwater management plan to protect available groundwater supplies and quality (Water Forum, 2002). Most recent estimates by the Central Sacramento County Groundwater Forum for completion of the Negotiation Phase, including deciding on an Action Plan for Implementation, is June 2004 (Memorandum from Jim McCormick and Larry Norton to the Central Sacramento County Groundwater Forum, Subject: Road Map for Negotiation Phase, October 25, 2002).

Groundwater levels have declined in portions of the basin, potentially impacting river and stream flows. It is expected that pumping will steadily increase in the future. Potential litigation could force basin adjudication.

There are no known artificial banking programs in the Central Basin. The Basin is not generally considered to be in an overdraft condition, but portions of the Basin (Elk Grove area) have significant cones of depression in the groundwater table.

The establishment of a groundwater management plan for the Central Basin was recently begun under the CSCGF process. The collaborative stakeholder process is quite extensive and will take several years to develop its ultimate product of a "solution package and implementation plan" (from the negotiation phase, presently underway), a basin management plan, and a framework for governance. One of the FRWA member agencies, SCWA, which could lend its authority to the governance structure has deferred to this process and is in fact financially supporting it.

In summary, there were no fatal flaws identified associated with the establishment of a groundwater recharge program in the Central Basin. However, attempts were made to locate an EBMUD banking program outside of the Zone 40 buildout area. SCWA banking programs would be located within the Zone 40 buildout area, since a portion of their wells and infrastructure are in place.

GALT BASIN

The Galt Basin Area lies to the South of the Central Basin, and generally extends from the Cosumnes River south to the County line. The basin itself extends into San Joaquin County to the south and Amador County to the east. Available information about the Galt Basin is limited. Groundwater level trends since the 1980s have shown declines followed by recoveries in groundwater levels. The eastern portion of the basin has maintained consistently higher groundwater levels than the western portion of the basin. TDS levels in the twenty water supply wells ranged from 140 – 438 mg/L, with an average of 218 mg/L (DWR, May 2002). There appear to be no known major contamination sites.

Basin inflows have historically exceeded extraction rates. There is a large cone of depression in the northern part of the basin. Natural and applied water recharge rates have totaled approximately 269,000 AFY. Urban and agricultural extractions have totaled approximately 129,000 AFY. The remainder indicates the quantity of subsurface outflows. The sustainable yield of the Galt Basin has been estimated to be 115,000 AFY.

There are thirteen separate water agencies actively involved in utilizing groundwater in the Galt Basin. The Sacramento Metropolitan Water Authority filed a notice of intent to adopt an AB 3030 plan for the Omochumne – Hartnell, Galt ID, Clay WD and the City of Galt in 1994. These agencies subsequently drafted a joint powers agreement (not including the City) to work cooperatively on water resources issues. A formal AB 3030 Plan was never prepared, however. During 2002, these agencies decided to create the Southeast Sacramento County Agricultural Water Authority, and formally organize their activities. This Authority has the ability to manage water resources within the three agencies service areas, but not throughout the basin. The ability of the Authority to implement a groundwater banking project is unknown, due to their very recent creation; and the lack of a collaborative stakeholder process, as proscribed in the Water Forum Agreement, has limited the potential implementation of a banking and exchange program. This process would have to be undertaken in order to clearly define the parameters within which such a program could be developed. A similar parallel process to the CSCGF for the Galt Basin is also contemplated under the Water Forum Agreement but has not yet begun.

In summary, land use in the Galt Basin points to recharge of surface water through in-lieu applications, due to the large use of groundwater by farmers. It was believed that reducing groundwater pumping would more widely distribute water within the groundwater basin as compared to injecting surface water, which could mound if over applied. In addition, attempts were made to benefit Cosumnes River flows and the local aquifers, and improve water availability in that area, some percolation basins will be located within the Cosumnes River floodplain area. This area has the highest percolation rates in the Galt Basin.

Regulation of Groundwater Storage and Recovery

Three regulatory agencies will need to be consulted in order to fully evaluate this conceptual alternative. They are the Regional Water Quality Control Board (RWQCB), the State Water Resources Control Board (SWRCB), and the Department of Health Services (DHS). The State Resources Agency (including Department of Water Resources – DWR) is also an important source of information. The agency roles, responsibilities, and potential involvement are further described below. Permits will also be required from various other jurisdictions or agencies, depending on what concept is ultimately implemented.

REGIONAL WATER QUALITY CONTROL BOARD (RWQCB)

The RWQCB (Central Valley Region) is responsible for the preparation and adoption of Water Quality Control Plans (Basin Plans), enforcement of the Clean Water Act and the California Water Code. The Basin Plans designate beneficial uses for the waters within the basin, their water quality objectives, and identify strategies to attain these objectives. All groundwaters in Sacramento County are considered to be suitable for a municipal or domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

Each Basin Plan in Sacramento County incorporated the maximum contaminant level water quality objectives as defined in Title 22 of the California Code of Regulations. These objectives include limiting coliform concentrations to below 2.2 MPN/100 ml, and waters free from taste or odor producing substances, and radioactivity. The RWQCB also has a non-degradation policy, such that any new supply of water recharged into the basin must not degrade the existing groundwater basin.

Any project proposing to store surface waters in the groundwater basins will be required to obtain a permit from the RWQCB for the design, operation, and construction of all groundwater injection, recharge and extraction facilities, as specified in WC 13260.

STATE WATER RESOURCES CONTROL BOARD (SWRCB)

The SWRCB has jurisdiction over the Regional Boards. In addition, the SWRCB has jurisdiction over the surface water rights that would be an essential element of the proposed groundwater storage conceptual alternative. The SWRCB would be responsible for approving any changes in places of use, purposes of use, or points of diversion that would be required to implement the conceptual plan. These issues are explored in the institutional feasibility analysis of this memorandum.

DWR (STATE RESOURCES AGENCY)

The State Resources Agency includes the Department of Fish and Game, Coastal Conservancy and other resource-oriented departments, including the Department of Water Resources (DWR). DWR prepares the State Water Plan (Bulletin 160), manages and operates the State Water Project, and assists in monitoring the state's water resources and protects, restores, and enhances the natural and human environments. In relation to groundwater, the DWR prepares the Bulletin 118 report, which defines the existing conditions of each basin.

The DWR monitors groundwater levels in approximately 2,000 wells in central California. This tracking has shown that groundwater levels in the North Basin are steadily decreasing. Water levels in the Galt Basin have largely recovered to their 1980 levels, and there is no consistent pattern in the Central Basin, though some decreases have been measured, and the Elk Grove area has experienced significant groundwater level declines. The DWR is studying several areas in the lower Sacramento Valley where conjunctive use operations may be possible. At this point in our investigation, it appears that the State Resources Agency is an interested party, but not a permitting agency with respect to water transfer, exchange, or conveyance, with the exception of construction permits such as Streambed Alteration Agreements with the Department of Fish and Game.

DEPARTMENT OF HEALTH SERVICES (DHS)

The DHS regulates the operation of potable and recycled water systems: issues operating permits for these facilities; reviews plans and specifications for new facilities; enforces existing laws and regulations, including the Safe Drinking Water Act; and reviews water quality monitoring results. Furthermore, the DHS also conducts source water assessments, and evaluates projects utilizing injection and extraction into potable groundwater basins.

For any groundwater storage concept, the DHS would be heavily involved in the conceptual design and planning of all water treatment facilities. The DHS would primarily defer to other regulators for all non-treatment related issues, except those related to the impact of long-term storage of treated surface waters in the groundwater basin. These issues include the following (Setoodeh, 2002):

- "Bubble" formation – how close does the injected water "bubble" come to influencing the surface, and where does it migrate?
- Would the extracted water be retreated?
- What is the proximity of the stored water to known contamination sites?
- The impact of long-term storage on existing groundwaters, e.g. presence of THMs.

These issues would need to be resolved with DHS prior to the approval to operate any of these conceptual alternatives. The DHS would also need to approve the design of any treatment facilities. Water quality requirements for injected and extracted water would be likely be addressed by a combination of the DHS and Regional Water Quality Control Board.

OTHER AGENCY JURISDICTION

At this time, there are no other agencies with known jurisdiction or permitting authority over a wet year/groundwater storage project over and above those associated with the Base Project. However, this assumption would have to be further investigated if the wet year/groundwater storage alternative were to be considered at a project level in the CEQA process.

