Chapter 3

Major Issue Responses

Introduction

This chapter contains responses to similar comments that were received from several commenting parties. Where appropriate in the responses to comments in subsequent chapters of this final document, the reader is referred to the major issue responses contained in this chapter. The responses included in this chapter are:

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1) Alternatives Considered

Comment:

The methodology used for screening alternatives considered in the 1997 Draft EIR/EIS was flawed, failing to consider all feasible alternatives in the Alternatives Screening Report and improperly limiting the scope of the alternatives that were actually analyzed in the 1997 Draft EIR/EIS. Moreover, the 1997 Draft EIR/EIS and 2000 REIR/SEIS failed to consider a reasonable range of feasible alternatives.

Response:

Both CEQA and NEPA require an evaluation of alternatives. Relevant requirements under each law are discussed below.

Prior to the preparation of an EIR, CEQA requires the lead agency to tentatively identify and consider a broad list of potentially feasible alternatives to the proposed project. After review, the lead agency rejects those alternatives determined to be infeasible and conducts a detailed evaluation of the remaining alternatives in the EIR. "In determining the nature and scope of alternatives to be examined in an EIR, the Legislature has decreed that local agencies shall be guided by the doctrine of 'feasibility' (Citizens of Goleta Valley v. Board of Supervisors 52 Cal. 3d 553, 565 [1990]; Sequoah Hills Homeowners Assn. v. City of Oakland, 23 Cal.App.4th, 704, 715 [1993]). To be "feasible," an alternative must be "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors" (State CEQA Guidelines, Section 15364).

Because CEQA does not specify the number or scope of alternatives that must be considered in an EIR, the adequacy of the range of the alternatives is instead judged against a "rule of reason that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice" (Citizens of Goleta Valley, supra at p. 565; see also State CEQA Guidelines Section 15126.6). An EIR must "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects" [emphasis added] (State CEQA Guidelines, Section 15126.6[a]; and Citizens of Goleta Valley v. Board of Supervisors 52 Cal. 3d 553, 565 [1990]). "An EIR is not required to consider alternatives which are infeasible" (State CEQA Guidelines Section 15126.6[a]).

The range of alternatives to be analyzed in an EIR therefore turns upon the specificity of the lead agency's objectives. As noted above, the alternatives to be analyzed in an EIR must feasibly attain most of the basic objectives of the proposed project (State CEQA Guidelines, Section 15126.6[c]). If the requirements for the proposed project are specific and limited in scope, the feasible alternatives will likewise be limited. For example, in Save San Francisco Bay Assn v. San Francisco Bay Conservation and Development Comm'n, 10 Cal.App.4th 908 (1992), the lead agency properly narrowed the range of alternatives by defining a relatively narrow objective of creating a "bay-oriented aquarium." Based on this objective, the agency was not required to evaluate alternatives that did not include siting the project near the bay.

Moreover, an EIR does not need to analyze alternatives that are "remote or speculative," i.e., unlikely as a practical matter to be capable of implementation within a reasonable time (Bowman v. City of Petaluma, 185 Cal.App.3d 1065, 1084 [1986]; Citizens of Goleta Valley, supra, at 566). This includes alternatives that could be implemented only after significant changes in governmental policy or legislation (San Francisco Ecology Center v. City and County of San Francisco, 48 Cal.App.3d 854, [1975]; Residents Ad Hoc Stadium Comm. v. Board of Trustees, 89 Cal.App.3d 274, 287 [1979] [agency properly rejected a jointly funded alternative with city based on city's disinterest]).

The lead agency's determination of the alternatives to be considered in an EIR must be upheld if substantial evidence supports the agency's decision (Pub. Resources Code, Section 21168.5; National Parks & Conservation Assn. v. County of Riverside, 71 Cal.App.4th 1341, 1353 [1999]; Barthelemy v. Chino Basin Mun. Water Dist., 38 Cal.App.4th 1609, 1620; [A] court must resolve any factual issues in favor of the lead agency, if supported by substantial evidence).

Like CEQA, NEPA does not require that an agency consider every possible alternative in an EIS, only those that are reasonable and feasible (40 CFR Section 1502.14[a]-[c]; Gorman v. Bartch, 152 F.3d 907 [8th Cir. 1998]; National Wildlife Fed. v. Federal Energy Reg. Comm'n, 912 F.2d 1471 [D.C. Cir. 1990)][agency not required to consider interstate water transfer as alternative to water supply project; Miller v. United States, 654 F.2d 513 [8th Cir. 1981] [need not consider regional water supply rather than local water supply]). "It is well-settled that under NEPA the range of alternatives that must be discussed is a matter within an agency's discretion" (Friends of the Ompompanoosuc v. Federal Energy Regulatory Comm'n, 968 F.2d 1549, 1558 [2d Cir. 1992] [holding that FERC need not consider conservation as an alternative to hydroelectric power station]; Sierra Club v. Babbitt, 69 F. Supp 2d 1202, 1232 [E.D. Cal. 1999]).

The range of alternatives that must be considered is properly limited to those reasonably related to the purposes and objectives of the project (Akiak Native Community v. U.S. Postal Service, 213 F.3d 1140, 1148 [9th Cir. 2000]; and Trout Unlimited v. Morton, 509 F.2d 1276, 1286 [9th Cir. 1974]; Miller, 654 F.2d 513 [8th Cir. 1981]). The reasonableness of the range of alternatives considered in an EIS depends on "the nature of the proposal and the facts in each case" (Council on Environmental Quality ("CEQ"), "Forty Most Asked Questions Concerning CEQ's NEPA Regulations," Question 1, 46 Fed. Reg. 18026, 18027 [1981]). Project alternatives derive from an EIS's "purpose and need" section, which briefly defines "the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action" (40 CFR Section 1502.13). For example, in Miller, Congress authorized the construction of a new impoundment facility after a federal navigation system project contaminated the local water supply. Opponents suggested that a regional water facility was the best alternative. The court held that "[t]he scope of the present project and the nature of the congressional authorization" indicated that a regional facility was not a reasonable alternative.

The range of alternatives is also governed by the project objectives that are defined by the federal agency. "The scope of the alternatives to be considered is a function of how narrowly or broadly one views the objective of an agency's proposed action"(City of New

York v. United States Dept. Of Transp., 715 F.2d 732, 743 [2nd Cir. 1983]). Moreover, it is the agency that has:

> the responsibility for defining at the outset the objectives of an action . . . As the phrase "rule of reason" suggests, we review an agency's compliance with NEPA's requirements deferentially. We uphold an agency's definition of objectives so long as the objectives that the agency chooses are reasonable, and we uphold its discussion of alternatives so long as the alternatives are reasonable and the agency discusses them in reasonable detail (Citizens Against Burlington, Inc. v. Busey 938 F.2d 190, 196 [D.C. Cir. 1991]).

Once the federal agency has defined the project purpose, need and objectives, NEPA and CEQ NEPA Regulations (40 CFR 1502.14[a]) require that it:

> Rigorously explore and objectively evaluate all reasonable alternatives and for alternatives that were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.

Screening criteria for feasibility under NEPA are also to be developed by the federal lead agency since "[w]ithout such criteria, an agency could generate countless alternatives. Worse yet, in an attempt to avoid NEPA litigation, an agency might engage in the empty exercise of generating and 'considering' countless alternatives, even alternatives known to be unacceptable at the outset" (Idaho Conservation League v. Mumma, 956 F.2d 1508, 1522 [9th Cir. 1992]).

The alternatives screening criteria can include many factors, including cost, technical issues, and environmental impacts. For example, in Animal Defense Council v. Hodel, 840 F.2d 1432, 1441 (9th Cir. 1987), the court upheld Reclamation's EIS for extension of the Central Arizona Project canal to Tucson, including the alternatives analysis. The district court had rejected as infeasible a groundwater recharge alternative, because recharge was a method of water storage and not part of the federal Central Arizona Project aqueduct project. The Ninth Circuit agreed, finding that the decision of whether a recharge program should proceed was a local decision for the City of Tucson and not Reclamation. Because recharge was not part of the federal project, Reclamation was not required to discuss it in the EIS. Nonetheless, Reclamation studied and rejected the alternative because it was 1) less cost-effective and 2) lacked support from the City and the Southern Arizona Water Resources Association.

