SJC - 7

North Eastern San Joaquin County
Groundwater Banking Authority

Integrated Regional Water Management Plan

Technical Memorandum:

Potential Use of Unassigned Freeport Regional Water Project Pipeline Capacity

Prepared for:

California Department of Water Resources
San Joaquin County

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EXECUTIVE SUMMARY

FRWP Project Description and Relation to IRWMP

San Joaquin County (County) is working with the Northeastern San Joaquin Groundwater Banking Authority (GBA) to develop an Eastern San Joaquin County Integrated Regional Water Management Plan and Integrated Conjunctive Use Program (IRWMP/ICU). The IRWMP/ICU will integrate project elements identified during planning and as a result of prior investigations. Prior project concepts have been identified in the Eastern San Joaquin Groundwater Basin Groundwater Management Plan (GWMP), San Joaquin County Water Management Plan, MORE Water Project, and other local water management strategies. The Freeport Regional Water Project (FRWP) is a potential conveyance element of the County IRWMP/ICU that would allow for access to the American River as a potential source of supply. The FRWP is being built by the Freeport Regional Water Authority (FRWA) and provides an opportunity for the County to use these conveyance facilities to move water from the Sacramento River to San Joaquin County.

Project Sponsors: The FRWA is a joint powers agency of the East Bay Municipal Utility District (EBMUD) and Sacramento County Water Agency (SCWA) that is coordinating development and construction of the FRWP. The City of Sacramento is an associate member.

Project Status: The FRWP Environmental Impact Report (EIR) has been certified and a Record of Decision (ROD) has been issued for the Environmental Impact Statement (EIS). The Biological Opinions (BOs) have been released by the responsible federal agencies. The project is currently at the 100% design stage for the intake and 60% for the pipeline. The design of the pipelines will be completed in the third quarter of 2006. All final permits should be procured in the second or third quarter of 2006, assuming that the OCAP Biologic Opinion stands. Construction is to be initiated in the second quarter of 2007 and operations are scheduled to begin in the third quarter of 2009.

Project Facilities/Operations: Intake facilities include a fish screen, settling ponds, pumping station and associated support facilities located on the Sacramento River near the unincorporated town of Freeport. Up to 286 cubic feet per second (cfs) may be diverted. The pipeline will split to convey up to 131 cfs to the Sacramento County Zone 40 Water Treatment Plant. Up to this turnout point the facilities are shared between EBMUD and SCWA. A 155 cfs pipeline to serve EBMUD will then cross Sacramento County and connect to the Folsom South Canal were water will be conveyed down the canal to terminal facilities that include an intake and pumping plant. The pumping plant will boost water through the Folsom South Canal Connector (FSCC) pipeline up to the Camanche/Mokelumne Aqueduct area. The EBMUD may also construct a water treatment facility in this area that would process water prior to the water

being pumped into the Mokelumne Aqueduct. A second pumping plant will be built by EBMUD to pump the water into the Mokelumne Aqueduct.

EBMUD can only divert and convey water in dry and critically dry years due to a constraint on its federal water contract. The unused EBMUD capacity creates an opportunity for the County to make use of up to 155 cfs of EBMUD's FRWP pipeline and pumping facilities to convey water from the American River into San Joaquin County in normal, above normal and wet years.

Water Availability and Supply Sources: The County filed Water Right Application (Application) 29657 in 1990 seeking to divert up to 350 cfs from the South Fork of the American River from December through June (referred to herein as the County's water right). The County's water right is based on an area of origin claim under the Watershed Protection Act[1]. The South Fork American River water would be passed through Folsom and Natomas Reservoir down the lower American River where it would be joined with the flows in the Sacramento River. The water would then be diverted at FRWP intake and conveyed through the FRWP pipelines, FSC and Folsom South Canal Connector (FSCC) pipeline to the Camanche/Mokelumne Aqueduct area where it would then be transferred via new facilities constructed by the County for distribution to the place of use. Access to the FRWP facilities would also allow the County to pursue excess water from the Sacramento River either through filing for additional right or transfers. However, no additional rights or specific transfers have been proposed at this time.

Potential Yield: County use of the available EBMUD capacity in the FRWP would provide an average of 53,000 afy, and up to a maximum of approximately 62,000 afy in above normal and wet years. Yield could be highly variable based on conditions put on the water right permit. There would be no yield in dry and critically dry years when EBMUD is making full use of the FRWP. Further negotiations with EMBUD and the SWRCB are needed to fully develop and evaluate a range of potential operational scenarios. This would need to be verified by further operational analysis and under any final conditions put on the County's use of the FRWP.

Additional "In-County" Facilities: The County will need to construct facilities to convey the American River water wheeled through the FRWP from the end of the EBMUD pipeline to the ultimate point of use. Additional conveyance to the points of use could be through new or existing canals and pipelines, or natural channels. The water could be used by the agricultural sector in-lieu of groundwater pumping or put into groundwater storage through direct recharge (injection, spreading, or percolation ponds). The proposed Duck Creek Reservoir may also provide storage for water conveyed through the FRWP.

Operational Concept: Groundwater storage and banking is an operational concept that will be further evaluated in the IRWMP/ICU. This would involve forming partnerships with other water right holders or Central Valley Project (CVP) or State Water Project (SWP) contractors.

[1] California Water Code § 11460

Groundwater banking and storage have the potential to increase FRWP yields to the County or reduce the cost for participation in the FRWP.

Place of Use and Disposition of the Supply: The water wheeled through the FRWP would be conveyed into areas within the North San Joaquin Water Conservation District (NSJWCD), Stockton East Water District (SEWD), and Central San Joaquin Water Conservation District (CSJWCD) for direct use or recharge. Water percolated through direct recharge would be subsequently withdrawn by wells for agricultural, municipal, or domestic beneficial use within the proposed place of use identified in the County's water right application.

Issues and Constraints: There are significant technical and institutional constraints that must be overcome for the County to procure the American River water right and make use of the FRWP. Technical constraints are related to water availability; temperature; flow; effects on fish and aquatic habitats in the lower American River, Sacramento River and Delta; and potential impacts to the cold water storage pool at Folsom Reservoir.

The County will encounter significant regulatory, legal, and political challenges to procure the American River water rights and/or make full use of the FRWP available capacity. A range of State Water Resources Control Board (SWRCB) policies, decisions, and orders, and the legal interpretations of the water code will influence the SWRCB decision. Additional environmental review will likely be required to obtain the water right permit from the SWRCB and make use of the FRWP, and it is expected that project will require consultation with responsible federal agencies under the Endangered Species Act (ESA). All of the environmental decisions will involve public hearings and participation. The most significant challenge will be related to developing a working relationship with the members of the Sacramento Water Forum and CVP/SWP contractors and overcoming political opposition and challenges during any water right hearings at the SWRCB. The Sacramento Water Forum and CVP/SWP contractors will be concerned about any changes that would influence the current Water Forum agreement and allocations of American River water. Contracts for access to the FRWP will need to be negotiated with EBMUD, and any contract will need to be consistent with the Principals of Use established by EBMUD as a member of the FRWA. Use of the FSC will require a Warren Act Contract with the Reclamation to allow for use of the federal facility.

FINDINGS AND CONCLUSIONS

This section provides a summary of the findings and conclusions based on the analysis of the available data and the review of prior studies, investigations, and agreements. The references and bibliography contain the listing of prior documents that were reviewed and evaluated. Appendix A contains a summary of key studies, programs or reports. In addition, there were several phone contacts and personal communications with individuals that provided background or addressed key questions. Persons contacted are listed in the references and bibliography section. This section is broken into water availability (source of water); FRWP

capacity (conveyance); other issues and constraints; progress on water planning and the SWRCB requested work plan; environmental review and permitting, and the EBMUD agreement.

- **Water Availability**

1. Based on the hydrologic analysis of CALSIM modeling results for the period from 1922 to 1992, and review of existing stream flow data, there appears to be sufficient water available on the South Fork of the American River for use and diversion from December through June, in accordance with the intent of Application 29657.
2. Procuring a water right permit will be challenging and is likely to be closely reviewed by parties to the Sacramento Water Forum Agreement, CVP contractors, SWP contractors, and those stakeholders already using water from the American River, or which have a vested interest as a result of current operating plans or agreements (CALFED, OCAP, etc.), and/or have planned on future use of the water.
3. The County does not seek or rely on storage in any CVP facilities and would pass all water through Folsom from December 1 through June 30. This should be consistent with the proposed Water Forum Flow Management Standards (FMS) developed as part of the successor efforts to the Sacramento Water Forum. The proposed FMS will be considered by the SWRCB for adoption once the FMS and associated agreements have been finalized.
4. The County's use of South Fork American River water is subject to interpretation by the SWRCB and could meet the definition of a water right in a protected area under the Watershed Protection Act. This would allow the County, as a new in-basin water user, first priority to natural flows for all County's in-basin purposes, and would give the County a higher relative priority than the water right of the CVP and SWP exporters.
5. Moving the point of diversion to the FRWP site on the Sacramento River would not result in any increase in diversion from the amount obtainable at the original point of diversion on the American River (350 cfs). The maximum amount of water to be diverted is constrained by the 155 cfs EBMUD pipeline capacity.
6. Future demands for CVP contractors, CVP settlement contractors and other water right holders on the American River have been accounted for in the future baseline analysis (2030 LOD) for the Water Forum, CVP Operating Criteria and Plan (OCAP), and FRWP environmental and technical analyses. These assumptions did not include water for the County or others that might seek to claim area of origin water right.
7. The basis for the future claims to water by the parties on the American River is subject to legal interpretation and the SWRCB will most likely need to evaluate the relative seniority of the claimed rights. The County will need to be aggressive in pursuing its application. The County's

application should be put in context of all other future claims to water, and comparisons should be made in cases where there has been no firm history of diversion or beneficial use.

8. It could be assumed that the County's diversion at the amounts being proposed pursuant to Application 29657 could or should have been accounted for in the volumes and period of diversion analyzed for the FRWP, OCAP, and Sacramento Water Forum environmental documents. This conclusion would need to be supported by legal interpretations and in the context of other water right claims, and more detailed evaluation of the proposed future diversions and demand assumptions, water right and priorities.

9. At the same time that the County is working with the SWRCB to make a decision on the American River application, the County should actively pursue and evaluate alternative sources of water from the Sacramento River.

- **FRWP Capacity**

  1. EBMUD's FRWP capacity of up to 155 cfs is available only when EBMUD is not using their pipeline. This typically occurs in normal, above normal and wet years. EBMUD will use the capacity in dry and critically dry years. In below normal years, there may be some capacity that is available, and County's use of the available capacity may be constrained by prior water right claims, current operating agreements (Sacramento Water Forum), and fish flow requirements in the American River.

  2. Subject to negotiation, some of the SCWA capacity may be available for use by the County at times prior to build out of Zone 40.

- **Other Issues and Constraints**

  1. One of the largest constraints to perfecting the County's South Fork American River water right is the existing or planned allocations to other in-basin users who have been party to the Water Forum Agreement, and have demand forecasts that have been analyzed in existing environmental documents. Sacramento Water Forum participants are not likely to support any additional diversions from the American River since these could upset the balance that has been achieved and the assumptions that have been made to resolve American River issues and adopt the Water Forum Agreement.

  2. The County use of FRWP is proposed in context of a complex and evolving water policy environment and may be influenced by host of other project approvals, biological opinions, SWRCB decisions, pending litigation, and water resources development efforts on the American River.

  3. Flow Management Standards, as part of the Water Forum successor effort, are currently being established and may constrain the County's water right application and SWRCB permit.

  4. Based on hydraulic modeling conducted for the FRWP EIR, the County's use of the FRWP is not anticipated to increase the potential for the

Sacramento River to reverse flow or result in upstream migration of water discharged at the Sacramento Regional County Sanitation District (SRCSD) wastewater treatment plant located downstream from the point of diversion.

- **Progress on Water Planning and SWRCB Requested Work Plan**
  1. The County has made significant progress in regional water planning and has consistently included the use of American River water and any available FRWP capacity.
  2. The County has made significant progress on the work plan requested by the SWRCB.
- **Environmental Review and Permitting**
  1. There are three discretionary actions subject to California Environmental Quality Act (CEQA) review that influence the County use of FRWP, including the SWRCB water right permit, County/EBMUD agreement, and the IRWMP/ICU program. All will require public review and involvement.
  2. The SWRCB is the lead agency pursuant to CEQA for scoping the environmental analysis needed for their action on the water right permit. The County and SWRCB must come to terms on the level of CEQA review required to minimize the costs and make best use of existing information. The SWRCB usually requires that an EIR for a water right decision be developed under a Memorandum of Understanding (MOU) between the SWRCB and the applicant.
  3. There is a substantial body of technical knowledge and evidence, and the SWRCB should work with the County to develop a strategy to streamline the environmental reviews that are needed to support decisions on projects subject to CEQA review. CEQA compliance can be streamlined by "tiering" off the existing FRWP environmental analysis.
  4. Project level environmental review of the FRWP is recommended to expedite the EBMUD/County agreement and to provide needed CEQA documents for the SWRCB to take action on the water right permit.
  5. CVP and SWP contractors are not likely to support any water right permit for a junior appropriator that does not include Term 91 conditions that limit diversions when the Delta is out of balance.
  6. Use of the unassigned EBMUD capacity was not evaluated in the National Oceanic and Atmospheric Administration (NOAA Fisheries). Biological Opinions for the FRWP, and use of the capacity would be subject to further Endangered Species Act (ESA) consultation with the U.S. Fish and Wildlife Service (FWS) and the NOAA Fisheries.
  7. Additional modeling and analysis of the American River and Delta impacts is likely to be required for purposes of CEQA and ESA consultations.
  8. There are opportunities to leverage the prior investments in analysis tools and investigations, including CALSIM and the pending results for studies

of the upper American River above Folsom that are to be completed in mid-2006 by Reclamation.

- **EBMUD Agreement**
  1. EBMUD is ready to consider proposals for use of the FRWP by the County.
  2. The cost for wheeling water through the FRWP will be based on the capital and O&M costs that are subject to negotiations.
  3. Any agreement must be consistent with the EBMUD's Principals for Agreement for use of Excess FRWP Capacity, and the existing FRWA agreements.
  4. County costs for use of FRWP could be highly variable, but may be reduced by providing increased flexibility and reliability to EBMUD through agreements that allow for access to groundwater storage and banking as part of the IRWMP/ICU program.
  5. The County will need to negotiate a Warren Act Contract with Reclamation to use the FSC. This provides a federal nexus resulting in a need to comply with National Environmental Policy Act (NEPA) and the federal ESA.