Scenario Evaluation

The Scenarios were selected based on the potential feasibility of the project, and the previous discussion about locations for groundwater recharge. The scenarios that were believed to represent a potentially technical feasible solution, absent of any institutional issues, were:

- Scenario 1: Wet Year Groundwater Storage for EBMUD (Injection in Central Basin)
- Scenario 2: Wet Year Groundwater Storage for EBMUD (Percolation/In-Lieu in Galt Basin)
- Scenario 3: Wet Year Groundwater Storage for EBMUD and SCWA (Percolation/In-Lieu in Galt Basin, and Injection in Central Basin)
- Scenario 4: Wet Year Groundwater Storage for SCWA (Injection in Central Basin)

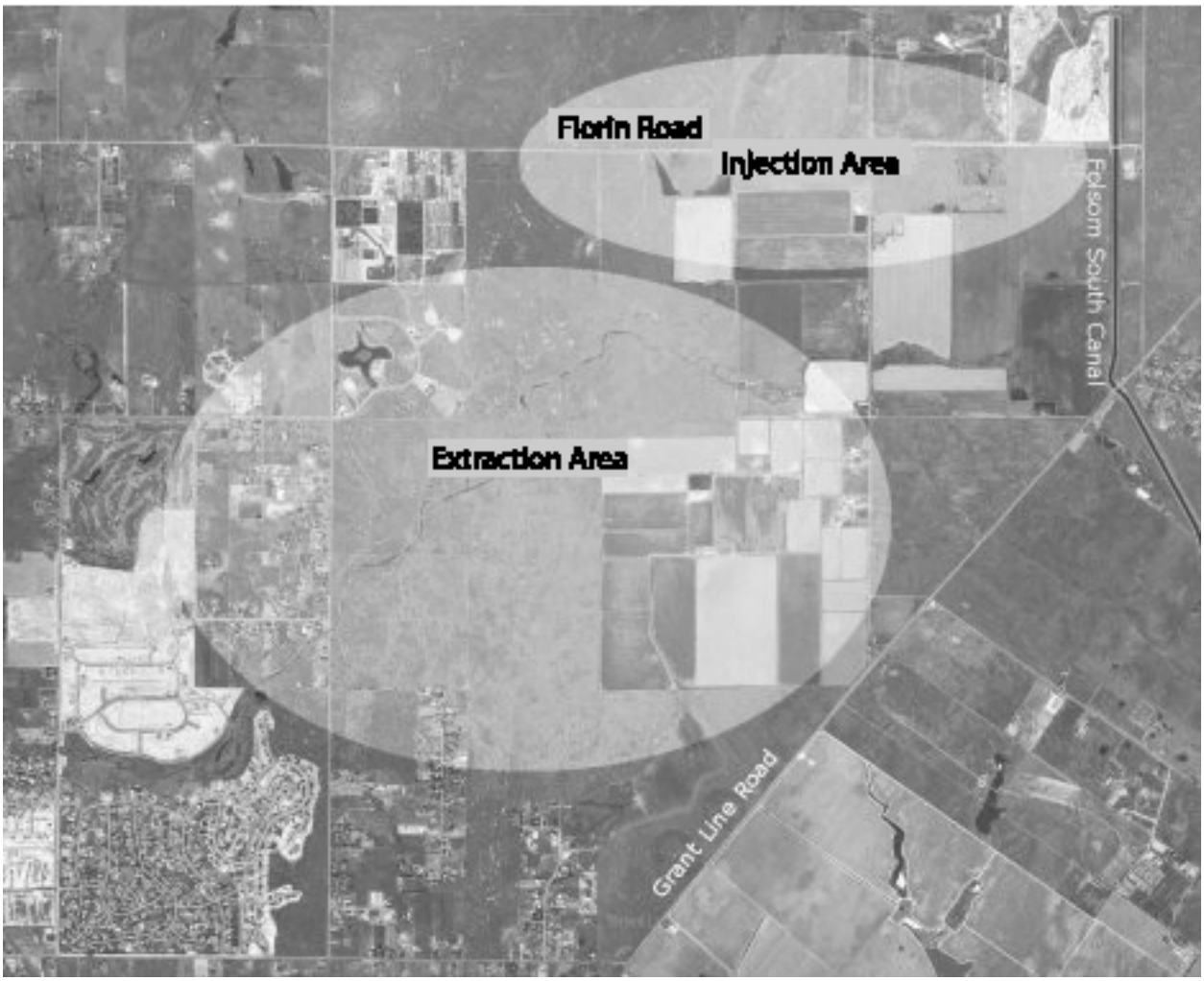
Each of these scenarios is discussed below.

SCENARIO 1 – WET YEAR GROUNDWATER STORAGE FOR EBMUD (INJECTION IN CENTRAL BASIN)

This scenario would modify the EBMUD diversion schedule so that surface water would be diverted from the Freeport intake during wet years at a constant rate of 4,500 AF/month. No modifications were made to SCWA's diversion schedule, which were assumed to remain the same as the Base Project. Treatment is required prior to injection of surface water to prevent degradation of groundwater quality, to reduce the turbidity of the surface water, minimize aquifer clogging, and maximize the injection capacity of each injection well. Treatment would occur at either the proposed SCWA treatment plant or a new satellite treatment plant.

Filtered water would be injected into the Central Basin. These injection wells would be located in an area generally bounded by Bradshaw Road to the west, Florin Road to the north, the FSC to the east, and Gerber Road to the South. A map of the proposed injection and extraction areas is shown as Figure A2. This location was selected because it is currently a largely undeveloped area with fewer extraction wells, available land for locating wells, pipelines and treatment facilities, and would not affect the planned SCWA conjunctive use operations. Each injection well was assumed to have an injection capacity of 1,000 gpm. Based on 24-hour, seven days per week diversions at a constant rate, a total of 36 injection wells are required to meet capacity requirements, including two additional wells for redundancy, reliability, and operational flexibility considerations. It was assumed that the Base Project facilities would be backbone of an injection operation, and injection wells would be located within 1,000 feet of the pipeline alignment. Wells would be spaced a minimum of 2,000 feet apart from each other. Screens would be located to pump out of the lower aquifer. Specific locations for the injections wells were not identified as a part of this effort, though it was assumed that new wells would need to be drilled for this scenario either on existing farm land or farm roads.

Figure A2: Map of Scenario 1 Injection and Extraction Well Areas



Extraction wells would be located to the south and west of the injection wells, downgradient from the location of the injection wells. Aquifer storage and recovery wells were not utilized due to the significant migration of water within the Central Basin over the periods of groundwater storage. The extraction wells would each have an extraction capacity of up to 2,000 gpm. In order to minimize the potential for excessive mounding or drawdown associated with injection or extraction, it was assumed that each injection and extraction well would be spaced a minimum of 2,000 feet away from any other injection or extraction well. To provide the equivalent of 55,000 AFY to the FSC, nineteen extraction wells are required, including two additional wells for reliability and redundancy. Though it is desired for the extraction wells to capture water injected into the ground, it is believed that water extracted from groundwater wells would be a combination of groundwater and injected surface water, once adequate surface water supplies were banked in the groundwater basin. Screens would be located to extract water from the lower aquifer. It was assumed that 90% of water banked in the ground could be extracted, and 10% would be left in the groundwater basin to account for losses. Monitoring wells may be required to determine the residency of injected surface water, and to allow for groundwater sampling. Extraction wells were assumed to extract water at a pressure meeting the FRWA pipeline pressure for deliveries to the FSC.

A new collection system would be required to convey extracted water from the extraction wells to the FSC. It was estimated that approximately 33 miles of pipeline would be required to convey water to and from the injection and extraction wells. Of this length, it was assumed that there was 1,000 feet of 16-inch ductile iron pipe for every injection and extraction well. A conveyance system from each extraction well back to the FRWA facilities (or FSC, whichever is closer) would also be required. No injection or extraction wells were specifically located for this effort. It was not known whether existing farm wells or new wells would be utilized for this effort, though it was assumed that new wells would be drilled.

The overall amount of water diverted by EBMUD is the same in the Base Project and Scenario 1, though it is assumed that only 90% of the water injected can be extracted. This would result in approximately 160 TAF less of overall deliveries to EBMUD during the period of the CALSIM simulation. The constraint that EBMUD only extract stored surface water (and not native groundwater) is important for the following reasons:

- This constraint minimizes the chances of injury to other groundwater users in the Basin that are considered an important condition that would be placed on a project of this type.
- Water Code 1220 prohibits the export of groundwater from the combined Sacramento and Delta-Central Sierra Basins, as defined by DWR Bulletin 160-74, unless the pumping is in compliance with a groundwater management plan adopted by the County, or portion of the County, that overlies the groundwater basin. The boundaries of these protected basins include Sacramento County (including North, Central and Galt areas). Thus, pursuant to the Water Code, unless there is a voter-approved AB 3030 plan, which provides for the export of groundwater (there is not), EBMUD would be limited to using only a quantity of water equal to the volume surface water that was stored in the groundwater basin, minus losses and any agreed upon leave.

In order to keep the overall diversions for Scenario 1 the same as those developed for the Base Project, some dry year diversions were required during the 1928 – 1934 drought period to prevent overdraft of the groundwater basin. The total extractions would not, at any time, exceed the amount of water banked, minus any agreed upon leave for losses. The quantity of dry year diversions during this time period was 150.8 TAF.

Surface Water Operational (CALSIM) Modeling: CALSIM is a generalized multi-year water resources simulation model for evaluating operational alternatives of large, complex river basins, such as the Sacramento River. The results of the CALSIM modeling help predict the impact of the proposed Scenarios on available water supplies, water quality, and storage volumes, among other items.