Reclamation's 2000 draft NEPA handbook sets forth that agency's method for screening alternatives:

> Other alternatives considered, but not found to be technically feasible or reasonable, should be presented briefly along with the reasons they were eliminated from further analysis. Examples of reasons for elimination are failure of the alternative to meet the requirements of the purpose and need for the action, the alternative cannot be technically implemented, the alternative is prohibitively higher in cost or environmental impacts than the other alternatives, or the alternative cannot be reasonably implemented. A complete listing of all alternatives seriously considered

> or publicly discussed in the scoping process should be included. If the public involvement process was unusually complex, it may be appropriate to provide an appendix that summarizes those alternatives identified during public involvement and later considered and eliminated (Draft Handbook, pp. 8-11).

For this project, EBMUD and Reclamation complied with the alternatives screening procedures required by CEQA and NEPA. First, EBMUD and Reclamation developed and identified project objectives in the 1997 Draft EIR/EIS and the alternatives screening report that is Appendix B to the 1997 Draft EIR/EIS. The 1997 Draft EIR/EIS states that the project's general purpose is to obtain a supplemental water source for EBMUD's customers, with the actual project objective to allow EBMUD to make use of its water service contract with Reclamation for delivery of American River water, consistent with the conditions sets forth in the Hodge Decision, so as to achieve all of the following:

- Maintain the high quality of EBMUD's raw and treated water supply.
- Increase system reliability by providing an alternate source of supply to EBMUD's Mokelumne River supply in case of a catastrophic event or scheduled major maintenance at Pardee Dam or Reservoir.
- Provide increased operational flexibility.
- Reduce customer deficiencies.
- Increase opportunities for protection and enhancement of Mokelumne River resources.
- Contribute to achieving EBMUD's planning objectives established as part of the Updated WSMP. (1997 Draft EIR/EIS, p. 2-1).

Based upon the purpose and need and EBMUD's established project objectives, EBMUD and Reclamation then considered a wide range of alternatives, beginning with the extensive alternatives evaluation performed for the updated WSMP. "The purpose of the Updated WSMP was to identify the actions and projects necessary to provide adequate protection and enhancement of the lower Mokelumne River fishery in balance with an adequate water supply for EBMUD customers through 2020" (1997 Draft EIR/EIS, Appendix B, p. 2-5).

A subsequent evaluation in the Alternatives Screening Report to identify reasonable alternatives to be included in the EIR/EIS and to set forth the alternatives screening process was conducted (1997 Draft EIR/EIS, p. 2-2; Appendix B). As part of this report, EBMUD and Reclamation developed specific screening criteria to ensure that alternatives would meet project objectives, including the use of high-quality water supply, increased system reliability and flexibility, and minimization of costs to ratepayers (1997 Draft EIR/EIS, Appendix B, pp. 4-1 though 4-9). These criteria were not developed to intentionally eliminate feasible alternatives, but instead to ensure that such alternatives would meet project objectives as required by CEQA and NEPA. The screening report describes EBMUD's implementation of extensive conservation and water reclamation efforts, which include up to 25 percent rationing in dry years. The need for the project is premised on full implementation of these programs. The screening procedure used in the Alternatives

Screening Report only eliminated alternatives that "could clearly be shown to fail one or more of the screening criteria."

The Alternatives Screening Report evaluated numerous alternatives, relying upon the screening criteria to determine if the alternatives met project objectives and to determine the least environmentally damaging practicable alternative (1997 Draft EIR/EIS, p. 2-2; Appendix B, Table 5-1; pp. 5-1 through 5-9). As stated in the 1997 Draft EIR/EIS:

> The screening process involved evaluation of the ability of each alternative to meet the project objectives and other specific screening criteria useful in identifying the least environmentally damaging practicable alternative . . . To be considered a feasible option for the proposed Supplemental Water Supply Project, the alternative needed to be reasonably capable of meeting the defined screening criteria. If an alternative could clearly be shown to be incapable of meeting one or more criteria, the alternative was eliminated from further consideration in this EIR/EIS (1997 Draft EIR/EIS, p. 2-2).

The Alternatives Screening Report considered a very broad range of alternatives, including a Delta delivery alternative and a joint project with San Joaquin County involving conjunctive use. (See "Delta and Sacramento River Alternatives" and "San Joaquin County Conjunctive Storage" major issue responses.) Applying the screening criteria set forth in the 1997 Draft EIR/EIS, EBMUD and Reclamation then eliminated alternatives that failed to meet project objectives, providing an in-depth explanation for why each alternative was deemed infeasible (1997 Draft EIR/EIS, Appendix B, Table 5-1; pp. 5-1 through 5-9). It should be reiterated that the primary objective of this project is to allow EBMUD to make use of its water service contract with Reclamation for delivery of American River water. It is appropriate under CEQA and NEPA for the lead agencies to narrowly define project objectives. (See Save San Francisco Bay Assn. v. San Francisco Bay Conservation and Development Comm'n, 10 Cal App. 4th 908 [pgs. 924-929][1992]; City of New York v. United States Department of Transp., 715 F2d, 732, 743 [2nd Cir. 1983].)

During the public comment period on the 1997 Draft EIR/EIS, EBMUD and Reclamation received numerous comment letters, many of which discussed the selection of alternatives. In response to these comments and issues raised during negotiations with the City and County of Sacramento, EBMUD and Reclamation elected to prepare additional alternatives to respond to these concerns. Pursuant to Section 15088.5 of the State CEQA Guidelines and Section 1502.9 of the CEQ NEPA regulations, EBMUD and Reclamation then supplemented the CEQA/NEPA analysis for the Project in October 2000, releasing a Recirculated Environmental Impact Report/Supplemental Environmental Impact Statement (REIR/SEIS) on the Supplemental Water Supply Project. (See Chapter 2, Project Update.) EBMUD and Reclamation believe the alternatives screening process for, and the alternatives analyzed within the 1997 Draft EIR/EIS, fully complied with CEQA and NEPA. However, as noted above, EBMUD and Reclamation elected to respond to public comments and to work towards development of a mutually acceptable point of diversion through an analysis of additional alternatives.

The 2000 REIR/SEIS analyzed the following alternatives:

Alternative 4: EBMUD-only Lower American River Delivery

This alternative is based upon the City and County of Sacramento's modified proposal, dated June 8, 1999. This alternative combines many of the basic facility elements of Alternative 3, Joint Water Supply, as described in the 1997 Draft EIR/EIS, with many of the basic operational concepts of Alternative 2, Folsom South Canal Connection. Alternative 4 would involve the construction of a new intake on the lower American River at the Site 5 location as described in the 1997 Draft EIR/EIS (2000 REIR/SEIS, pp. 2-2 through 2-15).

Alternative 5: Sacramento River Delivery

This alternative combines many of the basic facility and operational elements of Alternative 3, Joint Water Supply, as described in the 1997 Draft EIR/EIS, with the basic facility elements of Alternative 2, Folsom South Canal Connection. Alternative 5 would involve the construction of a new intake on the Sacramento River immediately downstream of its confluence with the lower American River and near the location of the City of Sacramento's existing intake to the Sacramento River Water Treatment Plant (2000 REIR/SEIS, pp. S-9, 10).

Alternative 6: Freeport East Delivery

This alternative is operationally similar to Alternative 5, Sacramento River Delivery, described above but would involve the construction of a new intake on the Sacramento River upstream of the Freeport Bridge at the community of Freeport (2000 REIR/SEIR, pp. 2-19 through 2-21).

Alternative 7: Freeport South Delivery

This alternative is operationally similar to Alternative 5, Sacramento River Delivery, described above but would involve the construction of a new intake on the Sacramento River upstream of the Freeport Bridge at the Community of Freeport (2000 REIR/SEIR, pp. 2-21 through 2-24).

Alternative 8: Bixler Delivery

This alternative would involve the construction of a new intake in the Delta on Indian Slough adjacent to the Mokelumne Aqueducts at the location known as Bixler (2000 REIR/SEIR, pp. 2-24 through 2-26.

As discussed above, CEQA requires that an EIR consider a reasonable range of alternatives to a project that (1) offer substantial environmental advantages over the project proposal . . . and (2) may be feasibly accomplished in a successful manner" (Citizens of Goleta Valley v. Board of Supervisors, 52 Cal.3d 553,566 [1990]). Such alternatives should attain most of the basic objectives of the project but avoid or substantially lessen any significant effects (State CEQA Guidelines, Section 15126.6). Under NEPA, an alternatives analysis is judged against the rule of reason, and an agency need only consider a reasonable range of options that could accomplish the agency's objectives (40 C.F.R. 1502.14; Forty Questions No. 1). The eight alternatives considered in the two environmental review documents constitute a reasonable range of alternatives as required by CEQA and NEPA.