TECHNICAL MEMORANDUM CONTENT AND PURPOSE

The purpose of this Technical Memorandum (TM) is to:

- Identify issues, opportunities, or constraints to finalize the San Joaquin County (County) water right permit for water from the South Fork of the American River and use the FRWP;
- Update the FRWP description and concepts such that they can be compared to other potential elements of the Eastern San Joaquin County Integrated Regional Water Management Plan and Integrated Conjunctive Use Program (IRWMP/ICU); and
- Provide briefing materials for further discussion by the San Joaquin County GBA on the FRWP.

The target audience is primarily the stakeholders and County staff that will be negotiating with the SWRCB for the water right permit; EBMUD on a wheeling agreement for use of the FRWP, and U.S. Bureau of Reclamation (Reclamation) for a Warren Act contract to use the Folsom South Canal (FSC).

This work was sponsored by the California Department of Water Resources (DWR) Division of Planning and Local Assistance, Conjunctive Water Management Branch and San Joaquin County. Technical services and support were provided by Water Resources and Information Management Engineering, Inc. (WRIME) under Contract No. 4600003467, Task Order No. WRIME-SJ-0505-001, dated May 15, 2005. Work included:

- Identification and review of related projects and studies;

- Refinement and update of the analysis of a FRWP IRWMP/ICU alternative;
- Analysis of data, modeling and analysis tools;
- Analysis of excess water availability and FRWP capacity;
- High level review of County's water right filings and proposed amendments; and
- Evaluation of issues and constraints.

The memorandum contains sections for:

- Related Projects;
- Current Data, Modeling and Analysis Tools;
- Freeport Regional Water Project Description and Status; and
- Issues, Constraints and Opportunities.

The Findings and Conclusions are contained in the executive summary to help those readers that do not need the level of detail provided in the Technical Memorandum.

RELATED PROJECTS

The County use of FRWP is in context of a complex and evolving water policy environment and may be influenced by host of other project approvals, biological opinions, SWRCB decisions, and water resources development efforts. Related projects are those that could influence County use of FRWP or the procurement of the County's American River water right permit and include other similar projects or agreements that may have a significant influence on the American River and fisheries flows below Folsom Dam; Delta water quality and fisheries; senior water right; and CVP- SWP operations. In addition, if the County were to seek to obtain additional Sacramento River water or transfer other water into the County from other sources, these will have a bearing on such plans and strategies. In addition to the FRWP analysis, the related projects and agreements include:

- Implementation of CALFED and CVPIA;
- Sacramento Water Forum and associated agreements, elements and successor efforts;
- Long Term Central Valley Project OCAP and the Coordinated Operating Agreement (COA) between the CVP and State Water Project, including the associated Biological Assessment and Biological Opinions;
- American River Diversion CVP Long-term Contract Renewals;
- American River Flow Management Standards;
- Sacramento River Water Management Program; and
- Sacramento River Reliability Study.

Each of these efforts is described briefly in Attachment A along with discussion of the relationship to the County water right and use of FRWP capacity. Understanding the context of

the FRWP and history is needed to realistically appraise the County opportunity and negotiate with the SWRCB.

CURRENT DATA, MODELING AND ANALYSIS TOOLS

Current data, modeling and analysis tools, and analysis results that were applied to the FRWP were obtained and evaluated. These include:

- Water Forum Analysis and Modeling;
- CALSIM Benchmark Studies;
- OCAP CALSIM Analysis; and
- FRWP CALSIM and Other Modeling Analysis.

The models and related studies are interrelated and build upon one another. The CALSIM Benchmark studies (DWR/BPR, 2002) define the hydrologic period; the project and policy assumptions used on the CALFED analysis and for subsequent projects analyses; and provide the basis for comparison of alternatives. The prior water availability analysis relied on draft benchmark studies from September 2001 (SKS, 2003; SJC PWS, 2003), though the differences are minor and would not change the prior conclusions.

The Benchmark results and baseline conditions were used in the OCAP modeling evaluations of CVP-SWP operations. The OCAP analysis has been relied upon by the FRWP and by other Sacramento and San Joaquin projects to provide the key assumptions and baseline information for environmental documents, and to support the consultations with FWS and NOAA Fisheries.

The CALSIM II modeling for OCAP and FRWP were used to assess the potential effects of project alternatives, including river flow, reservoir storage, surface water deliveries, water quality, water temperature, salmon mortality, and hydroelectric power generation. CALSIM II is a general-purpose planning model developed jointly by DWR and Reclamation for simulating operation of California's water resources system, specifically the CVP and the SWP. The same version of CALSIM II was used for the FRWP DEIR/EIS and for the OCAP.

For the FRWP, CALSIM II studies were prepared interactively with EBMUD's reservoir operation model, EBMUDSIM, and SCWA's water allocation model. The SCWA analysis tool is a spreadsheet model developed for SCWA and used to determine the mix of the various surface water and groundwater supplies, based upon diversion capacities at the FRWP and the Sacramento Water Treatment Plant diversion points on the Sacramento River, CVP contract allocations, and Delta Excess water availability. CALSIM II has become the de facto tool for evaluating CVP-SWP operations, major water supply projects, and implementation of other state and federal policies, regulations, and water right decisions, including those on the American River. The model is the best and most appropriate modeling tool available.

Reclamation has developed a reservoir operations model to evaluate the daily operations of Folsom Reservoir and the effects on temperature and water quality on the lower American River. This could be applied to further analysis of temperature and flow effects that are to be required by the SWRCB as part of an environmental review.

There is currently an investigation to develop a more detailed daily time step model of the American River above Folsom. Such a model would help when making operational decisions for facilities on the river, and for better quantifying the regional hydrology for purposes of evaluating water right and fishery flow requirements. This modeling tool when complete would provide better input and greater resolution for CALSIM modeling. The modeling is sponsored by Reclamation and is scheduled to be complete mid-2006.

FREEPORT REGIONAL WATER PROJECT DESCRIPTION AND STATUS

The Freeport Regional Water Authority (FRWA) and EBMUD were contacted to obtain the most current project design information and cost information. A meeting was held with the EBMUD on November 3, 2005 to discuss the project status and opportunities for further cooperation. The EBMUD is amenable to the County bringing a proposal to the table. Work also included contacts with other entities involved in analysis and permitting of the FRWP (See references and bibliography at the end of this report).

PROJECT FACILITIES

The project facilities description has not changed significantly from that described in the FRWP Final Environmental Impact Report (FEIR; FRWA, 2004). These facilities are generally shown in the attached Figures 1 to 4. The FRWP consists of the following major elements:

- The 185 MGD intake and diversion facilities, including a fish screen and pumping plant and setline basin;
- Reservoir and a water treatment plant known as the Zone 40 Surface Water Treatment Plant (WTP), located in central Sacramento County;
- Terminal facilities located at the point of delivery to the FSC;
- Canal pumping plant located at the FSC terminus to boost water to the Mokelumne Aqueducts/Camanche Reservoir area;
- An aqueduct pumping plant and pretreatment facility situated near the Mokelumne Aqueducts/Camanche Reservoir area. This pumping plant would add the necessary system pressure to allow the water to be pumped into the Aqueduct;
- Four pipelines segments carrying the water from the intake facility to the Sacramento Zone 40 Surface Water Treatment Plant (Sacramento WTP) and to the Mokelumne Aqueducts:
  - 185 MGD–capacity (84-inch) pipeline from the intake facility to the turnout to the Zone 40 Surface WTP,

- 85 MGD–capacity (60-inch) pipeline from the turnout to the Sacramento WTP,
- 100 MGD–capacity (66-inch) pipeline from the Sacramento WTP turnout to FSC, and
- 100 MGD–capacity (66-inch) pipeline from the terminus of the FSC to the Aqueduct.

During project implementation, each participating agency will have responsibility for certain aspects of project construction, mitigation implementation, and operation. In general, these responsibilities can be described as follows:

- FRWA: construct and operate the intake and appurtenant facilities, the pipeline from the intake facility to the FSC, and the pipeline to the Sacramento WTP facility.
- SCWA: construct and operate the Sacramento WTP and appurtenant facilities.
- EBMUD: construct and operate the pipeline from the FSC to the Mokelumne Aqueducts, the FSC pumping plant, and the Mokelumne Aqueduct pumping plant and pretreatment facilities (optional).

The first two sets of "shared" facilities are to be built, operated, and maintained by the FRWA partners. The last set of facilities is to be developed and managed by EBMUD. The County will need access to both the shared and EBMUD facilities. The FRWP is at the 100% design stage for the intake and 60% design stage for the FRWA and EBMUD portions of the pipeline.

The 185 MGD–capacity intake facility (Freeport Intake Facility) and pumping plant will be located on the Sacramento River near the community of Freeport as shown on Figure 1. The basic elements of the intake facility are the intake structure located on the riverbank, which houses the pump station and includes fish screens, and several associated features located on the landside of the levee, including an electrical switchyard, chemical injection facility, surge tanks, air compressor station, and a series of sediment settling basins. The pump station will be located within the intake facility, and the remaining features would be located behind (north and east of) the intake facility. The entire facility, including the intake facility and associated features requires approximately 7 acres. The pump station will include seven to nine vertical turbine pumps with a total capacity of 185 MGD enclosed in a structure approximately 225 feet long and would accommodate a pump spacing of about 15 feet, assuming nine pumps.

The sediment settling basins will take approximately 2 acres and are to be configured of two or more cells that will remove larger sediment prior to transport through the pipelines to the Sacramento WTP and FSC. The ponds are designed to operate under a wide range of river-flow conditions and are assumed to be cleaned at least annually with collected materials hauled to the nearest landfill, most likely at Kiefer Road near Grant Line Road.

As shown on Figure 2, from the intake facility site on the Sacramento River, the alignment for the 84-inch pipeline would travel northeast to I-5 and southeast along I-5, crossing under

I-5 before reaching the intersection with the future extension of Cosumnes River Boulevard. From this intersection, the alignment follows the proposed future extension of Cosumnes River Boulevard between I-5 on the west and Franklin Boulevard on the east. The alignment then crosses portions of the open-space lands surrounding the Sacramento WTP. It then continues along the existing Cosumnes River Boulevard, crosses additional open-space land to avoid the SR 99/Cosumnes River Boulevard interchange, crosses under State Route 99, then turns north on Power Inn Road to the intersection with Mack Road. From this point on, it follows Elsie Avenue, Wilbur Way, and Gerber to the turnout to the Sacramento WTP.

At this juncture, to be located at Bradshaw and Gerber Road, a 60-inch pipeline would go to the Sacramento WTP via Bradshaw Road to the intersection with Florin Road, and then east on Florin Road to the Sacramento WTP. The County has no plan or need to participate in the 60-inch pipeline or Sacramento WTP.

The County would rely on the 66-inch pipeline used to convey EBMUD or County water down Gerber Rd. to the terminus at the FSC. The FSC is a federal facility owned and operated by Reclamation. Use of the FSC by the County would be subject to approval by the Reclamation and require a "Warren Act" contract. The terminal facility will consist of a weir and outfall structure. Additional sediment removal or water quality treatment may be needed prior to discharge into FSC to protect water quality in the canal and avoid impacts to the Sacramento Municipal Utility District (SMUD) who takes water from FSC for the power plant located at the Rancho Seco Site. EMBUD and FRWA would be responsible for any sediment removal from FSC that may result from the FRWP wheeling water through the FSC.

Water will be conveyed down the FSC to a canal pumping plant located at the FSC terminus where it will be pumped the Folsom South Canal Connector pipeline, an approximately 17 mile long, 100 MGD–capacity (66-inch) pipeline to the Mokelumne Aqueducts. The pumping plant will have a 100 MGD capacity and include debris removal facilities, electrical substation, surge control, emergency generators and a pumping plant building and control room located on just over 3 acres.

The new turnout near the southern end of the existing FSC is shown in Figure 3.
Figure 4 shows the FSC connector pipeline to the Mokelumne Aqueduct. From the new turnout, the pipeline alignment would extend east to Clay Station Road then turn south, continuing along Clay Station Road to the intersection with Liberty Road, turn east, and travel along Liberty Road to just east of the intersection with SR 88. From Liberty Road, the pipeline alignment would continue southeast to East Buena Vista Road, paralleling the road to the east, to EBMUD's property line. From East Buena Vista Road, the pipeline alignment would head south, crossing the Mokelumne River, traversing EBMUD's Camanche Reservoir property to SR 12, crossing SR 12, and following the east side of Cord Road to Acampo Road. From Acampo Road, the reach would extend southeast 4,500 ft to the Mokelumne Aqueducts.

Previously, two locations were evaluated for a WTP used to treat water prior to going into the Mokelumne Aqueduct. The current design does not include treatment facilities though these may be added in the future and were studied in the EIR.

FRWP Operations

FRWP planned design diversion capacity of 286 cfs. Of the 286 cfs, SCWA controls 131 cfs and EBMUD can use up to 155 cfs. SCWA plans on using their full 131 cfs capacity to meet build-out levels of demand. EBMUD's use is constrained by the limitations of the CVP contract and can only occur in dry and critically dry years. Figure 5 shows the SCWA and EBMUD proposed diversions based on the 2020 Level of Development (LOD) over the 70-year period of analysis.

SCWA

SCWA provides water to areas in central Sacramento County. SCWA is responsible for providing water supplies and facilities throughout these areas, including the Laguna, Vineyard, Elk Grove, and Mather Field communities, through a capital funding zone known as Zone 40. The long-term master plan for Zone 40 (SCWA, 2005) envisions meeting present and future water needs through a program of conjunctive use of groundwater and surface water. The water conveyed through the FRWP is an important component of the Zone 40 Master Plan.

Total long-term average Zone 40 water demand is estimated to be 109,500 afy at build-out. Long-term average surface water use is expected to be 68,500 afy. Under the Water Forum Agreement, the maximum SCWA may divert in any single year could be up to 90,000 afy for Zone 40.

There are multiple water sources that will be diverted through the SCWA 131 cfs capacity. As was shown in Figure 5 shows, SCWA diversions will vary based the type of water year and the various sources SCWA plans to convey through the FRWP. There may be limited opportunities for the County to make use of SCWA capacity prior to build out, but this is not likely once Zone 40 is fully developed.