CALSIM modeling of Scenario 1 was performed utilizing the EBMUD diversion schedule as a fixed input. The results of this modeling effort (CH2M Hill, 2002) showed the following:

- There was available water to supply EBMUD during the modified diversion schedule;
- Total available CVP storage increased by an average of 1.1% during dry years as compared to the Base Project;
- There was no change in SCWA "Other" or "Excess" water diversions as a result of the change in the EBMUD diversion schedule, as compared to the Base Project; and
- No change to Delta's X2 position (location of the salt water/fresh water interface in the Delta) was observed, as compared to the Base Project.

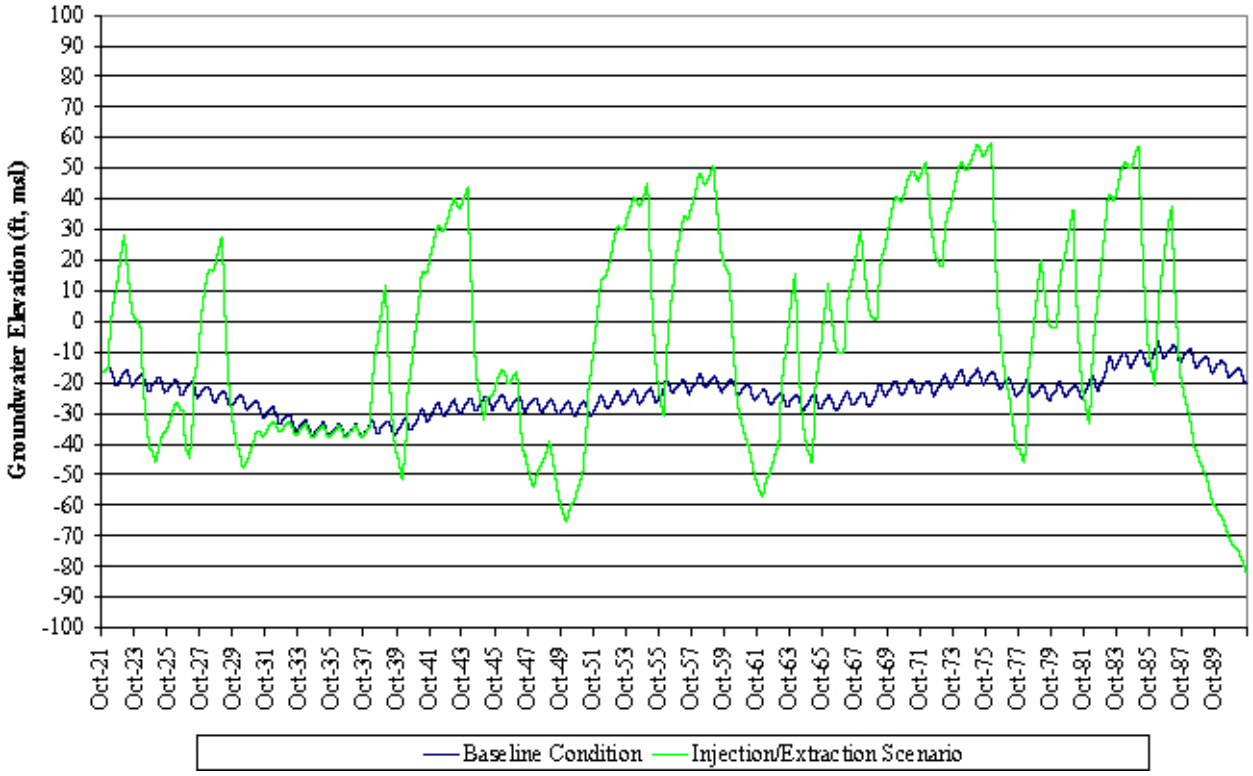
The net effect on CVP operations of modifying EBMUD diversions from dry years to wet years is small to negligible. However, EBMUD dry year diversions account for approximately 1% of the overall CVP diversions during a typical dry year in which EBMUD diverted, so these results are not unexpected. The net impacts of the change in diversion was most evident during the later years of a multi-year drought, when storage levels in Oroville Dam and elsewhere are at their lowest point. This would constitute the condition of maximum benefit associated with a shift in diversion pattern. However, such benefits would only be available if available groundwater had already been banked and remained in storage. As multiple dry years were modeled in the simulation, the 1928 through 1934 drought identified that in the third and subsequent years of a drought, with groundwater storage depleted to background levels, dry year diversions were required to meet the project purpose of dry year deliveries to EBMUD, and therefore, the range of project impacts still included occasional dry year diversions.

Groundwater Operational (IGSM) Modeling: Preliminary IGSM modeling showed that implementation of Scenario 1 heavily influences local groundwater table elevations. Figure A3 shows a hydrograph for a node located near the injection/extraction site. Injection affects groundwater levels by up to 50 feet in one year in the area immediately adjacent to the injection well, with a similar extent of drawdown at extraction wells during periods of extraction. During the simulation, the difference between maximum and minimum groundwater elevation varied by as much as 120 feet in the immediate area of the injection and extraction wells. Changes in groundwater elevation were observed throughout the Central Basin, with the northern portion of the basin generally receiving increased groundwater elevations, with the southern portion of the basin generally having slightly reduced groundwater elevations. The injection appeared to not affect the ability of the Cosumnes River to connect to the upper aquifer, but the level of accuracy of the model limits detailed conclusions about this issue. During a drought period following long periods of injection, groundwater levels decreased below the Base Project levels, resulting in drawdowns of up to 50 feet. It is believed that this drawdown is a result of the lack of residency of the surface water injected into the aquifer. In essence, water is being injected on the "shoulder" of the groundwater basin, and the amount of time between injection and extraction allows water to migrate to areas with lower groundwater elevations, or to local creeks.

The results of the simulation show that the implementation of Scenario 1 either has to be spaced over a much wider area than outlined in this scenario, in order to minimize the local impacts of injection and extraction, or the quantity of water injected and extracted needs to be significantly reduced to better manage the groundwater basin. In addition, a significant quantity of groundwater volume would need to be identified to use for long-term storage.

A static analysis of the supply and demand requirements for this scenario showed that up to 500,000 AF of groundwater storage during peak storage years would be optimal in the simulation to ensure continued operation and minimize dry year diversions for just the EBMUD component of the project. However, the simulation shows that the peak storage volume takes many years to reach, and assumes that the water is not lost over time. The result of this scenario is that the simulation predicts up to 180,000 AF of surface water remaining in the groundwater bank, and an additional 165,000 AF assumed to be lost to the environment. To minimize dry year diversions, therefore, there would be a need to increase the volume of water lost to the environment to account for the IGSM modeling results.

Figure A3: Groundwater Hydrographs for Node near Injection/Extraction Area)



Incremental Capital Cost Evaluation: Since no injection wells or extraction wells were specifically located, the cost for this scenario is based on a number of assumptions. These assumptions are identified below.

- Injection wells would be located 1,000 feet to the north and south of the Gerber Road Pipeline alignment. Turnouts for each well would be located 1,000 feet apart from each other, with one turnout connecting to an injection well to the north and the next to an injection well to the south. Each turnout would be sized with 12-inch pipe;
- Extraction wells were assumed to require an additional 1,000 feet of 16-inch pipe, plus an additional 1,000 feet of transmission pipeline. The assumed size of the transmission pipeline is 48-inches;
- The cost for each pipeline is $8 per inch-diameter per lineal foot; and
- Each injection and extraction well was assumed to cost $500,000 each.

Based on these cost assumptions, a cost estimate for Scenario 1 is presented in Table A1. This cost estimate is developed only to a conceptual level, which typically correlates to a -30%/+50% level of accuracy. The cost for Scenario 1 would be in addition to the $690 million cost estimated for the Base Project.

Table A1: Scenario 1 Conceptual Incremental Capital Cost (2002 Dollars)

Project Elements	Unit Price	Units	Quantity	Cost
Filtration Treatment (40 MGD capacity)	$6,000,000	LS	1	$6,000,000
Injection Wells	$500,000	EA	36	$18,000,000
Transmission pipeline for Extracted water (48-inch)	$384	LF	30,000	$12,000,000
Lateral from Extraction Wells to Transmission Pipeline (16-inch)	$108	LF	72,000	$7,800,000
Extraction Wells	$500,000	EA	19	$9,500,000
Lateral from Extraction Wells to Transmission Pipeline (16-inch)	$108	LF	72,000	$7,800,000
Pipeline Appurtenances (Fittings, line valves, air valves, etc)	10%	%		$2,800,000
Subtotal				**$63,900,000**
Construction Contingency (30%)	30%	%		$19,200,000
Total Construction Cost				**$83,100,000**
Engineering, Legal, Admin, Permits, Right of Way (25 %)	25%	%		$20,800,000
Overall Total				**$103,900,000**

Notes:
1. Assumes that the injection wells would be spaced 1,000 feet to the north and south of the proposed FRWA transmission pipelines.
2. Costs are rounded to two significant figures.
3. Extraction wells would be spaced 1,000 feet from a 48-inch collection pipeline, and be parallel to each other a minimum of 2.000 feet apart.
4. Assumes a unit cost for pipelines of $8 per inch diameter per foot.
5. Well facilities were not located. This estimate should serve only as a guide until facilities are located.