As noted above, the purpose of a CEQA alternatives analysis is to determine whether there are less environmentally damaging methods of achieving most of the project objectives. The project alternatives carried forward into the 1997 Draft EIR/EIS have very few significant unavoidable project-level impacts, and, moreover, there is no substantial evidence that any of the other alternatives considered in the Alternatives Screening Report would substantially lessen or avoid environmental impacts deemed to be significant. This conclusion is supported by the 2000 REIR/SEIS's conclusions that none of the alternatives is clearly environmentally superior, nor would new significant unavoidable environmental impacts result from implementation of any of the action alternatives. The alternatives screening process and the expanded alternatives analysis fully comply with the requirements of CEQA and NEPA.

2) Delta and Sacramento River Alternatives

Comment:

Alternatives that would take delivery of EBMUD's CVP water from the Sacramento River or Delta should have been considered in the EIR/EIS. Other urban water purveyors rely on these sources for drinking water and the Sacramento River or Delta sources can be economically treated to meet urban drinking water standards.

Response:

See "Alternatives Considered" Major Issue Response.

As noted in Chapter 5 of Appendix B of the 1997 Draft EIR/EIS, Sacramento River and Delta delivery alternatives were considered but originally rejected from further analysis in the 1997 Draft EIR/EIS because of concerns about health risks related to water quality, potential for adverse environmental impacts and economic costs of alternatives. The key water quality criterion is that an alternative must maintain the high quality of both EBMUD's raw and treated water supply while minimizing health risks and health risk uncertainties for EBMUD customers. As described in detail below, this is a sound water supply planning principle and the alternatives considered in the screening analysis were developed so as not to degrade the quality of EBMUD's existing supply.

As fully described on page 4-2 of Appendix B of the 1997 Draft EIR/EIS, 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). Quantitative information regarding source water quality is provided in Table A-4, Attachment A of Appendix B to the 1997 Draft EIR/EIS. 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 Sources. While this policy memo is generally directed towards uses of impaired 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 best 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 contaminant 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 sources, 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 and safety 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 3-3)

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 specified 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 chlorine 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 in American River, Sacramento River, and Delta waters identified of most concern with respect to production of 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 methyl 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 waters. 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 of 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 bromine-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 of 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 it is true that Sacramento River and Delta water can be treated to meet drinking water quality standards and that many users, including the City of Sacramento and Contra Costa Water District, 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. It is believed 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.

In an effort to ensure that all alternatives were reasonably considered, EBMUD developed the alternatives to maximize their ability to meet the various criteria, including the water quality criterion, and were not eliminated without thorough consideration. For alternatives that would rely on Sacramento River or a Delta point of delivery, it was determined that significant treatment would be needed to avoid degradation of the raw Mokelumne River supply. The alternatives were then evaluated. Sacramento River and Delta delivery alternatives were not considered feasible and thus not carried forward in the 1997 Draft EIR/EIS because they did not minimize health risks and they did not meet the economic criteria.

As Judge Hodge noted in his opinion in EDF et al. v. EBMUD , modulating the cost estimates "does not alter the fundamental fact that the cost differentials are significant and

constitute a factor which must be considered in the selection of a diversion site" (p. 107). These alternatives also did not have other advantages that would offset their inability to meet these criteria (Table 5-1 in Appendix B to the 1997 Draft EIR/EIS). Finally, given the environmental constraints on further diversions from the Sacramento River and Delta (see Appendix B, pages 5-5 and 5-6), there is no evidence that alternatives that would take delivery of EBMUD's CVP entitlement from the Sacramento River or Delta would result in less substantial environmental effects than those identified in the 1997 Draft EIR/EIS.

In his opinion in EDF et al. v. EBMUD, Judge Hodge emphasized that:

> "At the outset, it should be noted that no point of diversion is without ecological consequences. It is simply not the case that diversion at the Folsom-South Canal creates an environmental disaster, while diversion on the Sacramento River or Delta poses only inconsequential hazards. The Delta and Sacramento River waterways are part of a complex natural and artificial water system replete with dikes, channels, aqueducts, pipes and an elaborate pumping system so powerful so that the very flow of the San Joaquin River can be reversed. In some instances, the Delta environment is so precarious for fish survival, that salmon and striped bass from the Nimbus Hatchery must be transported around the Delta and deposited in the Carquinez Straits to ensure their survival." (p. 105)
>
> "One major problem of this pumping operation is the loss of fish due to entrainment (the process by which small fish are sucked into diversion works) an impingement (when larger fish are pressed by the current against the screens and suffocate). Dr. Charles Hanson estimated that Delta water diversion by EBMUD would cause the loss of 15 million striped bass larvae (the equivalent of a loss of 7,500 six-inch striped bass) due to entrainment. (See exhibit 4701). Similarly, Don Kelley testified that diversion from the Delta or Sacramento River would exacerbate existing problems for fish in these areas. He estimated that EBMUD's diversion from the Clifton Court Forebay would cause a loss of 3.5 million striped bass per year and a loss of about 36,000 salmon. While the magnitude of the loss is disputed, the fact of substantial losses cannot be. For these reasons, both Don Kelley and Dr. Charles Hanson recommended that, from a fisheries point of view, the delivery of water to EBMUD through the Folsom-South Canal is preferable to either a Delta diversion or diversion from the Sacramento River." (p. 106)

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 disurptors
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.

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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).

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.

Originally published Sunday, May 3, 1998

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

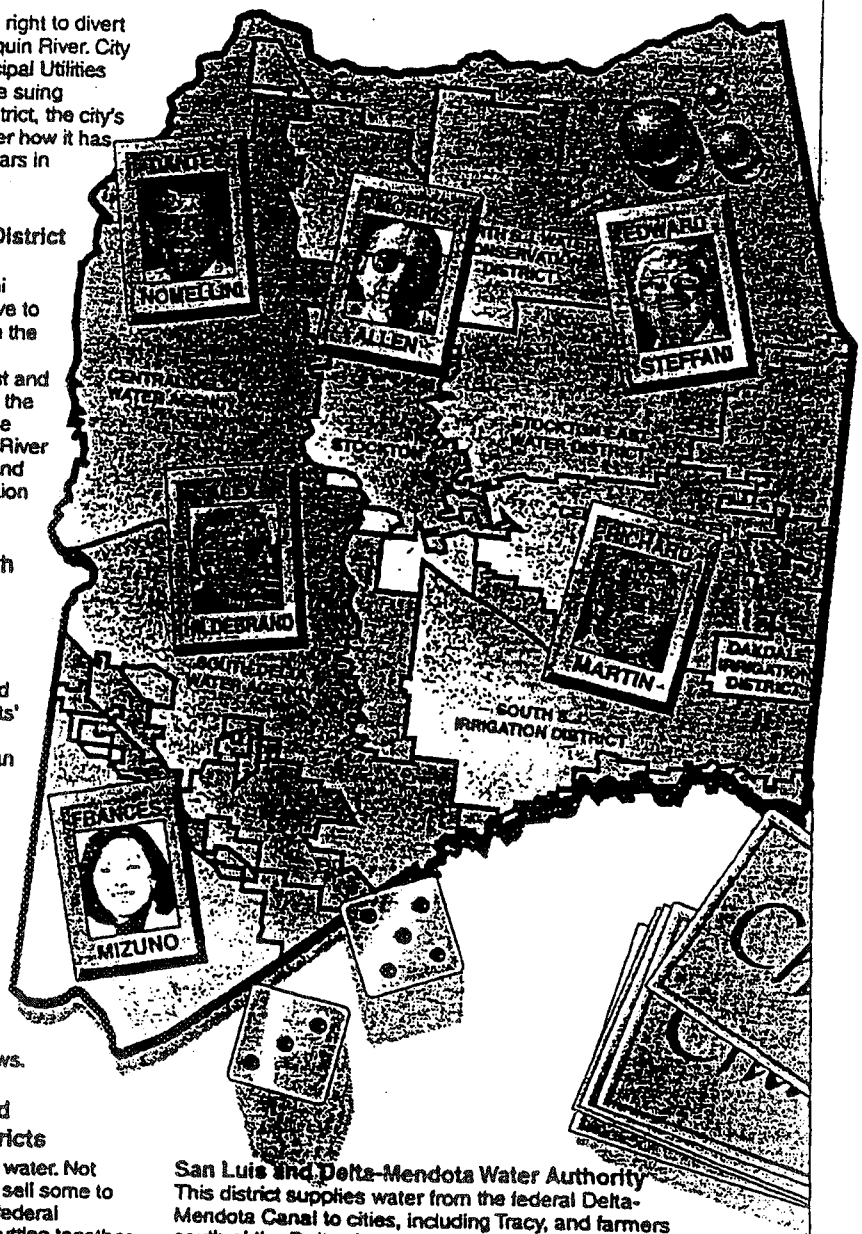
Wateropoly

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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77045-22588

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
ROOM 701
STOCKTON, CALIFORNIA 95202

FOURTH DISTRICT

TELEPHONE: 468-3113
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.