SCWA's primary sources of water for Zone 40 are its existing P.L. 101-514 CVP water supply contract, commonly known as the Fazio contract; an anticipated assignment of a portion of the SMUD CVP water supply contract; potential appropriative water right on the American and Sacramento Rivers; potential transfers of water from areas within the Sacramento Valley, and groundwater in the central county basin. Table 1 summarizes the total surface water supplies from these sources assumed for facility planning. Each of these sources is briefly described below.

Table 1. Total SCWA Existing and Anticipated Surface Water Supplies*

Surface Water Entitlement	Estimated Long-Term Average Use
P.L.101-514 CVP water supply contract [1] (Fazio)	12,500
SMUD CVP contract assignments	25,500
Appropriated or transferred water	16,000[2]
Other water supplies	14,500 [3]
Total long-term average surface water use	68,500

* From Table 2.4 of FRWP EIR/EIS

[1] MWH 2005 Master Plan identifies max, min, and average use of CVP water as 45 K, 8.7K, and 38K.

[2] MWH 2005 Master Plan says for 12 K afy or less for 30 % of the years of appropriative water is used (avg = 2,700, max = 71K, min = 0).

[3] MWH 2005 states max, min, avg as 9600, 0 and 6200 af. Note that 'other' also includes 9300 af from City of Sac agreement for City's American River place of use water.

CVP Water Supply Contracts

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

SMUD CVP Contract Assignments

SMUD has an existing CVP contract. An agreement-in-principle has been signed by SMUD, the City of Sacramento, and SCWA. Under that contract, two assignments totaling 30,000 afy of water would be made available to SCWA. The agreement to effectuate both assignments is currently being negotiated. The quantity of water to be obtained under the SMUD assignment could be offset completely or in part by some or all of the SCWA other water supplies.

Appropriative Water Right

On May 30, 1995, the Sacramento County Board of Supervisors approved the water right application to the SWRCB for the appropriation of water from the American and Sacramento Rivers. The amount of water available would be determined after an evidentiary hearing before the SWRCB, wherein environmental and public interests will be balanced with SCWA's need for water. SCWA has rated their American River water right as having a low reliability (MWH, 2005). These potential sources are estimated to be diverted at an average rate

of 16,000 afy and could be used in conjunction with existing groundwater supplies to increase long term groundwater yields. This quantity of water could be offset completely or in part by some or all of the other water supplies described. The potential environmental effects of using this supply were assessed in the FRWP EIR/EIS. The modeling analysis in the FRWP EIR/EIS also will serve as the 'water availability' analysis and environmental documentation that are required by the SWRCB to support water right determinations. It is expected that Sacramento County will pursue further SWRCB action to perfect the water right permit in the spring of 2006.

Other Water Supplies

The Central Sacramento Groundwater Basin includes the planning area referred to as Zone 40. As Zone 40 approaches build-out conditions in the future, more reliance on other potential sources of water or methods of supplementing groundwater yields will be necessary to comply with long-term average operational groundwater yield limitations while meeting build-out demand. Possible options for meeting this demand could involve:

- Acquiring water through transfers from other water users upstream of SCWA diversion points;
- Using the City of Sacramento's American River entitlements in that area of Zone 40 that is within the City's authorized American River Place of Use;
- Supplementing natural recharge during wet years with existing supplies;
- Using reclaimed water from the SRWWTP on an exchange basis; or
- Acquiring additional appropriated water.

The potential environmental effects of using a water right transfer were addressed in the FRWP EIR/EIS at a programmatic level. Some of the above strategies may require subsequent or further project level review.

Many of these sources of water have not been perfected or vary in their reliability. This indicates that some of the SCWA capacity may be subject to use by the County prior to build out of Zone 40, or based on mutual benefits to be achieved through allowing access to SCWA capacity. SCWA has flexibility and a long term view for how to operate within the 131 cfs capacity. The figures presented above also shows that the SCWA water is subject to the same type of policy and hydrologic constraints that the County will face.

EBMUD

EBMUD is to use the FRWP to increase the dry-year supply reliability of its water supply system and to provide greater operational flexibility. The FRWP will allow EBMUD to access CVP water in accordance with its CVP amendatory water service contract and associated stipulations. EBMUD's CVP supply is 133,000 af in any 1 year, not to exceed 165,000 af in any consecutive 3-year period of drought when EBMUD total system storage is forecast to be less

than 500,000 af. The FRWP EIR/EIS (EBMUD, June 2001) provided the environmental review that was required to divert under the CVP Amendatory Contract. EBMUD would take delivery of its entitlement at a maximum rate of 100 MGD (9500 af/month @ 155 cfs). EBMUD deliveries would start at the beginning of the CVP contract year (March 1) or any time afterward. Deliveries would cease when EBMUD's CVP allocation for that year is reached, when the 165,000 af limitation is reached, or when EBMUD no longer needs the water, whichever comes first.

EBMUD deliveries are simulated to occur in 32 of the 72 water years simulated, and about 20% of the total months. The annual average delivery to EBMUD would be 23,000 afy; the maximum water delivery to EBMUD would be 99,000 afy.

Other Related Agreements

EBMUD has agreements related to the FRWP with the SMUD, Santa Clara Valley Water District (SCVWD), and the Contra Costa Water District (CCWD). The SMUD agreement is related to EBMUD's use of FSC. Putting water from the Sacramento River into the FSC could alter water chemistry and affect the use of the water at SMUD's Cosumnes Power Plant. The agreement is to ensure that any water quality and financial impacts are mitigated. The agreements with SCVWD and CCWD were needed to remove protests and resolve issues that arose prior to FRWP approval.

Any changes to the operations as currently proposed to allow the County to use the FSC and which could affect these agreements would need to be reviewed and any impacts mitigated. Any agreement between the County and EBMUD must be consistent with the "Principals for Use by Other Parties of Unassigned EMBUD Capacity in the FRWP (February 8, 2005) as presented in Attachment B. There could be additional costs for necessary mitigations that would be made part of the EBMUD/County agreement.

FRWP Environmental Documents and Permitting

The proposed FRWP facilities construction and operations have been reviewed and approved pursuant to the CEQA, NEPA and the ESA. The FRWP EIR/EIS was circulated and certified and the federal Record of Decision was issued January 2005 (FRWP, 2003, 2004).

The FRWA has consulted with responsible federal and state agencies to obtain necessary permits; ensure that project effects have been mitigated; and that there is no jeopardy to listed species. The U.S. Fish and Wildlife Service Biological Opinion (FWS, 2004) covered upland species, delta smelt and other fresh water species. To address salmon and steelhead, the FRWP was evaluated by NOAA Fisheries as part of the formal consultation for the CVP Operations Criteria and Plan (OCAP; Reclamation, 2004), and is covered by the OCAP Biological

Assessment (BA; Reclamation, 2004) and BO issued by NOAA Fisheries covering anadromous species.

The OCAP BO from NOAA Fisheries has been legally challenged and this could result in changes to operating requirements and conditions for the FRWP and other CVP projects which relied on the OCAP BO and associated analysis. Matters of legal opinion and interpretation are to be decided by the courts or during settlement discussion.

On July 29, 2005 NOAA Fisheries requested that the CALFED Science Program review the science underlying its biological opinion. NOAA Fisheries requested the CALFED Science Program organize an independent review of the BO and the related BA prepared by the Reclamation and DWR. A final report was submitted to the Lead Scientist in early January 2006 (CALFED, 2006). A public meeting was held in January 2005 at which the panel presented its findings and responded to questions. The panel was asked to determine if NOAA Fisheries used and interpreted the best available science in preparing the BO. The Panel was unanimous in its finding that the scientific information used in the BO is not the best available. This subjects the OCAP to challenge.

The FWS and NOAA Fisheries reviews for FRWP did not evaluate a full utilization scenario that would have included use of the available capacity at times when the EBMUD was not making full use of the project. In other words, the County use of the capacity would be subject to separate review and consultation to comply with the Federal ESA.

As described further below, CALSIM was used for analysis for purposes of CEQA, NEPA and ESA compliance for both the FRWP and OCAP. This is important to the County because of the assumptions and baseline conditions used in the analysis. CALSIM Benchmark studies (DWR/Reclamation, 2000) provided the basis for comparing project alternatives and creating common assumptions.

Schedule

Land acquisition for pipeline alignments will begin in earnest in the first quarter of 2006 and all final permits are anticipated by the middle of 2006. Under the current schedule, the design of the diversion and intake facilities will be completed by June 2006, with the pipeline design completed in July 2006. Bids and contract awards would be completed by the end of 2006, and construction initiated in the second quarter of 2007. The FSC pumping plant and EBMUD portion of the project will be on roughly the same schedule. The project is scheduled to begin operations in the third quarter of 2009 (EBMUD, 2005; FRWA 2005).

Costs

The most recent cost data available is shown on Table 2. These costs are based on the updated 30% design. Detailed operations and maintenance costs, power costs and replacement

costs have not been prepared as of November 3, 2005 (EBMUD, 2005; FRWA, 2005). Final costs are still being evaluated and will be updated at 60% design. The wheeling costs will be the combination of the capital costs and the maintenance and operations cost and are subject to negotiations with EBMUD. The Wheeling cost elements are summarized in Table 3 (EBMUD, 2005).

Table 2. FRWP Costs

Facility	Costs ($M) Low	Costs ($M) High
Shared Facilities [1]		
Intake Facility	$75.39	$75.39
Pipeline Segment 1 (5.1 miles, 84")	$52.09	$52.09
Pipeline Segment 2 (7.6 miles, 84")	$81.27	$81.27
Pipeline Segment 4 (1 mile, 60" to WTP)	$8.52	$8.52
Shared Subtotal	**$141.88**	**$141.88**
Adjusted Shared Total[2]	**$184.44**	**$184.44**
EBMUD Facilities [3]		
EBMUD Branch Pipeline [4]	$35.00	$35.00
FSCC and Aqueduct Pumping Plant	$166.00	$199.00
Camanche Treatment Facility [5]	$0.00	$0.00
EBMUD Only Subtotal	**$201.00**	**$234.00**
Total	**$385.44**	**$418.44**

1. FRWA is construction costs. Shared facilities costs from FRWA October presentation to the Board.
2. Adjusted Shared Total includes 30% cost of capital mark-up on FRWA construction cost.
3. EBMUD facilities cost from EBMUD meeting notes binder, November 3, 2005.
4. Same as FRWA Segment 3 (3.9 miles, 66") from turnout to Sac WTP to FSC. Costs reported as $22.93M by FRWA.
5. Currently not included. Deferred until water is available from FRWP. County does not anticipated participation.

Table 3. Capital, Operations and Maintenance Cost Considerations

Cost Center	Facilities in Cost Center	Cost Type	Period	Cost Item	Cost Sub-Component
FRWA Cost Center	(1) FRWA Intake; (2) FRWA Pipeline to SCWA Turnout; and (3) EBMUD Pipeline to Folsom South Canal	Variable	Monthly	Power	N/A
				Chemicals	N/A
				Operations Labor & Maintenance	N/A
			Annual	System Start Up	N/A
				System Shut Down	N/A
		Fixed	Annual	Facility Maintenance (e.g., maintenance required regardless of whether system operates)	Labor
					Supplies
					Vehicles
				Capital Recovery	N/A
FSCC Cost Center	(1) USBR Folsom South Canal; (2) FSCC Canal Pump Plant (3) FSCC Pipeline; (4) FSCC (Camanche); and (5) FSCC Aqueduct Pumping	Variable	Monthly	Power	Conveyance
					Pretreatment
				Chemicals	Conveyance (including chlorine & lime)
					Pretreatment
				Operations Labor & Maintenance	Conveyance
					Pretreatment
				USBR Conveyance Charge (for use of FSC)	N/A
			Annual	System Start Up	N/A
				System Shut Down	N/A
		Fixed	Annual	Facility Maintenance (e.g., maintenance required regardless of whether system operates)	Labor
					Supplies
					Vehicles
				Capital Recovery	N/A

Operations and Additional Facilities Needed for FRWP Use by the County

The FRWP as currently designed provides an opportunity for the County to convey water to the IRWMP area. The primary source of water proposed for conveyance through FRWP is the County's water right under Application 29657. The concepts for County use of the FRWP were documented in the prior water availability analysis and infrastructure reports (San Joaquin County Public Works, 2003; SWS, 2003). County operations are described further below. The current water right application would allow for diversion from December through June. It is important to emphasize that the FRWP would create infrastructure that would allow the County to pursue other water sources and supply opportunities from the Sacramento River through additional water right filings or through transfers.

Additional project facilities and plans to connect to proposed IRWMP/ICU facilities will be evaluated as part of the County's IRWMP/ICU program. Consistent with the IRWMP/ ICU program purpose and goals, the FRWP water would be used to support recharge the groundwater basin; reduce overdraft; repel saline intrusion; meet current demands; and bring the basin back into balance.

Such facilities include pipelines or canals to convey the FRWP water from the end of the FSC connector pipeline to the ultimate location for disposition of the water within the NSJWCD, SEWD and CSJWCD for either in-lieu (groundwater substitution) or direct recharge to the groundwater basin through spreading, percolation/recharge ponds or injection. One likely location for a County turnout from the EBMUD FSCC pipeline would be in the area of Clay Station and Liberty Road, in the area of where the FSC was originally intended to end. NSJWCD facilities are close to this location and would be the most readily connected. Some of the natural drainages may also be used to convey and recharge water. Conceptual project locations are shown in Figure 6.

Additional facilities may be proposed to pump and convey water to operational storage in the proposed Duck Creek Reservoir. The location of these facilities would most likely be at the Mokelumne Aqueducts/Camanche Reservoir area or down stream of any EBMUD Water Treatment plant. Duck Creek or a similar type of off-stream storage would increase the operational flexibility and yield of the County's use of the FRWP.

The proposed place of use is defined in the County's water right application. Upon storage in the groundwater basin, the water could be subsequently withdrawn by wells for use within the planning area, or made available as part of a County water storage and banking program that is included in the IRWMP/ICU program and is consistent with the County's ordinances and regulations. If another entity's water is to be banked, that entity would need to ensure such operations are consistent with their water right permit or the applicable state or federal contract.

The costs for new facilities within the County have not been estimated and subsequent estimates will be included in the IRWMP/ICU once the FRWP 60% costs and the maintenance and operations costs have been more firmly established.