SCENARIO 2 – WET YEAR GROUNDWATER STORAGE FOR EBMUD (PERCOLATION/IN-LIEU IN GALT BASIN)

This scenario would divert surface water intended for EBMUD from the Freeport intake during wet years for use in the Galt Basin. No modifications were made to SCWA's diversion schedule, which were assumed to remain the same as the Base Project. The surface water would be stored in the Galt Basin. Uses would include agricultural irrigation and percolation into the groundwater basin. It was assumed that 80% of the surface water would be diverted on a monthly schedule correlating to when farmers required water. It was assumed that 90% of the water injected could be recovered in order to account for losses. No diversions would occur during dry or normal years, and the overall amount of water diverted during the 70-year simulation period remains the same. Table A2 shows the monthly distribution of agricultural demands used to estimate monthly deliveries.

Table A2: Monthly Distribution of Agricultural Demands for Scenario 2

Month/Project Component	Delivery Distribution by Month												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
In-lieu recharge (TAF)	0.03	0.03	1.76	4.24	7.19	6.33	6.82	6.13	5.25	3.25	1.69	0.02	42.8
Percolation (TAF)	0.00	0.00	0.00	1.78	1.78	1.78	1.78	1.78	1.78	0.00	0.00	0.00	10.7
Total Monthly Diversions (TAF)	**0.03**	**0.03**	**1.76**	**6.03**	**8.97**	**8.12**	**8.61**	**7.91**	**7.04**	**3.25**	**1.69**	**0.02**	**53.5**

The annual diversion schedule for Scenario 2 is the same as for Scenario 1, but the monthly distribution varies based on the agricultural demand for water and the percolation ability of the basin. Eighty percent of the water recharged in Scenario 2 would be recharged in-lieu through delivery to farmers within the Galt Basin, while 20% of the water would be recharged in groundwater basins. Water availability at the Freeport Intake is typically highest during the winter and early spring months, but this alternative would take water predominantly during the spring, summer, and fall months.

In order to keep the overall diversions for Scenario 2 the same as those developed for the Base Project, some dry year diversions were required during the 1928 – 1934 drought period to prevent overdraft of the groundwater basin, as in Scenario 1. The total extractions would not, at any time, exceed the amount of water banked, minus any agreed upon leave for losses. The quantity of dry year diversions during this time period was 150.8 TAF.

It was expected that raw surface water could be delivered without pretreatment, since it would be used solely for agricultural irrigation or percolation. If treatment were required, suitable location(s) would need to be identified. How both uses are utilized is described below.

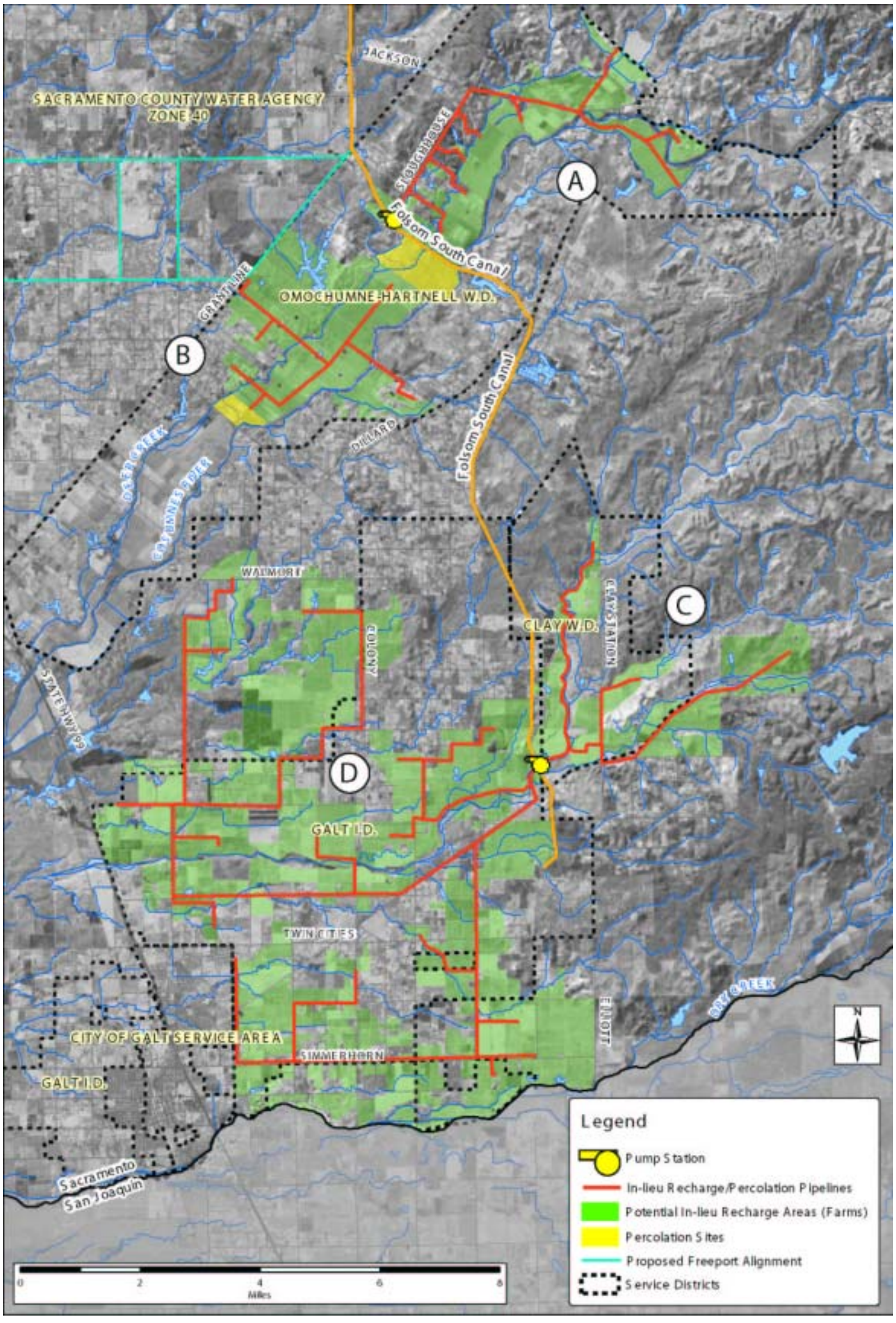
In-Lieu Recharge

The Zone 40 Master Planning effort is developing estimates for unit average water use for farmland within the entire Sacramento basin. These water use factors vary depending on the type of crop and the location of the farm, but typically range between 2.5 acre-feet per acre per year (ft/yr) and 3.5 ft/yr. Though no farm specific data was analyzed, a conceptual planning level water use factor of 3.0 ft/yr was assumed for all in-lieu recharge sites.

Based on this rate, efforts were made to locate at least 15,000 acres of irrigated farmland. Aerial photos, GIS data, irrigation intensity and the proximity to existing facilities were all reviewed in this analysis to identify potentially feasible sites for in-lieu recharge. Over 50,000 acres of potential farmland was identified in areas potentially feasible for an in-lieu recharge project. The total area presented in the following alignments total approximately 32,000 acres. It was desired to spread out the location of in-lieu recharge areas to maximize the amount of available groundwater volume that would be utilized for storage, and minimize the local impacts of the project. Figure A4 shows a map of the proposed in-lieu recharge area.

The farms selected as candidates for in-lieu recharge are located predominantly in the Omochumnee – Hartnell Water District (OHWD), Galt Irrigation District, Clay Water District and areas immediately surrounding those Districts. These areas would receive raw surface water pumped from the FSC for irrigation. Water would be extracted from selected farms receiving surface water for irrigation from either existing on-site wells, or new wells constructed on the farm site. A map of these areas and conceptual distribution systems for each area is shown in Figure A4. Maps of each alignment and a description of that alignment are discussed below.

Figure A4: Map of Scenario 2 – In-Lieu Recharge and Percolation Sites



Alignment A would receive surface water either through directly pumping out of the FSC, or construction of an extension of the proposed FRWA alignment to Sloughhouse Road. The main distribution pipeline would travel northeast on Sloughhouse road and east on Jackson Highway, connecting approximately 4,000 acres of farmland within the OHWD. There are some farm lands just outside of the OHWD that could also be connected to the pipeline, but the added infrastructure requirements to connect these lands seemed cost-prohibitive. Efforts were made to locate pipelines along roads to minimize right of way issues.