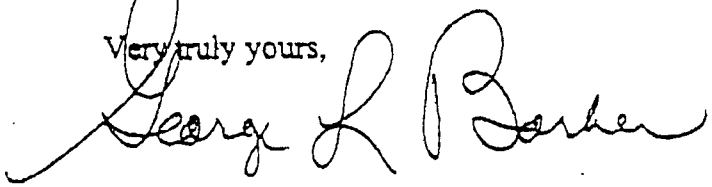
We know a major issue for all concerned will be "how much will it cost" and "how will we pay for it." Until the project becomes more firm after negotiations we cannot come to any meaningful conclusion as to cost. We do know cost will be a major issue for all concerned.

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
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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ESTABLISHED 1903

77045-24521

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

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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

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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

72850-1

SAN JOAQUIN COUNTY
FLOOD CONTROL & WATER
CONSERVATION DISTRICT
P. O. BOX 1810
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STOCKTON, CALIFORNIA 95201
TELEPHONE (209) 468-3000
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MANUEL LOPEZ
DIRECTOR OF PUBLIC WORKS
FLOOD CONTROL ENGINEER

June 7, 2000

M E M O R A N D U M

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

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.

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EBMUD

Publication: The Record

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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.

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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."

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age:

4) Relationship to CALFED

Comment:

The EIR/EIS should demonstrate that the project decision is consistent with and supports CALFED. The EBMUD/CALFED combined facility alternative identified in the screening report was improperly eliminated.

Response:

The Record of Decision and CEQA compliance for CALFED was certified on August 28, 2000. Many of the potential CVPIA actions are incorporated in CALFED work and the SWSP hydrologic modeling.

The potential for an EBMUD/CALFED combined facility is described in the Alternatives Screening Report (Appendix B to the 1997 Draft EIR/EIS). Such an alternative did not meet the timing and water quality screening criteria in the 1997 Draft EIR/EIS (pages 5-7 to 5-8). The analysis in Appendix B also notes that the potential financial benefit of shared facilities may not include treatment because different water users have different conveyance facilities from the Delta (canal vs. pipe) and treat water at different locations. The alternative was screened from further consideration and nothing associated with the July 2000 Final CALFED Draft Programmatic EIR/EIS or August 2000 ROD changes the conclusions of the Alternatives Screening Report. This potential alternative was not included or analyzed as part of the CALFED program. One of the complimentary actions that CALFED states was not analyzed in the Final CALFED Programmatic EIS/EIR is a Bay Area Regional Project. This effort involves Bay Area water districts working cooperatively to address water quality and reliability concerns on a consensual basis. The supplemental EIS for the EBMUD-Reclamation contract is described by CALFED as something that may be relevant and complementary to actions in the CALFED programmatic documents. (CALFED ROD, p. 69.)

None of these proposed CALFED actions address EBMUD's Supplemental Water Supply Project, nor are they in conflict therewith. Additional environmental documentation will likely be necessary for a Bay Area Regional Project if and when potential project components are identified. The Bay Area Regional Project may be complementary both to CALFED actions and EBMUD's Supplemental Water Supply Project.

Chapter 18 of the Draft EIR/EIS describes the potential cumulative impacts of the Supplemental Water Supply Project in conjunction with the CALFED program and the revised PROSIM modeling does not change any of the conclusions regarding the significance of impacts in Chapter 18 of the Draft EIR/EIS.

The CALFED ROD sets out actions included in the Preferred Program Alternative for implementing Stage 1, the first seven years of a 30-year program. These actions depend upon subsequent project-specific environmental analyses as well as on subsequent review of the financial and legislative proposals by the State and Federal executive branches, Congress and the State Legislature. The components are as follows: Governance, Ecosystem Restoration, Watersheds, Water Supply Reliability, Storage, Conveyance and Environmental Water Account, Water Use Efficiency, Water Quality, Water Transfers,

Levees, and Science. All aspects of the CALFED Program are interrelated and interdependent. (CALFED ROD, p. 3-4.)

EBMUD's resource planning programs are consistent with and contribute to the objectives of CALFED. Implementation of EBMUD's fishery management plan for the lower Mokelumne River has yielded a consistent increase in the number of fall-run chinook salmon spawners, which contributes to CALFED's Ecosystem Restoration Program goals. Through increased fishery releases, EBMUD also provides additional flows relative to historic operations, to the Delta at no cost to the State Water Project or Central Valley Project export interests. State Board decision D-1641 and the signatories to the "Eastside Agreement" have acknowledged that these flows represent EBMUD's reasonable contribution to Delta water quality needs. Reduction in water consumption through its existing and adopted conservation and reclamation, as well as EBMUD's mandatory customer rationing policy during drought (up to 25%), reduces EBMUD's water supply needs, consistent with CALFED objectives. The Supplemental Water Supply Project is based on these other efforts undertaken as a result of the 1993 WSMP.

5) Project Segmentation/Piecemealing

Comment:

The EIR/EIS improperly segments the project by failing to identify and discuss required project components

Response:

CEQA requires that "the whole of an action" be considered in environmental review documents, and does not allow a lead agency to "segment" or "piecemeal" a project into small parts to avoid adverse environmental consequences or compliance with CEQA. (State CEQA Guidelines, Section 15378[a].) This does not mean, however, that an EIR must address every activity related to a proposed project. Instead, an EIR need only include an analysis of the environmental effects of future actions if: (1) it is a reasonably foreseeable consequence of the initial project; and (2) the future expansion or action will be significant in that it will likely change the scope or nature of the initial project or its environmental effects. Absent these two circumstances, the future expansion need not be considered in the EIR for the proposed project. (Del Mar Terrace Conservancy, Inc. v. City Council, 10 Cal.App.4th 712, 730-731 [1992]; quoting Laurel Heights Improvement Ass'n v. Regents of the Univ. of California, 47 Cal.3d 376, 396 [1988].)

Uncertain or speculative future actions need not be included in the EIR analysis. (Lake County Energy Council v. County of Lake 70 Cal.App.3d 851 [1977].) If meaningful information is unavailable regarding the later action, then the action need not be considered in the EIR. (No Oil Inc. v. City of Los Angeles, 196 Cal.App.3d 223 [1987]). Only where an individual project is a "necessary precedent for action on a larger project, or commits the lead agency to a larger project, with significant environmental effect" must it be addressed in the EIR. (State CEQA Guidelines, Section 15165.) When the current action has independent utility and does not foreclose consideration of alternatives for the later action, the later action need not be considered in the EIR. (Del Mar Terrace Conservancy, Inc., 10 Cal.App.4th 712.)

Similarly, under NEPA the issue is whether a group of actions are so related as to constitute a single action on which an impact statement is necessary. "Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement." (40 CFR Section 1502.4[a].)

> CEQ states that:
>
> Proposals or parts or proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement." (40 CFR Section 1502.4[a].) Actions should be considered together if they:
>
> (i) Automatically trigger other actions which may require environmental impact statements.
>
> (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
>
> (iii) Are interdependent parts of a large action and depend on the larger action for their justification. (40 CFR Section 1508.25[a][1].)

An EIS need not discuss a later development or phase of development if the probability of the second project is not demonstrated or the phases are substantially independent of each other. (Trout Unlimited v. Morton, [9th Cir. 1974] 509 F.2d 1276.) Phases are substantially independent if the first phase is not dependent upon the second phase, i.e., it would be constructed without regard to whether the second project or phase ever occurs. In these instances, agencies may wait to prepare any impact statement that may be required until the later action is taken. (Kleppe, 427 U.S. 390.) In Trout Unlimited, Reclamation prepared an EIS for phase one of a dam and reservoir project. The first phase included the actual construction of the dam and reservoir and the disposition of 100,000 acre-feet of active reservoir capacity for irrigation purposes. The second phase, not addressed in the EIS, called for the disposition of the remaining 100,000 acre-feet of active reservoir capacity following a finding of "feasibility" by the Secretary of the Interior. The court held that the agency properly could consider only phase one as the "First Phase of this project would be constructed without regard to whether the Secretary ever submits a finding of 'feasibility' with regard to the Second Phase."