The County previously evaluated participation in the proposed FRWP (SWS, 2003). In the County's comments on the FRWP DEIR, the County requested the FRWA consider alternative facilities to expand the FRWP to allow for conveyance and delivery of the full 350 cfs listed in the County's water right filing. None of the concepts were included by the project sponsors in the final FRWP project design since the alternatives evaluation was complete. Such action would have resulted in schedule delays; the project was nearing approval; consultations with the resources agencies were well underway; and the environmental documents were ready to be certified by the lead agencies. There are technical, regulatory, and political constraints that make further consideration of a proposed FRWP expansion infeasible. As a result, the analysis

in this TM is focused on County's use of the available FRWP capacity given currently proposed facilities and operations.

ISSUES, CONSTRAINTS AND OPPORTUNITIES

The County's full use of the available FRWP capacity could be limited by technical, policy, or regulatory constraints as discussed in this TM. This section evaluates the issues, constraints and opportunities associated with the County water right filing and use of the FRWP available capacity.

WATERSHED PROTECTION ACT

It should be noted that the SWRCB in D858 (1958), directed the County to the American River as the source of supply for the County to meet current and future demands. The County's use of South Fork American River water would meet the definition of a water right in a protected area since it is immediately adjacent and can be conveniently served from the American River watershed. The Watershed Protection Act would allow the County, as a new in-basin water user, first priority to natural flows before the more senior water right of the CVP and SWP to export natural flows. It is important to note that there are CVP contracts in the area of origin that are not export contracts.

The County is seeking coverage for Application 29657 under the Watershed Protection Act as defined in the California Water Code section 11460. The Watershed Protection Act was intended to provide in-basin water users assurances that their water right to divert natural flows would be protected over those for export uses. The Watershed Protection Act applies to the CVP and SWP and states that, in the operation of the CVP and SWP[2]. DWR and Reclamation cannot directly or indirectly deprive; (1) the watershed, or (2) area wherein the water originates, or (3) area immediately adjacent that can be conveniently served from the watershed, of the prior right to all the water reasonably required to adequately supply the beneficial needs of the watershed. Note that some of the CVP contractors are within the area of origin and not considered exporters.

The CVP and SWP have the responsibility to meet water quality and flow standards in the Bay/Delta Estuary necessary to protect municipal supplies, agricultural water quality, fish, wildlife, and other beneficial uses. The Water Quality Control Plan for the Bay/Delta sets flow and water quality standards. The SWP and CVP are required to bypass flows and release stored water to meet these standards.

[2] Much of this text was abstracted from the Water Transfer Work Group report (SWRCB, 2002). The Work Group and report interpret the Watershed Protection Act, but noted that the interpretation was not endorsed by all participants, is not a legal interpretation, and is intended to represent important perspectives and positions.

The Watershed Protection Act effectively establishes a reversal of priority as between the priority dates of the CVP and the SWP water right, generally 1927 and 1931, and any later filed applications for use of water within the protected area. This reversal of priority applies to the diversion of natural and abandoned flows for export use by the CVP and SWP (SWRCB, 2002). It is important to distinguish that there are also CVP contractors within the area of origin that do not receive export water.

The Watershed Protection Act has been interpreted by the SWRCB in numerous water right decisions. In Decision 1485, the SWRCB used the Watershed Protection Act and numerous other laws to implement water quality standards in the Bay/Delta Estuary as a requirement of the water right permits of the CVP and SWP. Later, in water right Decision 1594, the SWRCB established that new water right permits in the Sacramento River and San Joaquin River watersheds should also contain conditions to help meet Bay/Delta standards. The County water rights application should premise as an area of origin claim by the SWRCB.

County Water Right Application 29657

The County's water right application was originally filed in 1990 and sought 620 cfs (322,000 af per annum; 190,000 of surface storage) from the South Fork of the American River to be diverted from December 1 through June 30 from either the proposed diversion or down the FSC.

In August 2003, the County filed Amendment No. 1 to Application 29657, reducing the diversion to 350 cfs (147,000 af per annum) for direct use and recharge of the San Joaquin groundwater basin, and moving the point of diversion to the FRWP. The amendment also sought to preserve access to the FSC if this could be worked out with Reclamation. At that time, the feasibility of the FRWP was still under evaluation and the environmental review was not complete.

In February 2005, the County filed Amendment No. 2, eliminating other proposed diversion locations and limiting itself to diversion via the FRWP, also asserting that the application should be based on granting of area of origin status[3]. The application did not seek diversion of Sacramento River water, but simply moved the diversion of South Fork American River water to the FRWP diversion site. The application also clarified the intention to store water in the groundwater basin through the subbasin of an Underground Storage Supplement, re-divert and store water in Duck Creek Reservoir, and for direct use 'in-lieu' of groundwater pumping.

The County has made good faith attempts to conform to the rules and regulations of the SWRCB and remove any defects that would constrain the SWRCB from noticing the application and moving towards hearings. The SWRCB can request additional information reasonably necessary to clarify, amplify, correct, or otherwise supplement the information submitted with

[3] Water Code §11460

the application. This usually includes information needed to; a) demonstrate that unappropriated water is available for appropriation; b) comply, or demonstrate compliance with, applicable requirements of the Fish and Game Code or the federal Endangered Species Act; and c) comply with CEQA[4].

The issues of water availability and FRWP capacity, fisheries impacts, and environmental compliance are discussed further below.

Water Availability and FRWP Capacity

A water availability analysis is required by the SWRCB to move forward with the water right hearing process and take action on the County application[5]. In 2003, the County submitted a water availability study (SKS, 2003) to the SWRCB. No written comments were received from the SWRCB.

To further document the historical availability of flow on South Fork American River, two USGS stream gauging stations near the original point of diversion of Application 29657 were identified as shown in Table 4.

Table 4. USGS Stream Gauging Stations Near Point of Diversion

USGS Gauge ID	Gauge Name	Period of Record	Average December through June Flow (af)
11444500	South Fork American River near Placerville	8/1/1964 – 9/30/2004	788,000
11445500	South Fork American River near Lotus	10/1/1951 – 9/30/1995	782,000

Flows near the point of diversion of Application 29657 on the South Fork American River have historically averaged between 782,000 to 788,000 AF for December through June. These values are substantially greater than 147,000 AF for December through June sought by the County. A frequency analysis was conducted using the historical daily records of South Fork American River near Placerville and Lotus. Figures 7 and 8 show the percent of the time that a given flow was exceeded at the two gauges. The analysis was conducted using only the records for December through June. Only about 7% and 9% of time the flow rates were below 350 cfs for gauging stations near Placerville and Lotus, respectively.

Based on the historical record, there is water available from the South Fork of the American River for allocation to the County. As currently proposed, the County would pass this water through Folsom and Nimbus Reservoirs from December 1 through June 30 for diversion at the FRWP intake. The County does not seek to store any of the water in CVP facilities.

[4] Water Code §1275
[5] Water Code §1375(d) and §1260(k)

EBMUD diversion is constrained by their CVP contract and EBMUD can only make use of the full 155 cfs FRWP capacity in dry and critically dry years. Figure 5, presented previously, showed the SCWA and EBMUD proposed diversions based on the 2020 Level of Development (LOD) over the 70 year period of analysis. In general, about two-thirds of time EBMUD does not use its full 155 cfs capacity. This provides an opportunity for the County to make use of the FRWP to convey the County's American River water.

The difference between the EBMUD/SCWA FRWP use at the 2020 LOD and the total 286 cfs capacity is the maximum theoretical capacity available to the County. The capacity is available from December to June is shown on Figure 9. The County will be using only a portion of the proposed 350 cfs since the pipeline capacity and EBMUD define the County's opportunity. An analysis was conducted by post-processing CALSIM II simulation results and assumptions from the evaluation of alternatives in the FRWP EIR/EIS. The constraints imposed by the hydrologic year type show that the available capacity could vary from 0 to 65,000 afy. The average long-term annual available delivery is 53,000 afy based on the historical record.

The CALSIM modeling assumptions for OCAP, FRWP, and Water Forum included regulatory and environmental constraints based on the hydrologic year type. Figure 10 presents the average monthly (December through June) diversion capacity pattern used in the analysis for each of the hydrologic year types based on the Sacramento Valley Water Year 40-30-30 Index. The diversion pattern and year type were used to evaluate the available capacity. The graph and CALSIM II modeling indicate that in wet and above normal years, nearly all of the available 155 cfs capacity would be available, and the diversion pattern for these hydrologic years is not a major constraint. In normal years, constraints may be observed in March through June. In March through June of dry and critically dry years, EBMUD will use most of their capacity, limiting access to the FRWP by the County during this time.

The available FRWP capacity was compared to the flow at the South Fork of the American River as shown in Figure 11. This was done to evaluate how the proposed County water right compares to the overall flows at the South Fork of the American River. The figure demonstrates the relatively small percentage of South Fork American River flows that the County is seeking to pass down the American River to the FRWP for diversion.

Table 5 presents a monthly comparison of the available FRWP capacity, South Fork flows, percent of the available capacity of the FRWP, and the percent of South Fork flows that would be diverted and conveyed flows for each year type.

Table 5. Comparison of Available Capacity and South Fork American River Flow

Available Capacity (cfs) at Freeport								
	Dec	Jan	Feb	Mar	Apr	May	Jun	Average
Wet	139	148	148	155	155	155	155	151
Above Normal	140	140	144	145	155	155	155	148
Below Normal	155	155	155	111	111	111	111	130
Dry	EBMUD Reserved Use of Capacity							
Critical	EBMUD Reserved Use of Capacity							
South Fork American River Flow (cfs)								
Wet	1947	2304	2581	2523	3128	4011	3088	2797
Above Normal	1159	1883	1776	2499	2660	3037	1655	2096
Below Normal	623	807	1211	1220	2426	3008	1758	1579
Dry	464	453	785	1100	1725	1923	1024	1068
Critical	408	409	498	638	826	921	617	617
Percentage of South Fork American River Flow Wheeled through FRWP Capacity								
Wet	7%	6%	6%	6%	5%	4%	5%	5%
Above Normal	12%	7%	8%	6%	6%	5%	9%	7%
Below Normal	25%	19%	13%	9%	5%	4%	6%	8%
Dry	EBMUD Reserved Use of Capacity							
Critical	EBMUD Reserved Use of Capacity							

1. With estimated stream flow data for 1923 to 1951 for USGS 11445500 based on a regression relation equation built between Station 11445500 (near Lotus) and Station 11443500 (near Camino) for period 1952-1967. The R2 value for the equation was 0.92.

2. The monthly values were broken down into five categories of year type per Sacramento Valley Water Year Index 40-30-30.

Effects on Flow and Fishery Resources in the Lower American River

The hydrologic year type indicates times when there are challenges to meeting fishery flow requirements on the lower American River. One of the benefits of moving the County point of diversion from South Fork American River to Freeport site is for meeting the proposed Flow Management Standards in the lower American River.

The County proposes to pass water through Folsom and Nimbus from December through June primarily in normal, above normal, and wet years when EBMUD is not using their FRWP diversions. The FRWP fully evaluated the fishery impacts in the dry and critically dry years in the FRWP EIR/EIS and BA. The BO and FRWP Final EIR/EIS found no jeopardy and no impacts to listed species or habitats that were not mitigated.

To quantitatively evaluate the potential effects to the lower American River, the CALSIM II releases at Nimbus Dam were evaluated. This was done by adding the monthly flows that would occur under the County's proposed water right permit to the Nimbus releases over the 1922 to 1992 time period, then analyzing the changes to the release in the various hydrologic conditions and year types. The CALSIM II 2020 LOD, Alternatives 2-5 of FRWP analysis were used for baseline condition.

This analysis shows the effects of passing the South Fork American River water through Folsom and Nimbus during the months of December to June. Table 6 presents the results of this comparison (by year type), showing the average diversion amounts for the months of December through June. By adding the San Joaquin proposed Freeport diversion amounts to the Nimbus release, there is a 2% to 6% increase in Nimbus release as comparing to 2020 LOD.

Table 6. Average Nimbus Release (cfs) for December through June by Year Type

Year Type	2020 LOD[2]	2020 LOD plus San Joaquin Diversion[3]	Percent Change
Wet	6,668	6,819	2%
Above Normal	4,662	4,810	3%
Below Normal	3,125	3,255	4%
Dry	2,144	2,257	5%
Critical	1,300	1,374	6%
All Years	3,875	4,001	3%

1. 2001 LOD, Alternatives 2-5 of FRWP.
2. 2020 LOD, Alternatives 2-5 of FRWP
3. 2020 LOD, Alternatives 2-5 of FRWP plus San Joaquin Diversion to maximize use of EBMUD available capacity.

Figures 12 to 16 show the average monthly Nimbus releases for each of the water year types, comparing the 2001 LOD, 2020 LOD, and 2020 LOD with San Joaquin Diversions at Freeport. There is very little variation between the scenarios in the average monthly releases from Nimbus in wet, above normal and below normal years. In these year types, the data indicate that the Nimbus releases with the County diversion would be similar to the releases at the 2001 LOD, and only marginally higher than the 2020 LOD. It should be noted that the 2020 LOD is less than the 2001 LOD in these years because some of the future diversions are to occur above the Nimbus Dam.

In dry and critical years, the Nimbus releases with County diversions are not substantially different from the 2001 LOD and 2020 LOD scenarios. The ability to divert during dry and critically dry years is constrained by the EBMUD use of the FRWP capacity in these year types.

As a result of the prior analysis and the information in this memorandum, it was concluded that the County's use of EBMUD capacity in normal, above normal, and wet years will not have any significant negative environmental effects on aquatic resources based on minor changes to the flow regime on the lower American River as a result of the proposed operation. The change in operations to accommodate County use of FRWP will be consistent with, and will likely help meet FMS proposed for the lower American River by the Water Forum (Attachment B).

CEQA Compliance by SWRCB

The SWRCB requires an environmental review be completed pursuant to CEQA in order to make determinations and decision on a water right application. In the past, the SWRCB has

relied on environmental review documents prepared or submitted by the lead agency and has not typically undertaken separate CEQA review for water rights permits. The SWRCB, acting as the lead agency, typically enters into a Memorandum of Understanding to develop the necessary environmental documents with the water right applicant. The environmental analysis contained in the FRWP EIR and other EIRs may be used by the County and the SWRCB to streamline the review and help make needed decisions and determinations. The County will need to work with the SWRCB to integrate their CEQA requirements into the environmental compliance strategy for the County's IRWMP. Other CEQA compliance issues for the County are discussed further below.