Alignment B would divert from surface water from the proposed FRWA pipeline on Grant Line Road for delivery to approximately 6,000 acres of farmland and 600 acres of percolation basins. It is believed that no additional pumping would be required, provided there is adequate pressure at Grant Line Road to deliver water to the farm sites. This alignment would require construction on farm roads or within farm sites, since there appear to be few to no roads in this area except Grant Line Road and Wilton Road. There is one crossing of the Cosumnes River to connect additional farmland on the South side of the River. Alignment B could also be extended onto Dillard Road to connect a fish hatchery to surface water. The fish hatchery is believed to be one of the largest groundwater pumpers in the Central Basin.

Alignments C and D would pump surface water from the FSC to farmers in Clay, Galt ID and environs. The pump station would be located just north of Twin Cities Road, and the alignments would extend east and west from the pump station discharge between Highway 99 and the foothills. Approximately 25,000 acres of farmland were identified in the areas that are potentially suitable for irrigation, and up to 60 miles of pipeline could be constructed to connect each farm to the distribution system. Significant efforts would be required to determine the best irrigation sites, and minimize the overall facility requirements. Long stretches of the alignments travel along either farm roads, levees, or existing farmlands, due to the lack of suitable roads in some areas. There are numerous creek crossings as well. The areas served by these alignments are typically more intensive to the west near Highway 99, with largely pasture lands for grazing in the eastern portion of the alignment.

Alignments B and D seemed to present the most likely opportunities to connect the most acreage while minimizing infrastructure costs. Significant work would be required to optimize the location and operation of these distribution systems, including determining farm-specific water needs, procuring right of way, managing delivery schedules, and determining required delivery pressures. These alignments also have farms within existing water districts, which could make export of groundwater more suitable in the long-term. Preliminary discussions with local entities such as the Nature Conservancy in the Cosumnes River preserve have indicated their willingness to locate extraction wells and recharge facilities on their property. They also suggested that locating in-lieu recharge sites in the area directly across Highway 99 between Twin Cities and the Elk Grove Urban Services Boundary also held opportunities for high-intensity irrigation/recharge, but those opportunities were not explored due to the abundance of farm land closer to project facilities. If these farm lands are determined to not be suitable for recharge, opportunities for other in-lieu recharge sites are prevalent in other areas of the Galt Basin.

Providing storage would allow the distribution system to operate as a gravity system, instead of providing pressure solely through pumping. Opportunities to add system storage to the distribution system to provide system storage could be incorporated into Alignments B and C, since they are nearby areas of higher elevation. Storage in Alignment C would provide storage to Alignment D as well.

Opportunities to minimize the infrastructure cost for the distribution system, including pumping requirements, pipeline diameters, and real estate costs, can be incorporated into the design. These

opportunities include scheduling water deliveries to farmers to minimize peaking, requiring existing wells to be used as an on-site backup if adequate supplies are not available, and requesting easements from farmers receiving water for distribution pipelines. These opportunities will be further explored during design development.

Percolation Basins

The remaining 20% of the available surface water diversions would be diverted to percolation basins for recharge. Percolation would occur between April – October. It is desired to recharge primarily during dry weather months, when permeability is highest and the soil is less saturated. Water would be delivered to the percolation basins at a constant monthly rate during that period. It is intended to percolate raw water into the basin with no additional treatment. Some of the water intended for percolation will evaporate due to evapotranspiration.

There is no obvious natural depression suitable for a percolation basin that is either unoccupied or not already considered to be a pond or stream. It was expected that between 300 – 500 acres of percolation area is required to percolate 10,700 AFY. Based on the area requirement, it is likely that a percolation basin would need to be created out of flat or slightly contoured areas. Thus, significant excavation will be required to manufacture a percolation basin. For this analysis, areas near proposed pipeline alignments and with a high permeability were identified as candidates for locating a percolation basin. Alternates not considered in this analysis include utilizing existing ponds on Cosumnes River tributaries, or augmenting Cosumnes River flows. These issues will need to be further explored in order to determine the feasibility of implementing either alternate. However, it is expected that amending existing water bodies with waters not specific to that watershed are critical issues for regulators, and limit the feasibility of a project.

The area within the Cosumnes River floodplain generally had the highest percolation ability of any soils within the Central or Galt basins. Much of the floodplain had a "B" rating overall for permeability, based on the Natural Resources Conservation Service Soil Survey Geographic Database soil data. For this analysis, it was assumed that the soil permeability was 0.3 ft/day. Many of these areas are already farmed, and were also identified as potential in-lieu recharge sites. Two areas that are not irrigated but have a high permeability are located adjacent to areas served by Alignment B. These areas are shaded in yellow on Figure A4. Thus, a minimum area of 300 acres for percolation is required, though more may be required if percolation rates are less than expected. These areas have a direct interface with the Cosumnes River, which could accelerate the movement of water to and from the percolation basin.

Extraction wells would ring the percolation basin to maximize extraction. It is believed that at least five extraction wells would ring each percolation basin. These wells would penetrate only to the upper aquifer, where the surface water is to be percolated. Likely, the water extracted from the basin much of the water percolated into the basin and not extracted for many years would be lost to the environment, and that the water extracted would be a mixture of surface water and groundwater.

Surface Water Operational (CALSIM) Modeling: CALSIM modeling of Scenario 2 was not expected to vary significantly from Scenario 1, since only the monthly distribution of diversions within a given year changed compared to Scenario 1. Thus, it was expected that the same results will be seen from CALSIM modeling of Scenario 2, and a separate CALSIM modeling run was not completed. The results of that CALSIM modeling run are repeated here.

- There was available water to supply EBMUD during the modified diversion schedule, except for the 150.8 TAF of dry year diversions during the 1928-1934 drought period.;

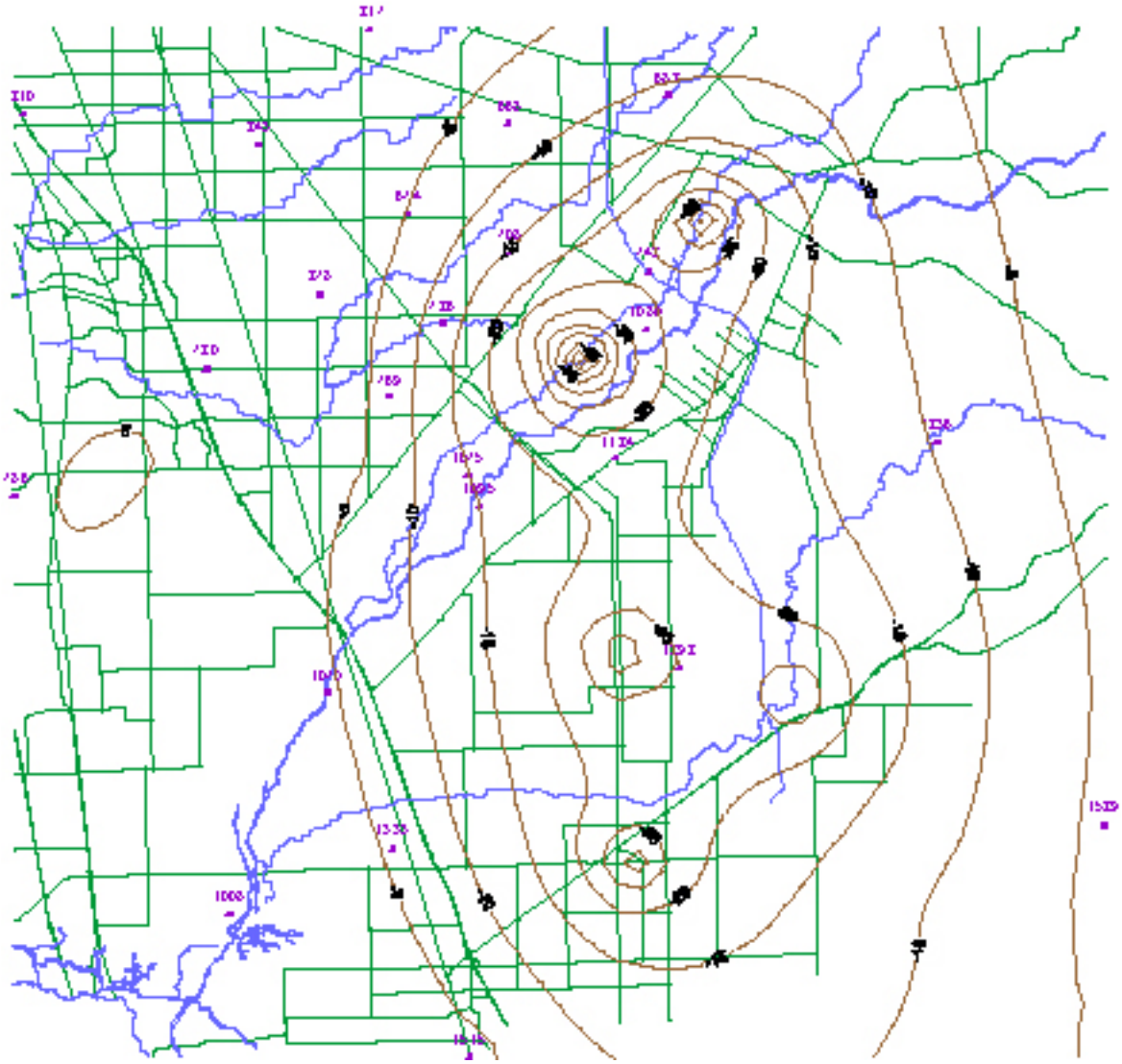
- Total available North of Delta CVP storage was 10 TAF less than the No Action Alternative during all years, and 30 TAF less during dry years.
- Oroville storage decreased by 10 TAF from the No Action Alternative during all years, and 26 TAF during dry years.
- Both North and South CVP total deliveries were similar to the No Action Alternative.
- SWP total deliveries were 5 TAF less than the No Action Alternative during all years, 19 TAF less during dry years.
- There was no change in SCWA "Other Water" or "Excess Water" diversions as a result of the change in the EBMUD diversion schedule, as compared to the Base Project.
- No change to Delta's maximum or minimum X2 position was observed, as compared to the Base Project.
- No change to Delta salinity is anticipated based on predicted Delta flows as compared to the Base Project.