The project has not been impermissibly segmented or piecemealed in the Draft EIR/EIS to avoid environmental review of certain project components. There are no additional storage or infrastructure requirements necessary for project implementation beyond those already described in the Draft EIR/EIS. The project is a conveyance project and not dependent on additional water storage.

The analysis of cumulative conditions simply examined a "worst case" scenario whereby the project facilities would be put to full use at all permissible times. Although there are no plans or facilities to implement such an operation, EBMUD and Reclamation included it in the analysis to provide a full range of environmental impact analyses. (See Tables 3-1 through 3-3.)

The hydrologic modeling assumptions used in the Draft EIR/EIS are generally consistent with the CVPIA Programmatic EIS. The provisions of the amendatory contract were drafted to reflect applicable CVPIA requirements. EBMUD has executed a binding agreement to renew its contract pursuant to CVPIA Section 3404(c)(3) and in such a renewal will be treated similarly to other CVP municipal and industrial contractors. Therefore, the federal action of approving the amendatory contract is not contingent on completion of the CVPIA PEIS.

Neither CEQA nor NEPA require an analysis of speculative or remote actions. If and when any additional project requirements are ascertained, then a subsequent environmental review will be prepared as required. Therefore, the analysis contained in the Draft EIR/EIS is appropriate.

6) PROSIM Modeling

Comment:

The EIR/EIS impact analysis was conducted using the PROSIM planning model, which was discovered to contain errors in the input hydrology. The Draft EIR/EIS claims that while "this inconsistency affects all the PROSIM simulations reported in this Draft EIR/EIS (it) probably does not change the relative differences between the simulations for each alternative." No technical evidence is provided to support this claim, however, and the errors may not cancel out in the comparative analysis. The Draft EIR/EIS should be revised to include impact analyses with the corrected PROSIM input hydrology and reissued.

Response:

PROSIM is a planning-level model and is not intended to portray Reclamation's day-to-day operations. PROSIM and the State of California hydrologic model DWRSIM are revised on an ongoing basis to reflect new information and evolving regulatory requirements. As described on pages 3-12 and 3-13 of the Draft EIR/EIS, Reclamation and EBMUD indicated that the PROSIM simulations would be updated *if necessary* once a revised version of PROSIM was available, calibrated, and approved by Reclamation.

Reclamation revised and released a new version of PROSIM in November 1998 (PROSIM99). Since that time, Reclamation and EBMUD have worked together and run the hydrologic model to evaluate the Draft EIR/EIS alternatives using PROSIM99. EBMUD and Reclamation then evaluated the impact analyses that were determined likely to be the most sensitive to changes in the model (primarily American River and Delta-related analyses). This evaluation clearly showed that the impact analyses prepared for the Draft EIR/EIS are accurate and not affected by any changes made in the PROSIM99 model. Although there are some minor differences, these differences are extremely small and do not indicate any kind of pattern. Supporting information regarding the results of this evaluation is included in Appendix B to this Final EIR. Most importantly, none of the environmental impacts that were identified as less than significant in the Draft EIR/EIS would be substantially closer to meeting the significance criteria under the new version of the model and no new significant impacts were identified. In addition, no impacts previously identified as significant in the Draft EIR/EIS were determined to be more substantial than previously indicated.

Therefore, the information contained in the Draft EIR/EIS is appropriate for making a decision on the Supplemental Water Supply Project. The electronic files for PROSIM are available on request.

In addition, Reclamation and EBMUD have prepared the 2000 REIR/SEIS, which evaluates additional alternatives. These hydrologic and hydrology-dependent analyses were conducted using results from PROSIM 99 modeling studies.

7) Coordinated Operations Agreement Modeling

Comment:

The Draft EIR/EIS incorrectly represents CVP obligations for Alternative 3 under the Coordinated Operations Agreement (COA). Deliveries under Alternative 2 are correctly treated as an export from the Central Valley Basin via the Folsom South Canal equal in priority to exports at the Tracy and Contra Costa pumping plants. However, deliveries under Alternative 3 to EBMUD should be considered as a "new" export and therefore subject to a lower priority to surplus Delta flows than the State Water Project (SWP) and cannot impact the SWP water supply in any way. The operation studies need to be revised to appropriately apportion the water supply impacts.

Response:

The commenters have raised Article 16 of the COA as an issue. The COA states:

> NEW FACILITIES
>
> 16. Any yield created by the construction of a new facility (not presently existing) by either party shall be attributed to the party constructing the new facility, and will require a review as provided for in Article 14. To the extent that water is exported outside the drainage of the Sacramento, Mokelumne, and Calaveras Rivers, the facilities used to convey such water shall be considered as export facilities for the purposes of Article 5.

As an initial matter, construction of Supplemental Water Supply Project facilities does not create any yield for Reclamation. Likewise, the Supplemental Water Supply Project will not involve the construction of a new facility by Reclamation and therefore Article 16 of the COA is not implicated. Even if it were assumed that the Joint Project facility were attributable to Reclamation under COA Article 16 the hydrologic modeling conducted for the 1997 Draft EIR/EIS and the 2000 REIR/SEIS has been reviewed, and the modeling was performed correctly.

To the extent that COA accounting issues are implicated, Reclamation will confer with the State Department of Water Resources to confirm operating assumptions prior to project operations. The modeling in the November 1997 Draft EIR/EIS for Alternative 3 includes deliveries to the County of Sacramento (45,000 acre-feet annual average), the City of Sacramento (69,000 acre-feet annual average [42,000 acre-feet annual average - American River, 27,000 acre-feet annual average - Sacramento River]), and EBMUD (35,000 acre-feet annual average). The effects shown in the Draft EIR/EIS for Alternative 3 are not solely attributable to EBMUD. If an export issue needs to be considered for COA purposes, the City and County of Sacramento deliveries are clearly not exports from the Central Valley Basin and the integrated operation of American and Mokelumne River facilities for EBMUD also do not result in a strictly export type of operation.

The Alternative 3 modeling also includes increased diversions by the City of Sacramento under its Sacramento River water rights. These increased diversions by the City of Sacramento result in very minor effects on the SWP. The conclusions relevant to the Supplemental Water Supply Project are that any water supply effects from the project

alternatives do not result in significant impacts for fisheries, wildlife, water quality, or land use.

8) Area of Origin

Comment:

A number of comments raise issues concerning the so-called "area of origin" and "watershed protection" statutes. These comments claim that the Draft EIR/EIS does not analyze or show "compliance" with these statutes. Generally speaking, they characterize these statutes as requiring that local water needs be met first before any water is available for "export." Moreover, comments state that San Joaquin County specifically comes within the protection of Water Code Section 11460, as an "area immediately adjacent" to the watershed of the American River "which can conveniently be supplied with water therefrom," and hence a legal obligation arises to provide water to such area "before exporting."

Response:

California's area of origin statutes do not guarantee that all water needs will be met for any such area, or for any particular individual or agency within a protected area. There is no requirement under these laws that obligates an appropriator exporting water out of an area of origin to serve water upon demand within such area.

County of Origin

There are several provisions of the Water Code that involve area of origin protection: Sections 10505, 11128, 11460, 11462, 12200, 12202, 12203. The first of these provisions, Section 10505, which is part of the "county of origin" act, was enacted in 1931:

> **Section 10505. Prohibition against depriving county of water necessary for development.**
>
> No priority under this part shall be released nor assignment made of any application that will, in the judgment of the board, deprive the county in which the water covered by the application originates of any such water necessary for the development of the county.

This section refers to the assignment and release from priority of certain applications filed by the state for later use by projects that will be part of a general or coordinated plan to develop the water resources of the state. Reclamation's permits for Folsom Reservoir, Nimbus Dam, and the Folsom South Canal (Permits 5618, 13370, 13371, 13372, and 14662) were the result of this assignment process. As a result, they are specifically made subject to "the prior rights of any county in which the water sought to be appropriated originates to use such water as may be necessary for the development of the county."