ACCOUNTING FOR AMERICAN RIVER WATER

The key decisions for the SWRCB are related primarily to the priority and legal theories behind the County water right permit, the CVP water right to the American River for the American River Diversion, new water right filings, and legal tests for seniority of water right that have already been filed. The accounting for American River current and future diversions are important to the County since the SWRCB needs a correct and accurate accounting of American River water to establish water rights priorities, make environmental determinations, and assign cutbacks based on hydrologic year types between CVP and non- CVP water rights holders.

Using the Water Forum, OCAP and FRWP environmental documents and associated modeling results, the water diverted between the 1998 baseline and future 2020 LOD were evaluated. Tables from the OCAP BA provide the most recent detailed accounting and are presented in Attachment D. CALSIM II input and output files were reviewed to more firmly distinguish between water that was accounted for as:

- CVP, non-CVP, and "Water Right of Non Project" interests;
- Water from the different branches of the American River; and
- Sacramento River or the American River.

Demands for American River water for baseline and assumed future conditions are summarized in Table 7 which compares the American River demands reported in a) the Forum EIR, b) Forum EIR Modeling Appendix G, c) OCAP BA, and d) DEIR/EIS (FRWA, 2003). The table shows the American River baseline demands, the assumed future demands, and the difference between the two for each of the four analyses. The data points out a number of issues.

Table 7. American River Demands (TAF/Year) for 2001 LOD and 2020 LOD

		CVP Ag Contracts	CVP M&I Contracts	Water Right/Non-Project	Total
a) Water Forum (Pg 4.3-5, Tables 4.3-3, and 4.3-4	1998 Base	N/A	14,500	214,600	229,100
	1998 + WFP	N/A	145,400	317,300	462,700
	Delta	N/A	130,900	102,700	233,600
b) Water Forum EIR Modeling Appendix G	1998 Base	1,000	50,100	206,100	257,200
	2030	36,000	103,550	432,450	572,000
	Delta	35,000	53,450	226,350	314,800
c) OCAP-BA (Tables 8-4 and 8-5)	Total 2001 LOD	0	50,850	166,335	217,185
	Total 2020 LOD	0	133,250	342,000	475,250
	Delta	0	82,400	175,665	258,065
d) FRWP (Table 2.1.1.3.2-3)	Total 2001 LOD	0	65,850	231,350	297,200
	Total 2020 LOD	15,000	180,850	400,850	596,700
	Delta	15,000	115,000	169,500	299,500

First, all of the modeling and accounting of American River water and water rights aggregated the data for the entire American River, and did not partition the water to the North, Middle, or South Forks of the American River. This does not allow for independent evaluation of the allocations or appropriations from the individual branches of the American River. None of the analyses for the Sacramento Water Forum, OCAP, and FRWP looked above the Folsom Reservoir.

Second, the prior modeling and environmental analyses stated that the baseline and future demand/diversion assumptions were consistent between the analyses, starting with the Sacramento Forum, moving to the OCAP, and finally as evaluated in the FRWP. The data from the various reports does not demonstrate that the assumptions for future American River diversions were consistent between projects. The data in Table 7 demonstrates that the assumed American River diversions and demands increased from the Sacramento Water Forum analysis, to the OCAP evaluation, and for the FRWP. It is especially important to note that the non-CVP water being claimed under a specific Non- Project water rights, tended to increase the most. The increased future diversion could be based on exercise of prior legal rights, the anticipated filing of new rights, or other legitimate claims to water, but the technical and legal basis for increased demand are not well documented in any of the reports. The legal basis for the increased diversions may be subject to legal interpretation of the water right under which the increases are being sought for the parties indicated. The water right basis for the increased diversions should be further researched since they could strongly influence the County water right application and the legitimacy of the assumptions.

It could be an available choice that the County diversion amounts being proposed pursuant to Application 29657 should have been accounted for in the volumes and period of diversion analyzed in the prior modeling and environmental documents. This conclusion would need to

be made based on legal interpretations and in context of the other water right claims, and more detailed evaluation of the future diversion and demand assumptions, water right and priorities.

If the County's diversion was included in the 2020 development and diversion assumptions, then the impacts of the proposed County diversion were evaluated from an operations, engineering, and environmental standpoint in the certified Water Forum, OCAP, and FRWP environmental documents.

Depending on the legal premise associated with the County's water right filing and the other water right indicated in Table 7, it could be reasonably argued that the water that would be diverted under the County's water right was accounted for in the volumes of increased diversion amounts used in the environmental evaluation of the Water Forum, OCAP, and FRWP. As such, the CALSIM modeling could be interpreted as having included the volume of water being sought by County, though there may be minor variations in the timing of diversion and amount diverted monthly. Also, since the FRWP EIR/EIS was supposedly based on the same set of assumptions and technical analysis as OCAP (e.g.; same 2020 level of develop and diversion scenarios), the environmental findings could also apply to the proposed County diversion. This could help the County and SWRCB to streamline the CEQA analysis for the County use of the FRWP.

The same modeling and assumptions were also used in the American River Long Term Contract Renewal EIS and the associated Biological Opinions. Both FWS and NMFS found no jeopardy to listed species in issuing the biological opinions for FRWP, OCAP, and the American River Long Term Contract Renewal.

As a result, it can be reasonably argued that the water availability analysis and technical modeling conducted for the Water Forum, OCAP, and FRWP would support the county's water availability analysis needed by the SWRCB to notice the County's water right application and move forward to the hearing stage. The above environmental analysis and finding for the certified and adopted environmental documents could also be used by the SWRCB in making water right determinations, or at minimum scoping the needed analysis to make decisions on the County water rights filing.

Reverse Flow Effects from County Use of FRWP

The use of the FRWP by the County is not anticipated to increase the potential for the Sacramento River to reverse flow or result in migration of water discharged at the SRCSD wastewater treatment plant located downstream from the point of diversion.

The potential for this to occur was analyzed in the FRWP environmental documents using a hydraulic model of the Sacramento River (FRWP, 2005). The model used was originally developed for use in the Sacramento Regional Wastewater Treatment Plant Expansion DEIR.

The focus of this modeling was on two representative "worst case" reverse flow periods involving low river flow, high tides, and maximum potential FRWP diversions. Results of the reverse flow modeling included defining the percentage of wastewater effluent that could be present at the FRWP intake location during the most severe reverse flow events and the simulations identified the duration of the reverse flow events. The analysis of "worst case" conditions) found that there would be no significant effects associated with reversed flows of the Sacramento River as a result of FRWP operations, and SRCSD discharges would not negatively effect the FRWP diversion water quality. The modeling also evaluated whether the FRWP would create conditions where the SRCSD would be in violation of the NPDES permit for the Sacramento County Wastewater Treatment Plan (SCWWTP) discharge to the Sacramento River. This included analysis of the full 286 cfs diversion at the FRWP under hydrologic conditions that would exacerbate the reverse flow conditions.

The County proposes to use the existing EBMUD capacity when it is available up to the full 155 cfs, and as such, this would not increase the diversion rate or volume over that already analyzed in the FRWP EIR/EIS under the existing "worst case" analysis.

FRWA is working with SRCSD to coordinate operations. This includes actions to:

- Ensure the FRWP intake does not divert water during reverse flow conditions;
- Meet environmental commitments;
- Apply automated stream flow monitoring equipment;
- Avoid the need for the SRWWTP to use of effluent storage when it would otherwise not be necessary; and
- Stop operations during the few hours of the peak higher high tide during extreme low-flow/high-tide events.

In January 2004, the FRWA Board approved Principles of Agreement with SRCSD and SCWA. The Principles of Agreement seek to ensure adequate separation of treated wastewater effluent and drinking water supplies; reliable and efficient operation of SRCSD's, SRWTP and FRWA's facilities; and minimization of operational impacts on both facilities. A coordinated operations agreement will be developed as a result of this coordination and the process will involve those agencies with jurisdictional responsibilities.

The County should track development of the coordinated operating agreement since any operations which would deliver water to the County through FRWP could be effected, and the County may want to become party to the agreement at some point. Future monitoring and revisions to the FRWP operations as a result of the monitoring under the Principals of Agreement could influence the County use of the available capacity should new data or information indicate operation impacts and reverse flow effects.

OTHER WATER RIGHTS ISSUES

Decision 1594 and SWRCB Term 91

SWRCB Water Right Decision 1594 established Standard Water Right Term 91(Term 91). Term 91 is added to all new water right permits that seek water in the amount equal to or greater than one cfs or 100 af per annum of storage or more within the Sacramento, Cosumnes, Mokelumne, Calaveras, or San Joaquin River Basins or the Sacramento - San Joaquin Delta when hydraulic continuity with the Delta exists, or is likely to exist, during the requested diversion season. It remains to be seen whether the SWRCB would apply Term 91 to a County water right permit, but it is believed that they will require Term 91.

Water availability for new in-basin projects or water right in the Sacramento River watershed is determined using Term 91 together with any local conditions that may be more restrictive. Term 91 states:

> *"No diversion is authorized by this permit when satisfaction of in-basin entitlements requires release of supplemental Project water by the Central Valley Project or the State Water Project.*
>
> *a) In-basin entitlements are defined as all rights to divert water from streams tributary to the Sacramento-San Joaquin Delta or the Delta for use within the respective basins of origin or the Legal Delta, unavoidable natural requirements for riparian habitat and conveyance losses, and flows required by the SWRCB for maintenance of water quality and fish and wildlife. Export diversions and Project carriage water are specifically excluded from the definition of in-basin entitlements;*
>
> *b) Supplemental Project water is defined as that water imported to the basin by the projects plus water released from Project storage which is in excess of export diversions, Project carriage water, and Project in-basin deliveries. The SWRCB shall notify permittee of curtailment of diversion under this term after it finds that supplemental Project water has been released or will be released.*
>
> *The Board will advise permittee of the probability of imminent curtailment of diversion as far in advance as practicable based on anticipated requirements for supplemental Project water provided by the Project operators."*

The SWRCB tracks the storage releases and exports made by the CVP and SWP. Term 91 is triggered once the only water exported by the CVP and SWP is from stored water, and additional storage releases are needed to meet in basin needs including Delta outflow requirements. When the CVP and SWP are just meeting Bay/Delta standards, the system is said to be "in balance" or that "balanced conditions" exist.

Balanced water conditions are defined in the Coordinated Operating Agreement (COA) between DWR and Reclamation as periods when releases from upstream CVP or SWP

reservoirs plus unregulated natural flows approximately equals the water supply needed to meet Sacramento Valley in-basin uses plus exports. During balanced water conditions Reclamation and DWR share responsibility for meeting in-basin demands and Delta water quality standards.

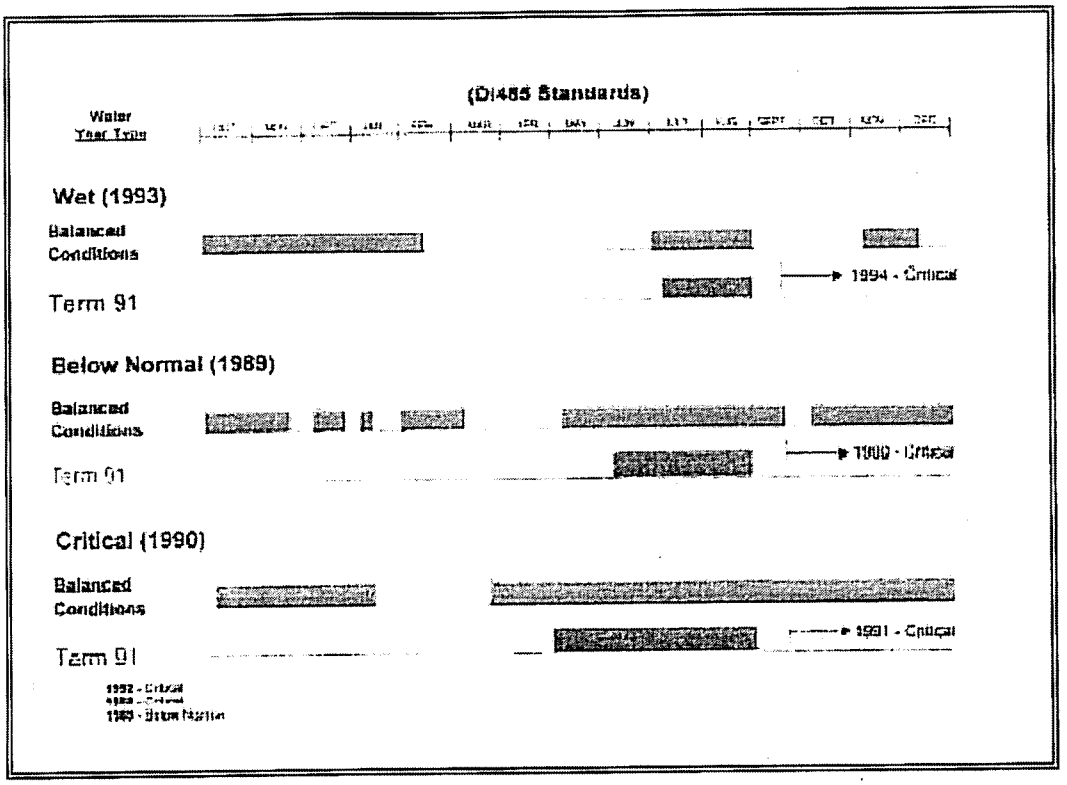
"Excess" water conditions are periods when releases from upstream reservoir storage plus unregulated flows exceed the Sacramento Valley in-basin uses plus exports. During excess water conditions, sufficient water is available to meet all the beneficial needs, and the CVP and SWP are not required to supplement the supply with water from reservoir storage. Reclamation and DWR have the responsibility to store and export as much water as possible, within the physical and contractual limits. When possible, Reclamation and DWR avoid releasing water from storage reservoirs like Folsom when there is excess water available since this reduces the amount of stored water available to meet contractor demands.

If Water Code Section 11460 is applied by the SWRCB, the County water right under Application 29657 would be an area of origin claim and regarded as an in-basin requirement, thus it would not be classified or accounted for as "excess". This would also mean that Term 91 might not apply, especially since the County is seeking to push the South Fork American River flows through Folsom without the need for storage.

Term 91 does not allow new water projects or more junior appropriators to divert when the Delta is "in-balance". The SWRCB is required to notify new in-basin water diverters that they are required to stop their diversions of water because there is no longer enough natural flow in the system to meet current in-basin demands including that needed to meet Delta standards. Continued diversion would require additional releases of stored water by the CVP and SWP thus creating an "injury" under the Water Code even taking into consideration the application of the Watershed Protection Act statutes.