Similar to Scenario 1, during the drought of 1928 through 1934, not enough water had been banked to provide water to EBMUD during this entire time period. During the third and subsequent years of a drought, with groundwater storage depleted to background levels, dry year diversions were required to meet the project purpose of dry year deliveries to EBMUD, and therefore, the range of project impacts still included occasional dry year diversions.

IGSM Modeling: Scenario 2 IGSM modeling results showed widespread raising of the water table by between 0-10 feet, but localized drawdowns in the vicinities of the extraction wells, especially during dry years. The extent of drawdown varies based on the number of extraction wells, but can range between 20-30 feet if using 5-15 extraction wells. Figure A5 shows a contour map of groundwater elevations for layer two of the groundwater basin when using five extraction wells. This change would affect the ability of wells to pump from their existing screened depths, and result in increased power charges for pumping. Following multiple sequential dry years, maximum drawdown is typically achieved.

The wider area of application of surface water greatly distributes the injected water, reducing the changes to groundwater elevations during application and extraction compared to Scenario 1. However, the extraction of groundwater still results in localized depressions around the extraction wells. One way to help resolve this issue is to utilize more extraction wells pumping at lower rates. Existing farm wells could also be converted for this purpose, provided that the farmers agree to use their wells for this use.

Figure A5: Scenario 2 – September 1991 Groundwater Difference Contours



Cost: Optimization of the Scenario 2 distribution system alignment was not performed. Over 50,000 acres of potential sites for in-lieu recharge were identified, but the best sites for recharge are currently unknown. The types of crops, irrigation methods, desire to receive surface water, and other site specific issues will assist in determining the most suitable alignments. It is expected that a combination of the reaches will be utilized that allow for system storage, reliable deliveries and opportunities to expand the distribution system.

The cost estimate presented for this option is based solely on the expected unit price for delivering water to 20,000 acres of land, based on the location and lengths of Alignments A through D. Pipeline diameters were estimated based on the quantity of land served by that pipeline. It is expected that the final cost for this alternative would be determined during the development of additional design details. Other cost assumptions are identified below.

- Pipelines capital cost is $8 per inch diameter per lineal foot;
- The diameter of the pipelines will vary in size from 12-inches to 36-inches;
- Water deliveries would be scheduled to reduce pumping requirements;
- Surface water would be delivered to all customers at a minimum pressure of 60 psi.

Based on these cost assumptions, a cost estimate for Scenario 2 is presented in Table A3. This cost estimate is developed only to a conceptual level, which typically correlates to a -30%/+50% level of accuracy. The costs for Scenario 2 are in addition to the cost for the Base Project facilities, which is currently estimated to be $690 million.

Table A3: Scenario 2 Conceptual Cost Estimate

Project Elements	Unit Price	Units	Quantity	Cost
Percolation Basin	$4,000,000	LS	1	$4,000,000
Distribution Pipelines	$160	LF	258,720	$41,000,000
Pump Stations	$2,500,000	LF	2	$5,000,000
Extraction Wells	$500,000	EA	20	$10,000,000
Pipeline Appurtenances (Fittings, line valves, turnouts, air valves, etc)	10%	%		$4,100,000
Subtotal				**$64,100,000**
Construction Contingency (30%)	30%	%		$19,000,000
Total Construction Cost				**$83,000,000**
Engineering, Legal, Admin, Permits, Right of Way (25 %)	25%	%		$21,000,000
Overall Total				**$104,000,000**

Notes:
1. Costs are rounded to two significant figures.
2. Pump Station and Percolation Basin cost estimates based on comparably sized facilities identified in the Revised BMP.
3. Distribution pipelines assume an average pipeline diameter of 20-inches.
4. Extraction wells would be located on farms receiving surface water.
5. Assumes a unit cost for pipelines of $8 per inch diameter per foot.

SCENARIO 3 – WET YEAR GROUNDWATER STORAGE FOR EBMUD AND SCWA (PERCOLATION/IN-LIEU IN GALT BASIN AND INJECTION IN CENTRAL BASIN)

Scenario 3 builds on Scenario 2 by adding a wet weather diversion component for water diverted from Freeport for use by SCWA in Zone 40. The SCWA water would be treated at the SCWA WTP and distributed throughout its service area in Zone 40 to demand points and to injection wells near the existing and planned extraction wells. During dry years, below normal, and normal years, demands in Zone 40 would be met through increased use of groundwater, stored surface water and reduced use of surface water diverted at Freeport. EBMUD water would be conveyed as described for Scenario 2 to the FSC for conveyance to the Galt Area for in lieu recharge and percolation. Subsequent extraction would be managed as proposed for Scenario 2 as well.

Zone 40/41 Deliveries

The major difference between Scenario 3 and Scenario 2 is the increase of wet weather diversions for SCWA from Freeport. These diversions increase during wet and normal years, and are decreased during dry and critical years. This schedule was developed to maximize the ability of FRWA to divert surface water when water is available, and reduce the downstream impacts to Delta Water Users in dry years. Major tenets of this change are:

- No FRWA CVP Diversions during Critical Years;

- No Other Water Diversions during Critical Years; and
- The amount of Other Water and Excess Water diverted during normal or wet years would increase to offset the reduction in CVP deliveries during critical years;

These assumptions were selected solely for their ability to model the outer envelope of water diversion schedules from the FRWA intake, and not for their suitability or feasibility. It was believed that this diversion basis reflected the "best-case" scenario for reducing the impacts of the Base Project on downstream water users.

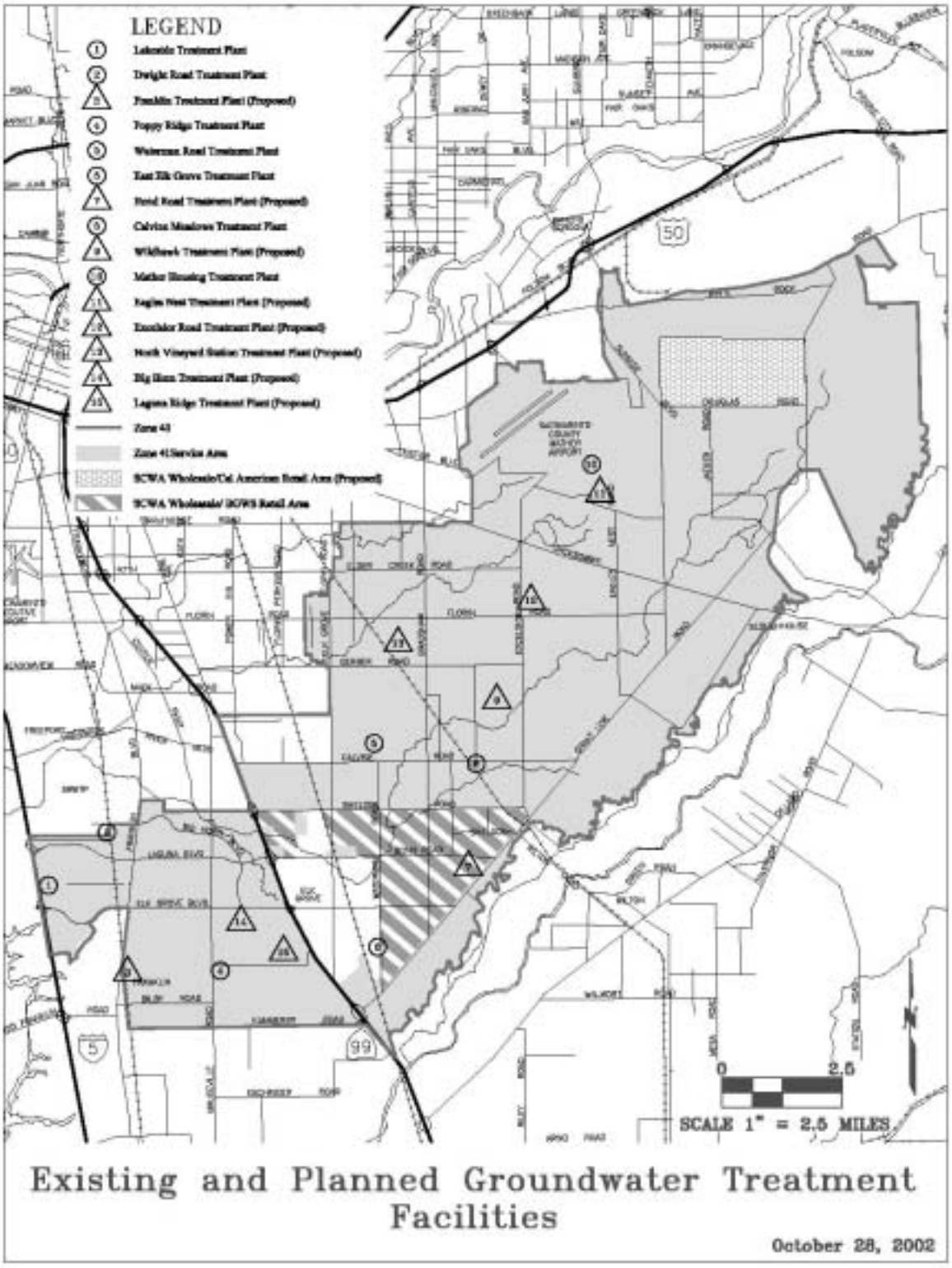
The Scenario 2 facilities would remain the same as described in that section. The new facilities identified in Scenario 3 are described below:

Water diverted at Freeport for use by SCWA would be conveyed through the FRWA diversion facilities to a new surface water treatment plant. This plant is expected to be located near the intersection of Bradshaw and Florin Roads, and would treat all surface water prior to either injection or delivery. Treated surface water was proposed to be injected at 15 sites between Interstate 5 and Mather Air Force Base, as shown on Figure A6. Water would be delivered to each site through either the existing distribution system, planned improvements to the distribution system, or new transmission lines through existing infrastructure. The amount, frequency, and operational strategy for the groundwater injection was not developed as a part of this project, but for the purposes of this analysis, it was assumed that any water injected would be injected in equal quantities at each of the 15 sites. The extracted treated surface water was assumed to be treated at either a new groundwater treatment plant (eight) located adjacent to the injection/extraction well, or at an existing groundwater treatment plant (seven).

The facilities required to locate the pipelines to and from each site were not developed as a part of this analysis. It was considered that the utilization of existing facilities would be maximized to the extent possible, and significant modeling and research would be required to identify the most suitable locations for conveyance facilities or pipeline upsizing.

The overall amount of water diverted by EBMUD and SCWA in Scenario 3 is the same in the Base Project, though it is assumed that only 90% of the water percolated by EBMUD can be extracted. This accounting for losses was not continued over into the SCWA conjunctive use in the Central basin, since SCWA helps manage the basin, and the water not recovered by these extraction wells would likely be pumped out by another well within the SCWA service area.

Figure A6: Map of Existing and Planned Groundwater Treatment Facilities



FREEPORT REGIONAL WATER AUTHORITY

Surface Water Operational (CALSIM) Modeling: CALSIM modeling of Scenario 3 was completed. The results of the modeling effort generally showed slightly smaller reductions in the amount of storage and deliveries, compared to the Base Project. The details of the modeling effort were:

- There was available water from the groundwater bank to supply EBMUD and SCWA during the modified diversion schedule, except for the 150.8 TAF of dry year diversions required during the 1928-1934 drought period;
- Total available North of Delta CVP storage decreased by 8 TAF from the No Action Alternative during all years, and increased by 5 TAF during the 1928-1934 drought. This increase is likely due to the elimination of SCWA CVP during this dry period.
- The amount of SCWA Excess and Other Water increased during wet years to offset a reduction in CVP water deliveries.
- Oroville Storage decreased by 9 TAF and 1 TAF during all years and the dry period examined, respectively.
- Both North and South CVP total deliveries were similar to the No Action Alternative.
- SWP total deliveries were virtually unchanged from the No Action Alternative.
- There was no change to Delta's X2 position, as compared to the Base Project.
- No change to Delta salinity is anticipated based on predicted Delta flows as compared to the Base Project.

Similar to Scenarios 1 and 2, during the drought of 1928 through 1934, not enough water had been banked to provide water to EBMUD during this entire time period. Dry year diversions continued for SCWA according to the assumptions identified. During the third and subsequent years of a drought, with groundwater storage depleted to background levels, dry year diversions were required to meet the project purpose of dry year deliveries to EBMUD, and therefore, the range of project impacts still included occasional dry year diversions.

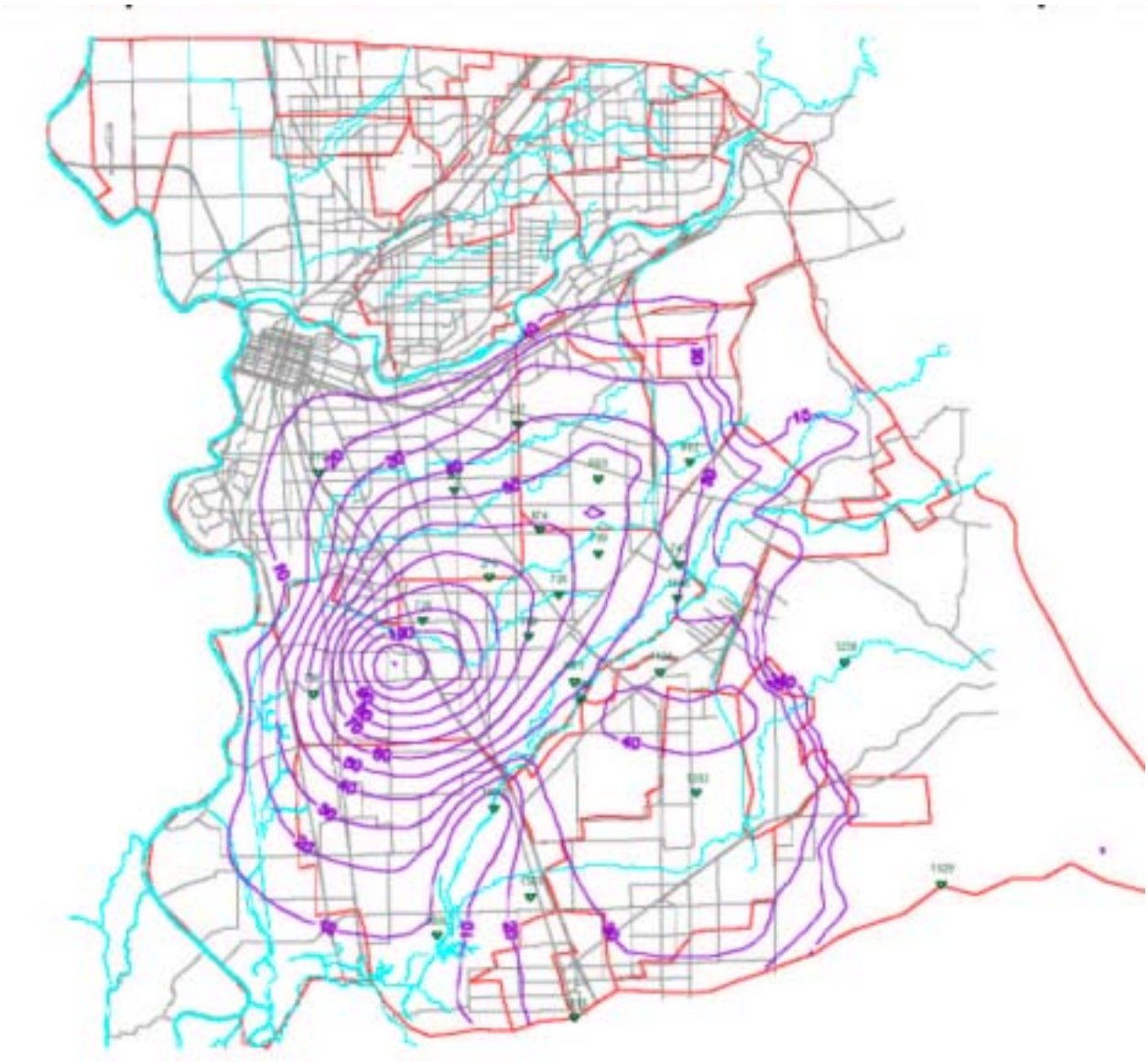
Groundwater Operational (IGSM) Modeling: IGSM modeling was completed in a manner similar to Scenarios 1 & 2, which utilize the 1990 condition. The introduction of annual surface water deliveries in excess of the historical demands resulted in widespread elevation increases of the water table. These increases were distributed throughout the Central and Galt Basin, but did not inundate any of the nodes identified in the model. Future analyses will identify the impact of this project at the 2020 level of development.