It should be noted, to begin with, that Section 10505 applies only to a county where the water "originates." The Attorney General, in a widely accepted opinion, has defined this requirement as follows:

> The common sense meaning of the word "originates" in this context would seem to be "falls in the form of precipitation." The protection afforded by the section to each county relates only to the water which falls as precipitation within that county's boundaries.... Hence the place of use of the water is the sole standard by which the preference is established. (25 Ops. Cal. Atty. Gen. 8, 17-18)

The State Water Resources Control Board has adopted this definition, and has found that the American River water impounded by Folsom Dam "originates" in Placer and El Dorado counties, not elsewhere. Moreover, the Board ruled that the rediversion of water at Folsom South Canal was "not a basis for according the County of Sacramento the benefits of this section [10505]." (Legal Report, Lower American River Court Reference, 1988, page 109.) It is apparent that San Joaquin County does not enjoy "county of origin" protection under Section 10505.

What this section does is simply to provide assurance that any new application to appropriate water for use within a county of origin will not be rejected because of senior export permits based on state-filed applications with earlier priorities. This section has no application to any of the projects discussed in the Draft EIR/EIS or to the delivery of water by Reclamation pursuant to its CVP contracts. The only impact on Reclamation might be on the supply of water available under its permits, if a county of origin were to develop a project for its own use. Section 10505 does not apply to EBMUD since it holds only a contract right to take American River water from the Folsom South Canal. It is Reclamation that holds the water rights on the river.

Watershed Protection Act

The next provisions to be considered are Water Code Sections 11460-62, which are part of the law known generally as the Watershed Protection Act. These sections were enacted in 1933 contemporaneous with the CVP legislation:

> **Section 11460. Deprival of prior right to water to supply watershed area:** In the construction and operation by the department of any project under the provisions of this part a watershed or area wherein water originates, or an area immediately adjacent thereto which can conveniently be supplied with water therefrom, shall not be deprived by the department directly or indirectly of the prior right to all of the water reasonably required to adequately supply the beneficial needs of the watershed, area, or any of the inhabitants or property owners therein.
>
> **Section 11461. Impairment or curtailment of water rights of watershed, area, or inhabitants - limitations:** In no other way than by purchase or otherwise as provided in this part shall water rights of a watershed, area, or the inhabitants be impaired or curtailed by the department, but the provisions of this article shall be strictly limited to the acts and proceedings of the department, as such, and shall not apply to any persons or state agencies.
>
> **Section 11462. Construction against creation of new property rights or requiring furnishing of water without adequate compensation:** The provisions of this article shall not be so construed as to create any new property rights other than against the department as provided in this part or to require the department to furnish to any person without adequate compensation therefor any water made available by the construction of any works by the department.

Comments from Delta and San Joaquin agencies state that the Draft EIR/EIS must "legally include an alternative that would satisfy the requirements of Water Code Section 11460." And from a substantive point of view, they interpret the Act to protect them against "water transfers that would deprive the local area of water needed for its own beneficial uses."

The 1997 Draft EIR/EIS analyzed project impacts on these areas and found that there would be no material effect. However, actual impacts, if any, are not the focus of this portion of the response, which is limited to the Watershed Protection Act as a matter of law.

At the outset, the language of Section 11460 applies only to the Department of Water Resources in the "construction and operation" of its projects. Only by Water Code Section 11128, enacted in 1951, is the federal government made subject to Sections 11460 and 11463. But nothing implicates EBMUD. The Watershed Protection Act does not apply to it nor to the CEQA aspects of the project. The State Water Resources Control Board has found with respect to EBMUD's American River Contract "that Section 11460 may be invoked only against project operators and that section cannot be invoked against EBMUD." (Legal Report, Lower American River Reference, 1988, page 113.)

Of most importance, however, is the fact that the priority granted in Section 11460 does not create a "water right." Section 11462 provides that the Act "shall not be construed as to create any new property rights...." The Attorney General has construed this language to mean, "[n]o inhabitant of a watershed of origin becomes possessed of any presently vested title or right to any specific quantity of water as a result of this statute." (25 Ops. Atty. Gen. 8, 20-21, 23.) For brevity, the Attorney General notes that "inhabitant" includes "property owners," and "watershed of origin" includes all of the preferred areas mentioned in Section 11460. This interpretation has been adopted in the Racanelli decision:

> The established priority does not create an individual water right (§11462) but rather a grant which is wholly inchoate." (United States v. State Water Resources Control Board [1986] 182 Cal.3d 82, 139.)

The underlying purpose of Section 11460 is merely to reserve a future right to appropriate water for use by those within a designated area. The inchoate nature of the priority means that it can be perfected only through the normal water rights processes, of filing an application and receiving a permit. The Attorney General states:

> As the need of such inhabitant develops [within the priority area] he must comply with the general water law of the state, both substantively and procedurally, to apply for and perfect a water right for water which he then needs and can then put to beneficial use. (25 Ops. Atty. Gen. 8, 21; cited with approval in United States v. State Water Resources Control Board, supra., at 139.)

Thus, there is no statutory obligation on the part of Reclamation under Section 11460, as the project operator of the CVP, except as such inchoate priorities established in the Watershed Protection Act have been perfected through regular State Board procedures.

Still another aspect of the Watershed Protection Act limits the claims made in the various comments. The "water" referred to in Section 11460 "means the water which originates, i.e., falls as precipitation in the particular watershed". (25 Ops. Atty. Gen. 8, 20.) The Act specifically provides that it does not require water made available by the construction of project works to be furnished "without adequate compensation." (Water Code, Section 11462.)

The State Board has concluded that Section 11462 modifies the operative effect of Section 11460, and quoting the Attorney General, states:

> The Attorney General has expressed the opinion that persons or areas invoking Section 11460 are not "entitled to water made available by the construction of works by the authority" without paying adequate compensation for the benefits actually received from the existence and operation of the project works. Having to pay for the benefits received does not detract anything from the benefits or effect of the priority granted. It is simple equity to the taxpayers of the State as a whole. It is the purpose and effect of this provision of section 11462 to make it crystal clear that no person entitled to the priority reserved by section 11460 is thereby entitled to receive free of any charge water which is made available by the construction of any project works by the authority. (25 Cal. Ops. Atty. Gen. 8, 24.)

Referring to the American River and Folsom storage, the State Board thus concluded that "compensation must be paid for augmented stream flows required by the implementation of Section 11460." (Legal Report, Lower American River Court Reference, 1988, page 114; to the same effect, see United States v. State Water Resources Control Board [1986)][82 Cal.3d 82, 139].)

Lastly, there is the factual issue of whether the Delta and San Joaquin County agencies come within the geographical limits of Section 11460 for the American River. There can be "no question," it is said, that the Eastern San Joaquin Groundwater Basin fits the requirements of Section 11460. Reliance is placed on an observation of the State Water Resources Control Board in its Decision 1356 to the effect that Placer, Sacramento, and San Joaquin counties are "clearly within the area entitled to the benefits of the Watershed Protection Law." (Reconsideration, page 6) That same decision, however, approved the so-called four-way agreement, dated October 21, 1968, among EBMUD, United States, Sacramento River and Delta Water Users Association, and the Central Valley East Side Project Association. The agreement provides that the United States may deliver 70,000 acre-feet annually to EBMUD from the Folsom South Canal and an additional block of 80,000 acre-feet subject to certain conditions.

If the Folsom South Canal is the key to areas that can be "conveniently supplied with water" from the American River, then certainly EBMUD is at least on a par with those who now claim the benefit of the Watershed Protection Act with respect to the American River. There is no way that Decision 1356 can be read to include the Delta and San Joaquin County agencies within Section 11460, while treating EBMUD as an "exporter." The legislative history of the 1949 Folsom Dam legislation and Reclamation studies of the Folsom South Canal shows a Congressional intent to supply to the East Bay American River water made available by and through the Auburn Folsom South Unit.

Delta Protection Act

The last of the area of origin statutes relied on in the comments is the Delta Protection Act. (Water Code Sections 12200 et seq.) This Act states that salinity control and providing "an adequate water supply" for Delta users are among the functions of the State Water Project and the CVP. (Section 12202.) However, that Act provides protection only for flows to which Delta users are "entitled." (Water Code Sections 12203, 12204.) As originally introduced, the bill prohibited export of any water necessary "to meet the needs of the lands naturally dependent upon the water to be exported from the streams and channels of the Delta." (SB 1327, introduced April 28, 1959, emphasis added.) But this section was

substantially amended during the legislative process. Protection for Delta "needs" was dropped in favor of those waters to which Delta users were "entitled." Thus, as finally enacted, the Delta Protection Act invokes a legal interpretation of Delta water rights, and it is well settled that riparian rights attach only to natural flows. Delta riparian diverters have no rights to water stored in Folsom Reservoir pursuant to Reclamation's water rights.