Term 91 has historically been triggered as early as May in the driest years and typically continues until early September. It normally begins in mid June. In the wettest years (like 1998), it was not triggered at all. Term 91 conditions exist for a much smaller period of time than balanced conditions. Figure 17 compares three different years: wet, normal and dry years (SWRCB, 2002). The water years prior to and subsequent to the years shown in Figure 17 are either critical or below normal years. The first bar for each year shows the times that the Delta was "in-balance". This means that releases from storage or reduction in SWP or CVP diversions where needed to meet Delta water quality standards. The second bar shows the times that Term 91 was in effect.

Figure 17. Periods of Water Non-Availability without Watershed Protection and with Watershed Protection



The difference between the two bars for each year represents the benefit of the Watershed Protection Act to in-basin users. Without the Watershed Protection Act, the existence of "balanced conditions" would require the appropriations of in-basin water users with a priority after the 1927 CVP right and 1931 SWP right to cease diversions. Term 91 allows for water diversions for a much greater period of the year than does balanced conditions.

Reclamation, CVP and SWP contractors may want to see Term 91 applied to any claims to American River water and may not support decisions by the SWRCB that do not include this provision.

The El Dorado Irrigation District (EID) is currently seeking exemption from Term 91 for water right associated with Project 184. EID is clearly in the watershed and has claimed area of origin designation for water from the American River. The SWRCB applied Term 91 to EID water right permits. EID challenged the determination in court and the judge has ruled that Term 91 should not have been applied. The decision is on appeal.

Application of Term 91 to the County's American River water right permit will be a policy decision and legal interpretation by the SWRCB. The EID case will provide some case law once resolved and could provide a precedent. The application of Term 91 is contingent on the

priority date and seniority of the water right permit granted to the County, and the SWRCB's interpretation of the Watershed Protection Act Statutes.

PROGRESS IN WATER MANAGEMENT PLANNING IN SAN JOAQUIN COUNTY

The County has consistently included use of the American River in all of the published water planning documents and planned for use of a diversion point from the American River, or from the Sacramento River using the American River water right.

As listed below, the County has compiled a chronology of their efforts to obtain water from the American River, including the related actions of other third parties. Historically, as the U.S. Department of the Interior's Central Valley Project was being developed in California, the County was directed by the State of California (State Water Rights Board, the predecessor to the SWRCB) to look to the American River and the Auburn-Folsom South Unit as a major source of the water for the County to meet their current and future needs. The State Water Rights Board retained control of the water rights to the American River in order to protect the interests those entities entitled to water within area of origin. The State Water Rights Board directed the County to the American River water; it is reasonable to conclude that a portion of the area of origin water rights reserved by the SWRCB would be for the use and development by the County. This State Water Rights Board presupposition is confirmed by the fact that the County was subsequently denied entitlements to other sources of surface water supply, principally from the San Joaquin, Stanislaus and Mokelumne Rivers. It should be noted that these sources are clearly in the San Joaquin County area of origin.

In significant part, the County's reliance on American River water stems from numerous state and federal actions which have foreclosed other alternatives, while always directing the County to the American River; however, the Folsom South Canal extension into San Joaquin County has never been constructed and the County has never received the contemplated water supply from the American River. The following is cited to document the history:

A. Bulletin No. 11 of the State Water Rights Board entitled, "San Joaquin County Investigation," dated June 1955, includes a description of the Folsom South Canal extending southward to provide a water supply of approximately 303,000 af annually to the County. Bulletin No. 11 indicates that this water and canal is the "probable ultimate supplemental water requirement for the San Joaquin Area."

B. In Decision 858, issued on July 3, 1956, the State Engineer found that the North San Joaquin Water Conservation District could receive water from the American River through the Folsom South Canal and that this course would be cheaper and more dependable then Mokelumne River water which flows through the District. As a result of these findings, the North San Joaquin District was granted only a temporary permit to use water from the Mokelumne River and denied a requested permanent right.

C. Four entities within San Joaquin County, consisting of the North San Joaquin Water Conservation District, Stockton and East San Joaquin Water Conservation

District (now Stockton East Water District), City of Stockton, and the California Water Service Company, all filed to appropriate water from the American River. In Decision 893, adopted on March 18, 1958, the then State Water Rights Board at the request of the Bureau of Reclamation denied those permits. The Board, in granting the permits to the Bureau of Reclamation for the Folsom Project, conditioned the permit to allow time for parties desiring water within Placer, Sacramento, and San Joaquin Counties to negotiate a water supply contract. San Joaquin County interests did diligently negotiate for contracts, approved those contracts, and signed them, but they were not approved at the Washington level by the Bureau of Reclamation, as is noted below.

D. The Bureau of Reclamation report entitled "Folsom South Unit" dated January 1960 clearly identified the needs for supplemental water within San Joaquin County and service to the County through the Folsom South Canal. Again, this gave the County reason to rely on a water supply from the American River.

E. In 1967 and 1971, the Bureau of Reclamation furnished draft contracts to San Joaquin County and districts within the County to deliver, in part, American River water through the proposed Folsom South Canal to San Joaquin County. Negotiations regarding these contracts resulted in the Stockton East Water District, the Central San Joaquin Water Conservation District and the North San Joaquin Water Conservation District approving contracts for execution. The contracts were approved by the regional office of the Bureau of Reclamation. Although the contracts were sent to Washington for approval, none were executed by the United States. The contracts were not executed, due to a combination of circumstances and changing policies. Disapproval was not because San Joaquin County did not need the water.

F. Following Decision 1400 issued by the SWRCB in April 1972 modifying permits to the Bureau of Reclamation for American River water from the proposed Auburn Dam for delivery of water, in part, to San Joaquin County, San Joaquin County's agencies continued to work with the Bureau of Reclamation regarding various studies concerning the Auburn-Folsom South Unit.

G. In Board hearings on Applications 14858, 14859, 19303 and 1904, for Stanislaus River water, which led to Decision 1422 in 1973, the Bureau of Reclamation testified that the portion of the County north of the Calaveras River would be served by the Folsom South Canal. Furthermore, at the time of adopting the New Melones Basin Allocation in 1981, the Secretary of Interior noted that the provision of only a small amount of water to the County from New Melones was acceptable since water would be provided to Eastern San Joaquin County from the American River through the Folsom South Canal.

Contrary to these many reports, studies, policies and decisions of both the State and the Federal Bureau of Reclamation, the County has not received water from the American River through the contemplated extension of the Folsom South Canal.

For years, the County has sought to obtain additional surface water supplies to supplement available water supplies, including efforts to obtain water from a source other than the

contemplated American River. This includes expending substantial efforts and resources (in excess of 65 million dollars for infrastructure alone) to secure a reliable source of Stanislaus River water. Again, due to changes in State and Federal decisions and policies this supplemental water supply to the County is not secure. In this regard, we cite the following:

A. As a result of State Water Resources Control Board Decision 1422 issued in 1973, the Bureau of Reclamation received conditional permits for Stanislaus River water to be diverted at New Melones Dam and Reservoir. In order to receive State permission to appropriate the water from these permits, there was a need to demonstrate "firm commitments" within the permitted four county service area, which included the County. In part, to demonstrate such commitment, the Bureau of Reclamation entered into contracts with both Stockton East Water District and Central San Joaquin Water Conservation District in 1983 for a 155,000 af annual Stanislaus River water supply.

B. These County districts spent over 65 million dollars on delivery infrastructure. Despite the completion of these delivery facilities in 1993, the Bureau did not deliver water to the districts, but a significant amount of New Melones water was released in 1993 and 1994 for fish purposes to meet the needs of the recently adopted Federal CVPIA. Since 1993 the County districts have only received a small portion of their contracted Stanislaus River water. Instead, the Bureau of Reclamation makes discretionary releases from New Melones to meet Delta flow and salinity standards and for fish purposes that directly take water away from these County districts.

C. The Bureau of Reclamation's discretionary decision to meet Delta flow and salinity standards with this Stanislaus River water occurs despite the State Water Resources Control Board's Decision 1641 issued in 2000 indicating that these standards could be meet from other sources including: releases from other CVP reservoirs such as Friant; recirculation of water through the Delta Mendota Canal, the Newman Wasteway and the San Joaquin River; construction of a valley drain; and purchases of water from willing sellers to release to meet these standards.

D. The Bureau of Reclamation's discretionary decision to release water from New Melones Reservoir for fish purposes to satisfy provisions of the CVPIA also deprives these County districts of their contracts Stanislaus River water. Nothing within the CVPIA mandates that these releases must be made from New Melones. The releases of Stanislaus River water is completely within the Bureau of Reclamation's discretion.

These federal and state decisions are continuing to deprive County interests of water supplies. As a result, even though it is more costly, the County recognizes that surface water supplies obtained in the future for the most part will need to be on a conjunctive use basis. Any conjunctive use plan as currently envisioned utilizing the Application 29657 filing will use surface water in times of high flows and use stored groundwater in dry years.

Such progress is demonstrated recently by the following:

- The San Joaquin County Water Management Plan was published in October 2001 (CDM, 2001) which was subsequently adopted by the Board of Supervisors in May 2002. The WMP documented structural and non-structural options; reviewed and screened water management options, including the FRWP concept and use of American River water right; and presented a master alternative.
- In April 2002, the Northeastern San Joaquin County Groundwater Banking Authority (GBA) published the Systems Plan Components Inventory (GBA, April 2002) which included the FRWP concept, including use of Sacramento River and American River water.
- The Eastern San Joaquin Groundwater Basin Groundwater Management Plan was adopted by the GBA and County Board of Supervisors in 2004. Both of these included FRWP concepts to make use of the County water right to the South Fork of the American River.

These efforts have evolved into the Integrated Conjunctive Use (ICU) Program. The ICU Program is conceptually defined as the integrated sum of key water supply projects including surface storage, major diversions and conveyance, direct and in-lieu groundwater recharge, water conservation, water recycling, and other elements necessary to meet adopted Basin Management Objectives and Basin Operations Criteria. The ICU is part of the program to develop the broader IRWMP which will also factor in ecosystem restoration, flood control, and other efforts. The purpose of the IRWM Plan is to define and integrate key water management strategies consistent with adopted basin management objectives and protocols and to delineate a specific course of action for the implementation of the ICU Program.

Progress on County Work Plan for Application 29657

In September of 2002, in response to SWRCB issues regarding a perceived lack of progress on the Application 29657, the County provided the SWRCB with the "Work Plan for Application 29657" (Work Plan). County and other local stakeholders have made progress in execution of the work plan and related water management plans and agreements.

Amendment to Permit Application

In May of 2003, the County submitted the water right application amendment called for in Work Plan Task 2. The amendment requested the point of diversion be moved to the FRWP location. A groundwater storage supplement was also filed with the SWRCB. This task has been completed.

Water Availability Study

In August 2003, the County submitted the Water Availability Study (SKS, 2003) to the SWRCB pursuant to Work Plan Task 3. The SWRCB did not provide comments or feedback on the adequacy of the study and the results were assumed by the County to be valid and useful. This

TM, the FRWP EIR/EIS and associated technical analysis[6], and the prior Water Availability study meet the intent of Work Plan Task 3. All of the reviews demonstrate water available for diversion from sources on the South Fork of the American River.

Engineering Feasibility and Operations Analysis

Work Plan Task 4 called for engineering feasibility and operations analysis; evaluation of FRWP yield, project cost and any other technical, environmental, political or social concerns. The engineering feasibility of the proposed FRWP diversion has been determined by FRWA; 60% of the pipeline design has been completed for both the FRWP and EBMUD portions of the project; and the FRWP is to begin construction in 2007. Final operating agreements are being established by FRWA. County use of FRWA will be subject to further negotiations and cost sharing agreements. Certainty on the water right would lend to making operational decisions and finalizing the negotiations.

This memorandum further evaluated the FRWP yield; project cost estimates as provided by FRWP, and other technical, environmental, political or social concerns. Funding sources or strategies are being evaluated separately by the County as part of the IRWMP and ongoing implementation of the adopted GWMP, and such funding strategies will be part of the negotiations for the County use of the FRWP with the EBMUD. This memorandum also describes how the County would operate to make use of the FRWP diversion; builds on the prior water availability analysis (SKS, 2003); and evaluates the relatively minor changes to the current or future reservoir operations at Folsom.

Negotiations for Excess Capacity in FRWP

Work Plan Task 5 called for negotiations with EBMUD for use of the FRWP capacity. EBMUD has been an active participant in the GBA meetings and is a stakeholder in the IRWMP. In October 2005, more detailed discussions between EBMUD on the County use of FRWP capacity were initiated and are ongoing. The intent is to come to terms and finalize an agreement. These discussions are being closely related to the other IRWMP/ICU elements, including groundwater banking and storage to help both the County and EBMUD meet their water supply plan goals.

Environmental Review

Work Plan Task 6 called for environmental review of the effect of the County water right. There are three project related public agency actions that could have a direct effect on the environment and be defined as "projects" pursuant to CEQA, including:

- The SWRCB acting as lead agency for the water right determination;

[6] FRWP EIR/EIS, Volume 3, Modeling Technical Appendix, FRWA, July 2003.

- EBMUD and County approval of an agreement for use of FRWP capacity; and
- FRWP inclusion in the IRWMP/ICU program.

SWRCB Environmental Review

The SWRCB is the lead agency for making decisions on the County Application 29657. Their determination on issuance of the permit is a project pursuant to CEQA, and the SWRCB clearly has the responsibility to work with the County to resolve issues, scope the appropriate level of CEQA review and decide what information is lacking.

The SWRCB has historically relied on the permit applicant to submit a certified environmental review document to support its water right decisions. The decision on how to proceed to comply with CEQA should be based on active dialogs between the SWRCB and County. The County should work with the SWRCB to scope the analysis since the SWRCB decision is premier to other decisions of the County or EBMUD on the agreement, or County's programmatic decisions on the IRWMP/ICU. The County and SWRCB could pursue a number of approaches to CEQA compliance.

The County could encourage the state to accept the FRWP EIR/EIS analysis for purposes of the County's use of the FRWP, and work with the SWRCB to do an initial study and negative declaration, noticing both the CEQA action and water right hearings. The FRWP and Folsom Reservoir were analyzed using CALSIM (FRWA, 2003; Vol. 3); the FRWP environmental review and BA have been completed, and the needed biological opinions have been issued. There is an abundant amount of information and substantial evidence available in light of the whole record for the SWRCB to evaluate and decide what additional information is required, if any. The availability of the existing environmental documents may allow the County and the SWRCB to move forward with the water right permit, and the FRWP technical and environmental analyses may provide engineering and environmental review that could be used by the SWRCB to further scope and define any additional analysis requirements. The SWRCB might be able to make environmental determinations based on the existing FRWP, OCAP, and Sacramento Water Forum analyses, and this would allow the SWRCB to focus primarily on the legal premise and priorities for the various water right claims to the American River, and may help limit the need for additional environmental review.