IGSM modeling of Scenario 3 was prepared based on the 1990 baseline water demands in the Central Basin. The use of this historical data results in annual surface water deliveries to the Central Basin that exceed the quantity pumped from the groundwater basin by approximately 40,000 AFY. Consequently, the IGSM model assumes that this additional surface water is injected into the groundwater basin. The annual injection of a large volume of water results in the filling of groundwater depressions in the Elk Grove area and areas of the Galt Basin, and widespread increases of up to 90 feet in the groundwater table. Figure A7 shows a sample hydrograph from this simulation. Most areas of the Central and Galt Basin within the proposed project area will have groundwater elevations increased by at least 20 feet. Groundwater also percolates into Layers 2 & 3, the deeper subsurface strata, resulting in groundwater levels increasing in those Layers by similar amounts.

It is important to note that the IGSM model assumes that based on historical water demands, annual Zone 40 groundwater pumping averaged approximately 38,000 AFY between 1922 – 1994. The SCWA has estimated that the long-term annual Zone 40 average demands between 1995 – 2064 are approximately

108,000 AFY, while others have estimated between 90,000 – 100,000 without pumping from the Aerojet and Kiefer sites. Modeling at the 2030 condition was not immediately available, since those demand conditions have not been finalized. It is expected that these data files will be available following the completion of the Zone 40 Master Plan. For a more accurate representation of the impacts to the groundwater basin, additional modeling using the 2030 condition is required.

Figure A7: Scenario 3 Groundwater Contour Map – Difference between Scenario 3 and No Action Alternative



The net result of this groundwater modeling effort shows that if this Scenario had been operational between 1922 – 1994 with the same level of demand, groundwater elevations in the Central and Galt Basin would be significantly higher than if the Scenario had not been in place. No conclusions about the groundwater impacts can be drawn from these results at this time for future demands.

Incremental Capital Cost Evaluation: The costs identified in Table A4 for Scenario 3 are in addition to the costs required to implement Scenario 2 ($104,000,000), as well as the costs to implement the Base Project ($690 million). Components of Scenario 3 that are not included in this evaluation are costs that are already included in the Base Project, such as the surface water treatment plant, and the conveyance facilities to and from the treatment plant. However, the costs for the additional conveyance facilities to and from the injection/extraction wells, the injection/extraction wells, and the groundwater treatment facilities are included in this evaluation.

The cost estimate for Scenario 3 is based on a number of assumptions, including:

- Pipelines capital cost is $10 per inch diameter per lineal foot. Note that these costs are slightly higher than the other Scenarios, since construction is typically occurring within existing city street right of ways.
- It was assumed that there would be one main transmission pipeline from the proposed treatment plant site, extending south on Bradshaw and east on Elk Grove Boulevard to the Site #1. This pipeline would average 42-inches in diameter. Another 24-inch pipeline would extend east and north to Mather AFB to Sites #10 – 12; and
- Similar sized treatment plants and injection wells would be located at each site. Each site would have the ability to inject, extract, and treat approximately 600 AF/month, or approximately 6.5 MGD.

It is expected that the final cost for this alternative would be determined during the development of additional design details. Based on these cost assumptions, a cost estimate for Scenario 3 is presented in Table A4. This cost estimate is developed only to a conceptual level, which typically correlates to a level of accuracy equivalent to -30%/+50%.

Table A4: Scenario 3 Conceptual Cost Estimate

Project Elements	Unit Price	Units	Quantity	Cost
Conveyance Facilities				
42-inch transmission pipeline	$420	LF	32,000	$13,000,000
24-inch transmission pipeline	$240	LF	15,000	$3,600,000
18-inch to/from transmission pipeline	$180	LF	11,000	$2,000,000
Groundwater Treatment Plant – new (including pumping)	$3,000,000	EA	15	$45,000,000
Upgrades to Existing Groundwater Treatment Plant				
Injection/Extraction Wells	$500,000	EA	15	$7,500,000
Pipeline Appurtenances (Fittings, line valves, turnouts, etc)	10%	%		$1,900,000
Subtotal				**$9,400,000**
Construction Contingency (30%)	30%	%		$22,000,000
Total Construction Cost				**$95,000,000**
Engineering, Legal, Admin, Permits, Right of Way (25%)	25%	%		$24,000,000
Scenario 3 only facilities				**$119,000,000**
Scenario 2 Facilities				**$104,000,000**
Overall Scenario 3 Total				**$223,000,000**

Notes:
1. Costs are rounded to two significant figures.
2. 24-inch assumed to travel along Florin Road from Bradshaw Road to Eagles Nest Road, then North on Eagles Nest Road to Site 10.
3. 42-inch assumed to travel along Bradshaw Road from Florin Road to Elk Grove Boulevard, then West on Elk Grove Boulevard to Site #1.
4. Each 18-inch pipeline to/from groundwater treatment plant was assumed to be 750 feet long.
5. No costs for special construction are included e.g. freeway crossings, creek crossings, microtunneling).

SCENARIO 4 – WET YEAR GROUNDWATER STORAGE FOR SCWA (INJECTION IN CENTRAL BASIN)

Scenario 4 is the same as Scenario 3, except that it removes the Wet Year/Groundwater Storage facilities for EBMUD, and changes the EBMUD diversion schedule to match the Base Project. All SCWA deliveries and operations would remain the same as Scenario 3.

Surface Water Operational (CALSIM) Modeling: CALSIM modeling of Scenario 4 was completed. The results of the modeling effort generally showed similar results as Scenario 2, with minor variations in the amount of North of Delta CVP storage, CVP Total Deliveries – South and SWP Total Deliveries. The details of the modeling effort were:

- There was available water to supply SCWA during the modified diversion schedule;
- Total available North of Delta CVP storage decreased by 21 TAF from the No Action Alternative during all years, 24 TAF during dry years.
- Oroville storage decreased by 14 TAF from the No Action Alternative during all years, and 26 TAF during dry years.
- Both North and South CVP total deliveries were similar to the No Action Alternative during all years, but South CVP total deliveries decreased by 9 TAF during dry years.
- SWP total deliveries were 4 TAF and 14 TAF during all and dry years, respectively, compared to the No Action Alternative.
- There was no change to Delta's maximum or minimum X2 position, as compared to the No Action Alternative.
- No change to Delta salinity is anticipated based on predicted Delta flows as compared to the Base Project.

Groundwater Operational (IGSM) Modeling: IGSM modeling of Scenario 4 was not completed, and the information presented in this summary was estimated based on the results of Scenario 3.

Groundwater level estimates were prepared based on the 1990 baseline water demands in the Central Basin. The use of this data results in annual surface water deliveries to the Central Basin that exceed the quantity pumped from the groundwater basin by approximately 40,000 AFY. Consequently, the model would inject this additional surface water into the groundwater basin. The annual injection of a large volume of water results in the filling of groundwater depressions in the Elk Grove area and areas of the Galt Basin, and widespread increases of the groundwater table.

It is important to note that the IGSM model assumes that based on historical water demands, annual Zone 40 groundwater pumping averaged approximately 38,000 AFY between 1922 – 1994. The SCWA has estimated that the long-term annual Zone 40 average demands between 1995 – 2064 are approximately 108,000 AFY, while others have estimated between 90,000 – 100,000 without pumping from the Aerojet and Kiefer sites. Modeling at the 2030 condition was not immediately available, since those demand conditions have not been finalized. It is expected that these data files will be available following the completion of the Zone 40 Master Plan. For a more accurate representation of the impacts to the groundwater basin, additional modeling using the 2030 condition is required.

Incremental Capital Cost Evaluation: The cost for Scenario 4 is the same as identified in A6, except the EBMUD groundwater recharge facilities are removed. The costs for Scenario 4 are identified in Table A5.

Table A5: Scenario 4 Conceptual Cost Estimate

Project Elements	Unit Price	Units	Quantity	Cost
Conveyance Facilities				
42-inch transmission pipeline	$420	LF	32,000	$13,000,000
24-inch transmission pipeline	$240	LF	15,000	$3,600,000
18-inch to/from transmission pipeline	$180	LF	11,000	$2,000,000
Groundwater Treatment Plant – new (including pumping)	$3,000,000	EA	15	$45,000,000
Upgrades to Existing Groundwater Treatment Plant				
Injection/Extraction Wells	$500,000	EA	15	$7,500,000
Pipeline Appurtenances (Fittings, line valves, turnouts, etc)	10%	%		$1,900,000
Subtotal				**$9,400,000**
Construction Contingency (30%)	30%	%		$22,000,000
Total Construction Cost				**$95,000,000**
Engineering, Legal, Admin, Permits, Right of Way (25%)	25%	%		$24,000,000
Scenario 4 only facilities				**$119,000,000**

Notes:
1. Costs are rounded to two significant figures.
2. 24-inch assumed to travel along Florin Road from Bradshaw Road to Eagles Nest Road, then North on Eagles Nest Road to Site 10.
3. 42-inch assumed to travel along Bradshaw Road from Florin Road to Elk Grove Boulevard, then West on Elk Grove Boulevard to Site #1.
4. Each 18-inch pipeline to/from groundwater treatment plant was assumed to be 750 feet long.
5. No costs for special construction are included (e.g., freeway crossings, creek crossings, microtunneling).