Permits

In summary, none of the area of origin protections applies directly against EBMUD as the holder of a water service contract with Reclamation. And with respect to Reclamation, in the acquisition of its water rights and the operation of the CVP, these statutes provide only the opportunity for those in protected areas to perfect water rights senior to the Reclamation's rights to export water originating in those protected areas. Such later perfected rights might affect export supplies available to the CVP, but Reclamation contracts do not guarantee specific amounts. They all account for the possibility of reduced CVP supplies. The area of origin provisions do not become part of the contracts to deliver water. They merely may affect the water right on which the contract is based. These statutes confer no priorities among CVP contractors. None of the comments received on either the 1997 Draft EIR/EIS or the 2000 REIR/SEIS shows that any perfected water rights permits have been acquired that could affect the permits of Reclamation on the American River or the operation of the Folsom facilities. Nor do any of the comments recognize the obligation of a watershed area to pay adequate compensation under Water Code Section 11462 if CVP facilities were to be used to supply or deliver that water. In short, the present obligations of Reclamation to satisfy any prior vested rights, and for salinity control and public trust uses, are fully taken into account in the supply of water which is available in the Draft EIR/EIS.

9) Construction-Related Environmental Commitments and Mitigation

Comment:

The environmental documentation lacks adequate detail on construction-phase environmental commitments and mitigation measures, particularly for traffic control and disruption.

Response:

The potential impacts on resources within the project and service areas for all of the alternatives in both the 1997 Draft EIR/EIS and the REIR/SEIS have been appropriately addressed as required by CEQA and NEPA. Both CEQA and NEPA strongly encourage the incorporation of appropriate measures to avoid or reduce significant impacts into the description of a proposed project as a means to ensure implementation of the measures and to reduce unnecessary environmental analysis. EBMUD is committed to minimizing short-term disruption effects during construction. By incorporating these measures into the basic description of the project, EBMUD has provided a firm commitment to address or to avoid these potential effects. Chapter 2 of the 1997 Draft EIR/EIS presents an extensive list of environmental commitments that have been incorporated into the project alternatives and that will be implemented along with the project (1997 Draft EIR/EIS, pages 2-3 to 2-7; REIR/SEIS, pages 2-1 and 2-2). These commitments are industry standards and are typically implemented on projects of this type. These commitments specifically require implementation of a traffic control plan to avoid significant construction-related effects on roadways during pipeline construction. Many of the site-specific details associated with the traffic control plan have not yet been developed because final project design has not been completed. However, implementation of standard construction traffic control methods would ensure that no significant impacts would result. Generally, the traffic control plan would address issues such as hours of operation, lane closures, safety, and access.

Other construction-related environmental commitments described in Chapter 2 of both the 1997 Draft EIR/EIS and REIR/SEIS include the following:

- Erosion and sediment control plan.
- Stormwater pollution prevention plan.
- Dust suppression plan.
- Fire control plan.
- Phase I and II hazardous materials studies.
- Hazardous materials management plan.
- Channel and levee restoration plan.
- Hydrologic simulation modeling and scour analysis.
- Agricultural land restoration plan.
- Spoils disposal plan.
- Environmental training.

- Access point/staging area plan.
- Trench safety plan.
- Project planning, coordination, and communication plan.

As the final design progresses, site-specific details will be developed for each of these commitments.

EBMUD and Reclamation will coordinate closely with each of the affected city and the county agencies in the development of site-specific construction planning. Additional meetings will be held with affected groups and individuals to ensure ample opportunity for concerns to be addressed and for solutions to be developed for site-specific issues. For construction within their areas of jurisdiction, the cities and the counties will have a substantial role in determining the scope and contents of the plans and programs listed above and agreement on appropriate actions will be reached prior to the start of construction. .

If Alternative 2 is selected, there will be considerably fewer construction impacts on residential areas and no construction issues within any city. EBMUD will implement appropriate construction-related environmental commitments and mitigation measures.

In addition, the following commitments will be implemented at site-specific levels, as appropriate, to further reduce construction-related effects. These commitments were refined after publication of the 1997 Draft EIR/EIS. These measures will be implemented depending on the location of construction and surrounding land uses. The identified measures include temporary striping, signing, traffic lighting, and signals for residential and business areas affected by construction; access and parking provisions for residences and business areas; replacement of existing landscaping; coordination with planned improvements (e.g., raised medians, turn lanes, street alignments) to minimize disruptions associated with two or more projects; restricted work areas in residential areas, expressed as a maximum length of open trench for a given segment at any given time; restricted work hours; dust suppression and clean-up provisions (e.g., street sweeping, sidewalk cleaning, and debris removal) as needed; establishment of a community ombudsman to handle ongoing public outreach and address construction concerns; fact sheets and public updates to inform the community about progress of the project; and improvements to community facilities affected by construction. The measures described above are more substantial than are implemented for many similar construction projects and are consistent with other recent efforts in the Sacramento area. For example, the City's Water Facilities Expansion Project EIR (September 2000) proposes very similar measures in its EIR to address impacts on the community resulting from construction of new water facilities.

It is impossible at this stage in project planning to definitively determine which of the above measures are feasible, practicable, and effective at each construction site. Therefore, after a project is selected and approved, those mitigation measures listed above that are feasible and appropriate for the individual construction sites will be implemented.

10) Kiefer Boulevard Pipeline Alignment

Comment:

The proposed pipeline routing for Alternatives 3, 4, and 5 along Kiefer Boulevard will significantly impact the Rosemont community. Other routes such as the Jackson Highway could be used instead of Kiefer Boulevard.

Response:

During the initial preparation of the 1997 Draft EIR/EIS, EBMUD conducted engineering studies to evaluate possible routes from the E. A. Fairbairn Treatment Plant to the Folsom South Canal. This analysis was originally conducted for Alternative 3, but is equally applicable to Alternatives 4 and 5. After reviewing regional maps and performing surveys of the area, two routes from Folsom Boulevard to the FSC were examined: Kiefer Boulevard and Jackson Highway. Several routes south of Jackson Highway were examined and found to have no substantial overall benefits when compared to a Kiefer Boulevard alignment. The significant differences between the Kiefer Boulevard and Jackson Highway routes involved wetlands, private property acquisitions, residential impacts, and traffic impacts. Table 3-1 outlines the analysis results. Kiefer Boulevard was chosen as the most direct route with the fewest impacts on the regional environment. The analysis included the following issues:

- Overall length of the route
- Engineering criteria
- Comparative costs
- Right-of-way acquisitions
- Traffic impacts
- Construction impacts
- Cultural resources impacts
- Land use impacts
- Biological impacts

The following discussion outlines the results of the analysis. Table 3-1 summarizes the results.

Overall Length

The Kiefer Boulevard alignment follows Kiefer Boulevard from Folsom Boulevard, through Rosemont, past Mather Airforce Base to the Folsom South Canal. The Jackson Highway alignment follows the Jackson Highway (State Highway 16) from Folsom Boulevard to the Folsom South Canal. The overall lengths of the two alignments are similar, with Kiefer Boulevard being only slightly shorter. The Kiefer Boulevard alignment is projected to be 53,000 feet, as opposed to 54,000 feet for the Jackson Highway alignment. The Kiefer Boulevard alignment would require 0.21 mile of trenchless construction as opposed to 0.45 mile required for the Jackson Highway route.

Engineering Criteria

Neither route crosses geologic features such as fault lines or areas of potential liquefaction. Both routes provide all-weather access.

Comparative Costs

The projected costs for the two routes are similar, with the Kiefer Boulevard option being slightly less.

Right-of-Way Acquisitions

The Kiefer Boulevard alignment crosses fewer parcels (22 versus 36 for Jackson Highway) requiring fewer right-of-way acquisitions through private property. In addition, the Jackson Highway alignment requires a longer encroachment permit from Caltrans.

Construction Impacts

Approximately 660 residences exist within 500 feet of the alignment along the Kiefer Boulevard route as opposed to 310 residences within 500 feet of the Jackson Highway route. Disruption from construction activities would have an impact on more residences along Kiefer Boulevard. The Kiefer Boulevard alignment encounters more underground utility lines and could encounter more hazardous materials in the excavated soils. For a detailed description of anticipated construction impacts on residential communities and the proposed efforts to minimize those impacts, see the "Construction Impacts" major issue response.

Traffic Impacts

The analysis found that construction activities along the Jackson Highway alignment would have an impact on a longer distance of high-load traffic areas (5.42 miles versus 3.48 miles for the Kiefer alignment). Because Jackson Highway has only two lanes, some stretches of the highway might require closure during construction activities, forcing significant traffic detours. A minimum of two lanes of traffic could be maintained through the construction zones on Kiefer Boulevard due to the width of the easement.