Alternatively, the SWRCB could work with the County to streamline the environmental review by "tiering" from the Water Forum, OCAP, and FRWP environmental documents. This would allow the County to move forward to complete any additional environmental reviews needed by the SWRCB to make a decision. The County/SWRCB could incorporate by reference the FRWP EIR/EIS, complete any remaining CEQA analysis, issues a Notice of Preparation (ideally with a mitigated negative declaration), and open hearings.

Finally, the County could work with the SWRCB and agree to wait for the programmatic CEQA analysis for the IRWMP/ICU, and then complete the necessary project level CEQA evaluation.

EBMUD/County Approval of FRWP Use Agreement

Use of the FRWP will require agreements between the EBMUD and County. The agreement is a project under CEQA since approval is a discretionary act by both the County and EBMUD, and would have the potential to effect the environment. Any agreement between County and EBMUD for wheeling water through the FRWP should be consistent with the EBMUD for "Principals for Use by Others of Unassigned EBMUD Capacity in the FRWP" or other requirements of the FRWA.

Operations in below normal and dry year were evaluated in both the FRWP environmental documents and the EBMUD Amendatory CVP Supply environmental documents, and do not require further analysis. EBMUD has what it needs to use the project as designed, and the FRWP and CVP Amendatory Contract environmental reviews, the BAs and BOs did not result in findings of significant effects or jeopardy on aquatic species, upland habitats, or other resources.

County's use of excess EBMUD capacity is subject to environmental review, but it is believed that the same discussion, assumptions, and conclusions as made above for the SWRCB determinations, could be applied to meeting these CEQA requirements for approval of an EBMUD/County agreement. Based on the fisheries flow requirements and flow management standards, prior environmental analysis, and this TM, it is not believed that the use of FRWP by the County would not have an effect in normal, above normal and wet years.

EBMUD needs to be party to the development of a final CEQA strategy. Alternatives approaches to complying with CEQA include; 1) development of a subsequent or supplemental analysis that tiers from the FRWP EIR; and 2) a separate and independent CEQA review for the County use of the FRWP, whether a mitigated negative declaration or stand alone EIR.

Under this later approach, the County could fast track a separate project level review for the County/EBMUD agreement, and seek to provide an environmental analyses and CEQA document that the SWRCB could use for their decisions.

FRWP as an Element in the ICU and IRWMP

Finally, the County use of the FRWP could be included in the programmatic Environmental Impact Report for the IRWMP/ICU. The IRMWP/ICU could be a combined program and project level review, evaluating projects like the use of the FRWP at a greater level of detail, and conducting a programmatic analysis for those elements that are not fully defined and not yet ripe for decision. County issued a Request for Proposals for the IRWMP/ICU Environmental Review on November 28, 2005. The IRWMP will include and evaluation of cumulative impacts for County use of FRWP and the other alternatives and elements of the IRWMP. The County could seek an agreement with the SWRCB to delay decision on the County's applications until

such time as the IRWMP/ICU EIR is complete. This would take the longest of any environmental compliance strategy.

The Work Plan for Task 6 also called for an evaluation of place of use issues and conceptual conjunctive use program for the eastern county. Both the Water Management Plan (CDM, 2001) and Eastern San Joaquin Groundwater Management Plan (NSJC GBA, 2004) evaluated current and future demands and were based on the General Plans for the cities and County. The County's IRWMP will confirm current and future demand assumptions and ensure consistency between the water management plans and prevailing land use plans, and the IRWMP EIR will need to review all growth inducing and cumulative impacts.

Permitting

Other permitting for the County use of the FRWP would be determined after final project configurations as part of the IRWMP and final ICU Program.

Design and operations plans for any additional facilities will drive the permitting requirements. It is likely that facilities will include canals or pipelines to convey water from the terminus of the EBMUD pipeline at the Mokelumne Aqueduct to the water service areas of the NJWCD, SEWD, and/or CSJWCD for direct use in lieu of groundwater pumping and/or for direct recharge and storage in the groundwater basin. The permit requirements for any off-stream storage will also be determined in the IRWMP.

Federal, state, and local regulations and agencies govern wetland and other resources that may be affected by additional facilities to be developed by the County to make use of the FRWP. Compliance with the following federal laws, regulations, and policies should be integrated into project planning for the pipeline alignments, diversion locations, and associated structures:

- Clean Water Act, Section 404;
- Clean Water Act, Section 402;
- Clean Water Act, Section 401;
- Rivers and Harbors Act, Section 10;
- U.S. Coast Guard Private Aids to Navigation Program;
- Fish and Wildlife Coordination Act; and
- Federal Executive Order 11990: Protection of Wetlands.

Besides wetlands, other state and federally protected resources may be affected by implementation of the project. Planning for the pipeline/canal alignments, diversion or turnout locations, and associated structures should incorporate consideration of the following federal laws, regulations, and policies:

- Endangered Species Act;
- National Historic Preservation Act, Section 106;
- Clean Air Act, Authority to Construct;

- U.S. Council on Environmental Quality Memoranda on Farmland Preservation and Farmland Protection Act;
- Federal Executive Order 12898: Environmental Justice; and
- Federal Executive Order 11988: Floodplain Management.

Expanded use of the FRWP to make full use of the available capacity was not reviewed in the BA or covered in the BO's issues by NOAA Fisheries or FWS and will likely require separate consultation under the Federal Endangered Species Act. The FWS and NOAA-NMFS are responsible for ensuring that there will not be any jeopardy to federally listed species. The SCWA and EBMUD, as the primary partners in the FRWP, are consulting directly on terrestrial species with the USFWS in their respective service areas. As discussed further below, FRWP relied on the BO for the CVP-SWP OCAP. The OCAP BO has been challenged in court. This brings into question the assumptions and analysis methods applied to the OCAP Biological Assessment and subsequent BO, and could constrain or delay the full operation of the FRWP and other projects that have relied on the OCAP analysis and BO.

The following state regulations that govern work within wetland and riverine systems may also apply to the County facilities proposed to make use of the FRWP.

- DFG Streambed Alteration Agreement;
- State Lands Commission Land Use Lease and Dredging Permit; and
- State Reclamation Board Encroachment Permit.

Local county building and grading permits would also be required, along with encroachment permits for any proposed facilities that may enter on or near public rights-of-way or easements.

Certain utilities within the County are public utilities that are regulated by the California Public Utilities Commission (CPUC). The CPUC issues general orders that guide the utilities in development, construction, maintenance, and operation of utility facilities. Any crossing of a public utility must maintain the separation standards prescribed in the applicable general order. The main concern of any public utility with regard to crossings is maintaining operations, safety standards, and access for maintenance purposes.

Other Approvals

The following additional agreements are likely to be needed:

- Warren Act contract with Reclamation to use the FSC. This will require compliance with NEPA. The County should initiate a dialog with Reclamation's Central California Area Office as soon as a final project concept and description has been finalized.
- Internal cost sharing agreements for any use of the FRWP and development of related capital facilities.
- An agreement with the Sacramento Water Forum may also be needed to develop a cooperative approach to resolving any American River water rights issues.

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LIST OF ACRONYMS

°F	degrees Fahrenheit
af	acre-feet
AFRP	Anadromous Fish Restoration Program
afy	acre-feet per year
AROG	American River Operations Group
ARWRI	American River Water Resources Investigation
BOs	Biological Opinions
CEQA	California Environmental Quality Act
cfs	cubic feet per second
COA	Coordinated Operating Agreement
CSJWCD	Central San Joaquin Water Conservation District
County	San Joaquin County
CPUC	California Public Utilities Commission
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
EBMUD	East Bay Municipal Utility District
EID	El Dorado Irrigation District
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FMS	Water Forum Flow Management Standards
Folsom	City of Folsom
Forum	Sacramento Water Forum
FRWA	Freeport Regional Water Authority
FSCC	Folsom South Canal Connector
FWS	U.S. Fish and Wildlife Service
GBA	Groundwater Banking Authority
GWMP	Eastern San Joaquin County Groundwater Management Plan
HCPs	Habitat Conservation Plans
IRWMP/ICU	Integrated Regional Water Management Plan and Integrated Conjunctive Use Program
M&I	municipal and industrial
MOU	Memorandum of Understanding
NCWA	Northern California Water Association

NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NSJC GBA	North San Joaquin County Groundwater Banking Authority
NSJWCD	North San Joaquin Water Conservation District
OCAP	Operating Criteria and Plan
PCWA	Placer County Water Agency
PR	Planning Report
Reclamation	U.S. Bureau of Reclamation
ROD	Record of Decision
Roseville	City of Roseville
SA	Settlement Agreement
SCWA	Sacramento County Water Agency
SCWWTP	Sacramento County Wastewater Treatment Plan
SEWD	Stockton East Water District
SRCSD	Sacramento Regional County Sanitation District
SRWRP	Sacramento River Water Reliability Program
SWP	State Water Project
SWRCB	State Water Resources Control Board
taf	thousand acre-feet
Term 91	Standard Water Right Term 91
TM	Technical Memorandum
WFA	Water Forum Agreements

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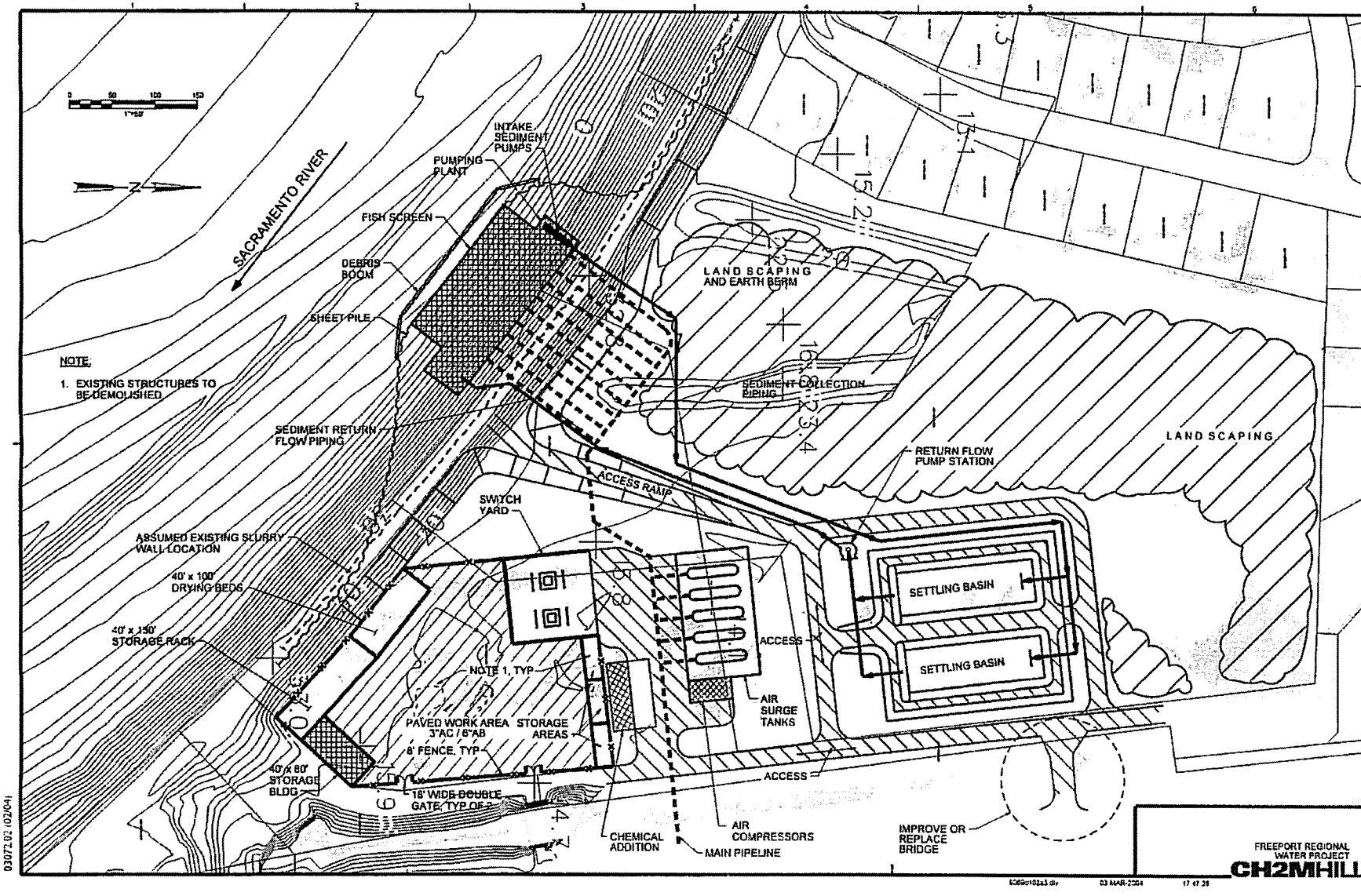
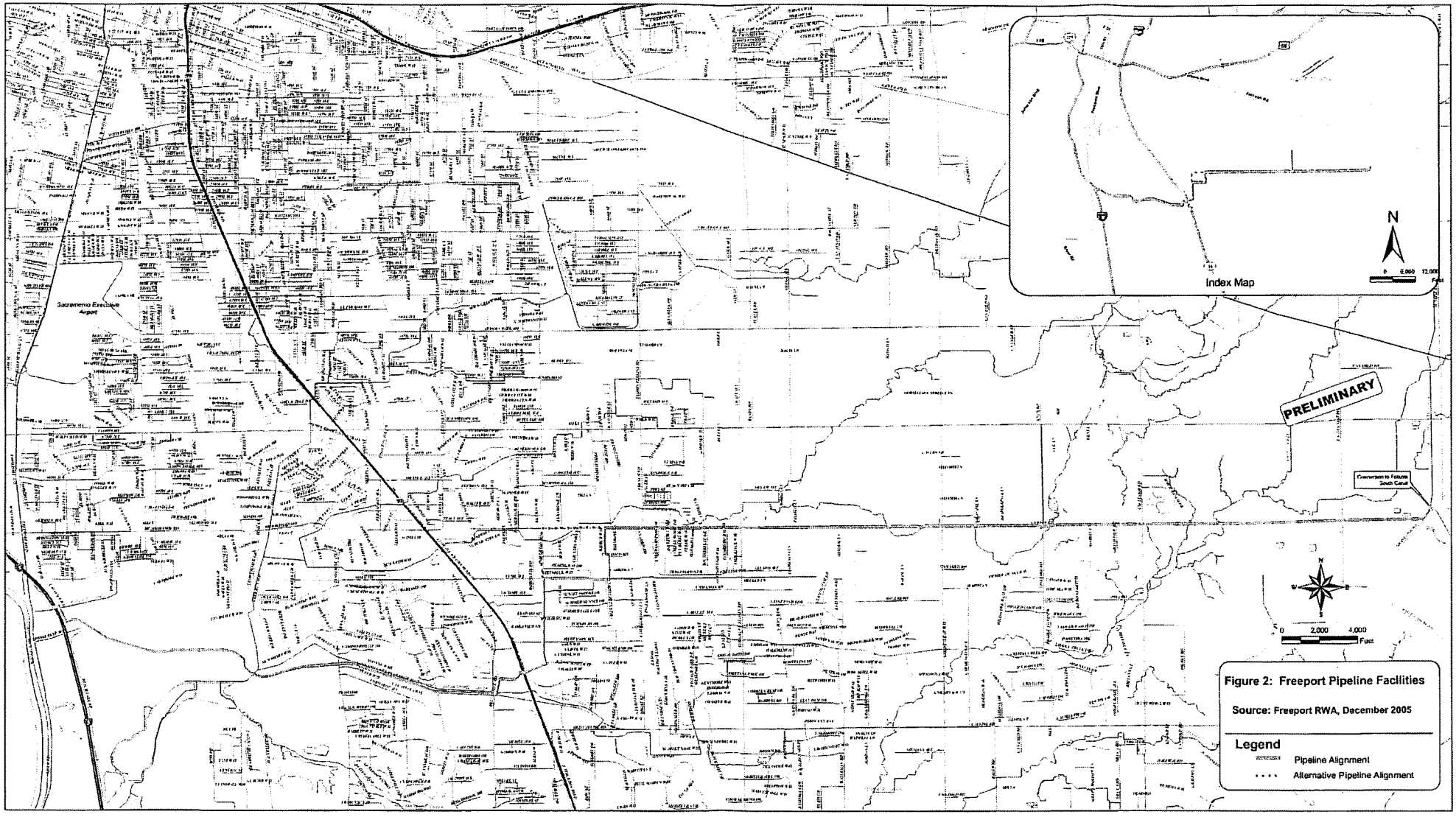