Cultural Resources Impacts

The impacts on cultural resources along each route are similar.

Biological Impacts

The analysis of biological impacts found that the Jackson Highway route traverses a significantly greater area of vernal pool habitats, in addition to 50 feet of riparian habitat. According to this analysis, the mitigation required for disrupting vernal pool and riparian habitats would be less for the Kiefer Boulevard route.

Land Use Impacts

The land use analysis found that neither route crosses designated open space, parks, cemeteries, or planned developments. The impacts on land use would be similar for both routes.

Table 3-1: Results of Comparison

Criteria	Units	Kiefer Boulevard Alignment	Jackson Highway Alignment
Length	Linear feet	53,000	54,000
Trenchless Construction	Miles	0.21	0.45
Number of Underground Utilities Crossed		80	40
Length of Parallel Underground Utilities to be Replaced	Miles	0.15	0.32
Projected Costs	M dollars	67.5	71.2
Right-of-Way Acquisitions	Parcels	22	36
Caltrans Encroachment Permit Length	Feet	50	54,000
Residences within 500 feet of Alignment		660	310
High Load Traffic Areas	Miles	3.48	5.42
Riparian Habitat Crossed	Linear feet	0	50
High-Density Vernal Pool Areas Crossed	Linear feet	4,450	11,750
Average Daily Traffic (ADT) Volume	1996	21,500	13,200
ADT per Existing Traffic Lane	Vehicles	5,500	6,600
Speed Limit	Mph	40	55
Average Pavement Width	Lanes	3-5	2-3

Rosemont Bypass

In the area east of Bradshaw Road the impact analysis strongly favors a Kiefer Boulevard alignment over a Jackson Highway alignment as private property impacts, traffic impacts, and some biological impacts are all avoided by using the Kiefer Boulevard alignment. Because of this and in response to comments received on the 1997 Draft EIR/EIS, EBMUD, the City, and the County discussed a possible bypass option that would route the pipeline alignment from Florin-Perkins Road down Jackson Highway to a point past the Rosemont area (possibly Harlin Drive or Mayhew Road) and then turn north toward Kiefer Boulevard, connecting with the original alignment (Figure 3-1). This alignment bypasses most of the Rosemont area, but does not reduce overall traffic effects and increases private property effects. Therefore, this potential bypass does not offer substantive benefits nor reduce environmental effects.

The Kiefer Boulevard alignment has been identified as creating the fewest environmental effects. The most significant differences between the alignments are wetland impacts, right-of-way acquisitions, residential impacts, and traffic impacts. Table 3-1 summarizes the analysis results. The Jackson Highway alignment would create greater impacts for each of these categories except residential impacts. Short-term construction-related impacts on the community of Rosemont can be minimized through the implementation of specific commitments outlined in the 1997 Draft EIR/EIS and implementation of the specific measures identified above under "Construction-Related Environmental Commitments and

Mitigation". In addition, Caltrans expansion plans and a specific alignment for Jackson Highway are unknown. However, should Jackson Highway be expanded in the future, which is highly likely given the growth in southeastern Sacramento County, the state Street and Highways Code (attached) could require the relocation of the pipeline resulting in considerable additional disruption and expense.

Chapter 12 of the 1997 Draft EIR/EIS evaluates construction-related impacts on traffic circulation, roadway condition, emergency responder routes, and roadway safety. Detailed analysis of the construction impacts, for instance impacts on individual driveways, will require detailed designs. Access to driveways and private roads will be maintained wherever feasible. Detailed design and construction plans will not be completed before the environmental process is complete and a preferred alternative is selected. (See Chapter 2 of this document regarding the status of the preferred alternative.)

Chapter 2 (page 2-4) of the 1997 Draft EIR/EIS contains a description of the Traffic Control Plan to be implemented during the construction of the pipeline along city streets. Public meetings will be held to allow community involvement in the preparation of the plan. The Traffic Control Plan will include measures to reduce the short-term, construction-related impacts on traffic and circulation, noise levels, and construction nuisances. The plan will include procedures for providing pedestrian crossings and vehicular access to businesses.

The response to "Construction-Related Environmental Commitments and Mitigation" comment in this chapter provides additional detail regarding construction-related environmental commitments already incorporated into the project. In addition, EBMUD and the County of Sacramento have determined that at least two lanes of traffic will be maintained on Kiefer Boulevard through the Rosemont area at all times. This additional information is simply illustrative of the commitments contained in the 1997 Draft EIR/EIS and does not constitute significant new information or trigger the need to recirculate the EIR/EIS.

11) C Street Pipeline Alignment

Comment:

The proposed routing for the pipeline along C Street under Alternatives 3, 4, and 5 will impact the community during the construction phase. The project may impact the trees bordering the street. Please use C Street Bypass option. Please install street lighting as mitigation.

Response:

Temporary impacts anticipated during construction activities are unavoidable. However, EBMUD, in conjunction with the City and County, has developed strategies to reduce these impacts as much as possible. The "Construction-Related Environmental Commitments and Mitigation" major issue response contains more detailed information on these strategies and commitments. To further minimize impacts on the C Street residential neighborhood, the 1997 Draft EIR/EIS included an optional route that bypasses C Street between 23rd Street and Elvas Avenue. Combined with the Site 5 intake option, the C Street Bypass option would avoid C Street altogether. (If intake sites 1, 2, 3, or 4 were chosen under Alternative 3, the pipeline would follow C Street from 14th Street to 23rd Street before the C Street Bypass Option could be used.) Since publication of the 1997 Draft EIR/EIS, additional work has been done and the City has identified a new alignment for this option as described below.

This revised C Street Bypass Option, recommended by the City of Sacramento, would avoid most of the pipeline construction in C Street, as well as any construction immediately adjacent to the City of Sacramento's landfill. The optional pipeline alignment would begin at on 23rd St., on the south side of the UPRR rail line. The pipeline would then continue eastward to 24th St. along an alley. Between 24th St. and 25th St, the alignment would be located just to the south of the railway right-of-way. Between 25th Street and 27th St. (750 ft), the pipeline would be installed underneath C St. It would then diagonally cross Stanford Park to 28th Street, and proceed along B Street to the Capital City Freeway. After crossing beneath the freeway, the pipeline would cross under the UPRR railroad right-of-way. It then would continue eastward parallel to the northern side of the railroad right-of-way for 3,400 ft. Crossing back under the UPRR rail lines, the pipeline would continue for 1,100 feet along Lanatt Street to the intersection with Elvas Avenue, where it would connect with the baseline alignment.

If the C Street Bypass Option were not implemented, EBMUD has proposed tunnel installation as an alternative to trenching for specific segments of the pipeline alignment along C Street (29th Street to 33rd Street). This installation method would reduce construction impacts on traffic and on heritage trees along C Street but would significantly increase installation costs. The segments proposed for tunneling are shown in Figure 2-6a of the 1997 Draft EIR/EIS and Figure 2-3a of the REIR/SEIS (included in this document as Figure 2-1).

Chapter 7 of the 1997 Draft EIR/EIS outlines potentially significant impacts on individually protected trees and heritage trees along the pipeline corridor from I-5 to the Folsom South Canal. The 1997 Draft EIR/EIS presents mitigation measures to reduce these impacts to less-than-significant levels, which are also incorporated into the REIR/SEIS. The mitigation measures include avoiding protected trees where possible and obtaining tree removal

permits where avoidance is not possible (see mitigation measures 7-2a and 7-2b). In addition, the project is required to comply with the following local ordinances: City of Sacramento Heritage Tree Ordinance (Title 45: Trees), the County of Sacramento Tree Preservation Ordinance (Chapter 19.12), and the San Joaquin Development Title Code on protection of heritage oak, native oak, and historical trees (Title 9).

During the public review period, many comments were received regarding impacts on the trees lining C Street. The comments stressed the historical and aesthetic value of the trees, as well as the importance of the shade they provide the neighborhood in summer. The project engineering design team will coordinate with the City arborist to minimize impacts as much as possible. The City of Sacramento will review engineering design and identify specific measures if unavoidable tree loss could result.

With regard to specific measures such as installing street lighting to C Street, EBMUD will consult with the City and County of Sacramento. See "Construction-Related Environmental Commitments and Mitigation" above. Site-specific measures will be developed through additional community involvement should Alternatives 3, 4, or 5 be selected.