Jones & Stokes

Figure 1
Intake Facility Layout


Sacramento Executive Airport
Index Map
N
0 6,000 12,000 Feet
PRELIMINARY
Connection to Folsom South Canal
N
0 2,000 4,000 Feet
Figure 2: Freeport Pipeline Facilities
Source: Freeport RWA, December 2005
Legend
Pipeline Alignment
Alternative Pipeline Alignment

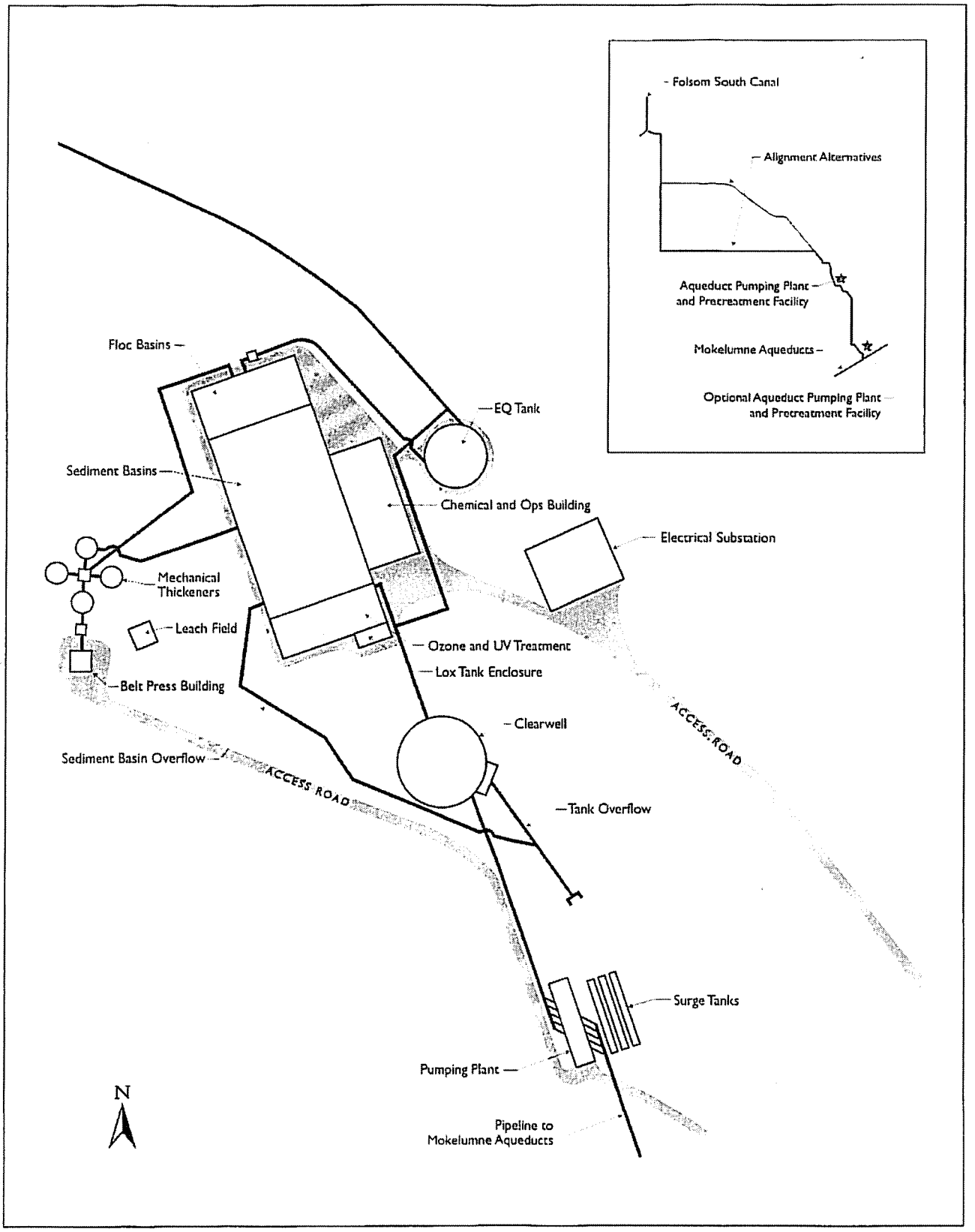


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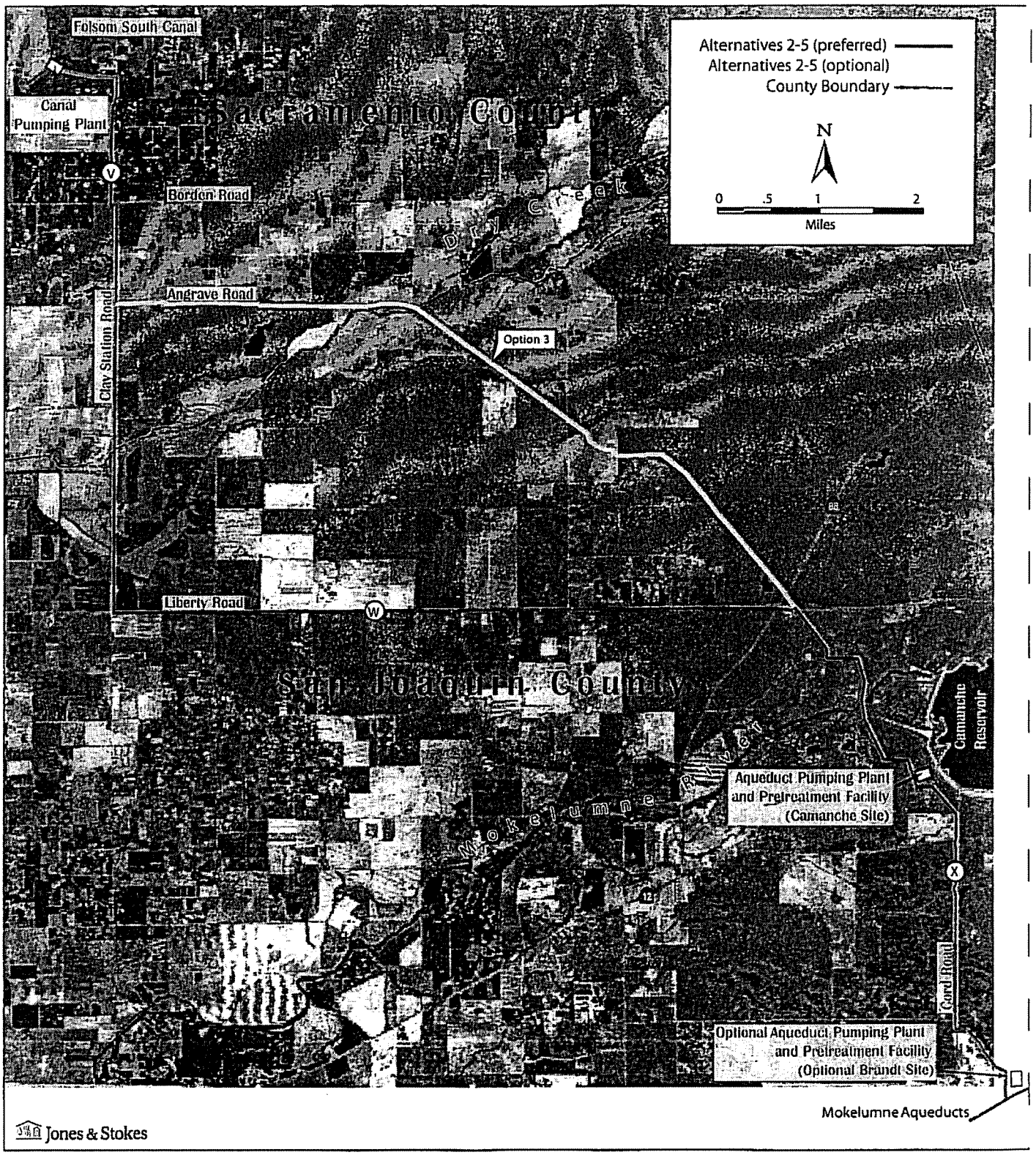
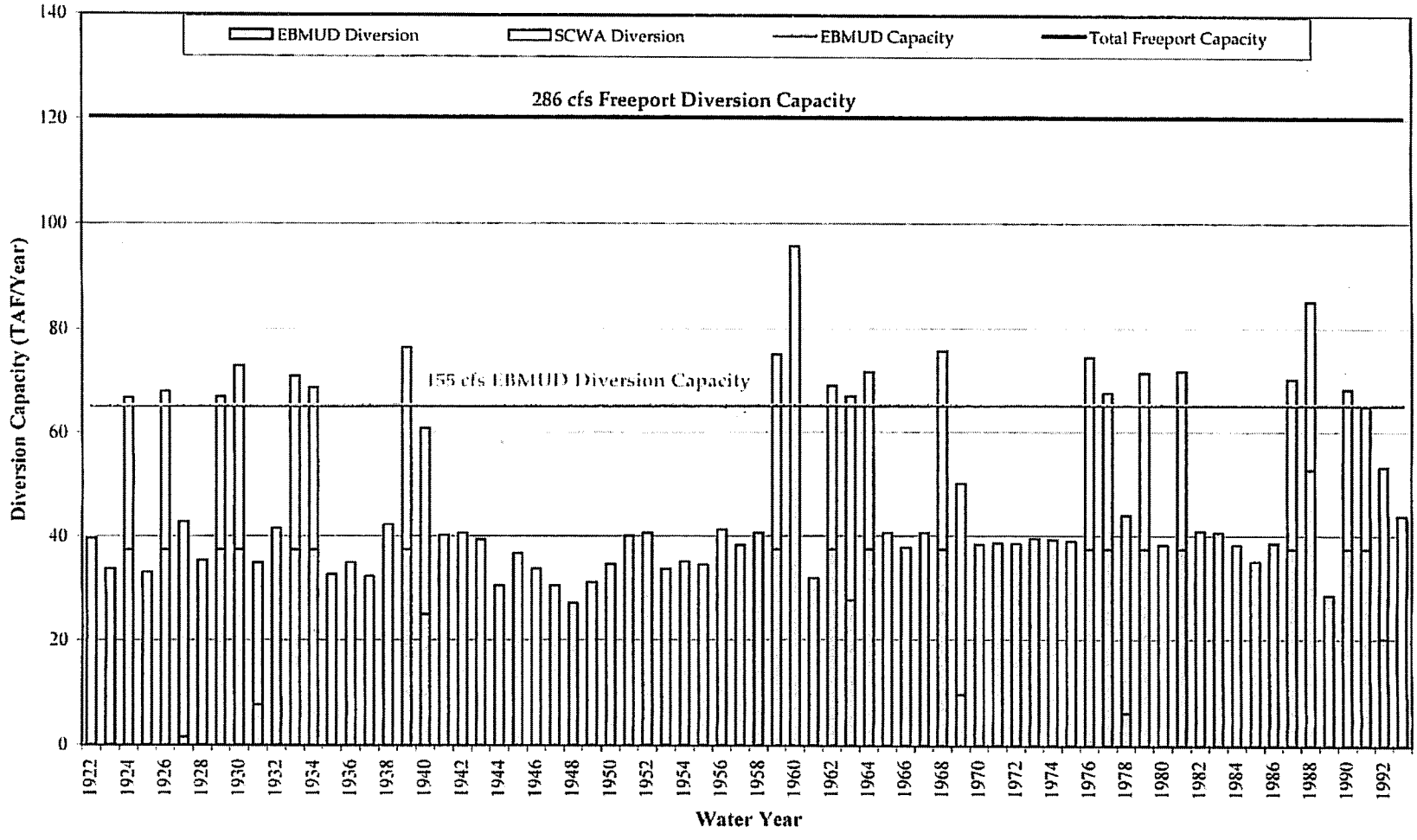
Figure 3
Aqueduct Pumping Plant and Pretreatment Facility



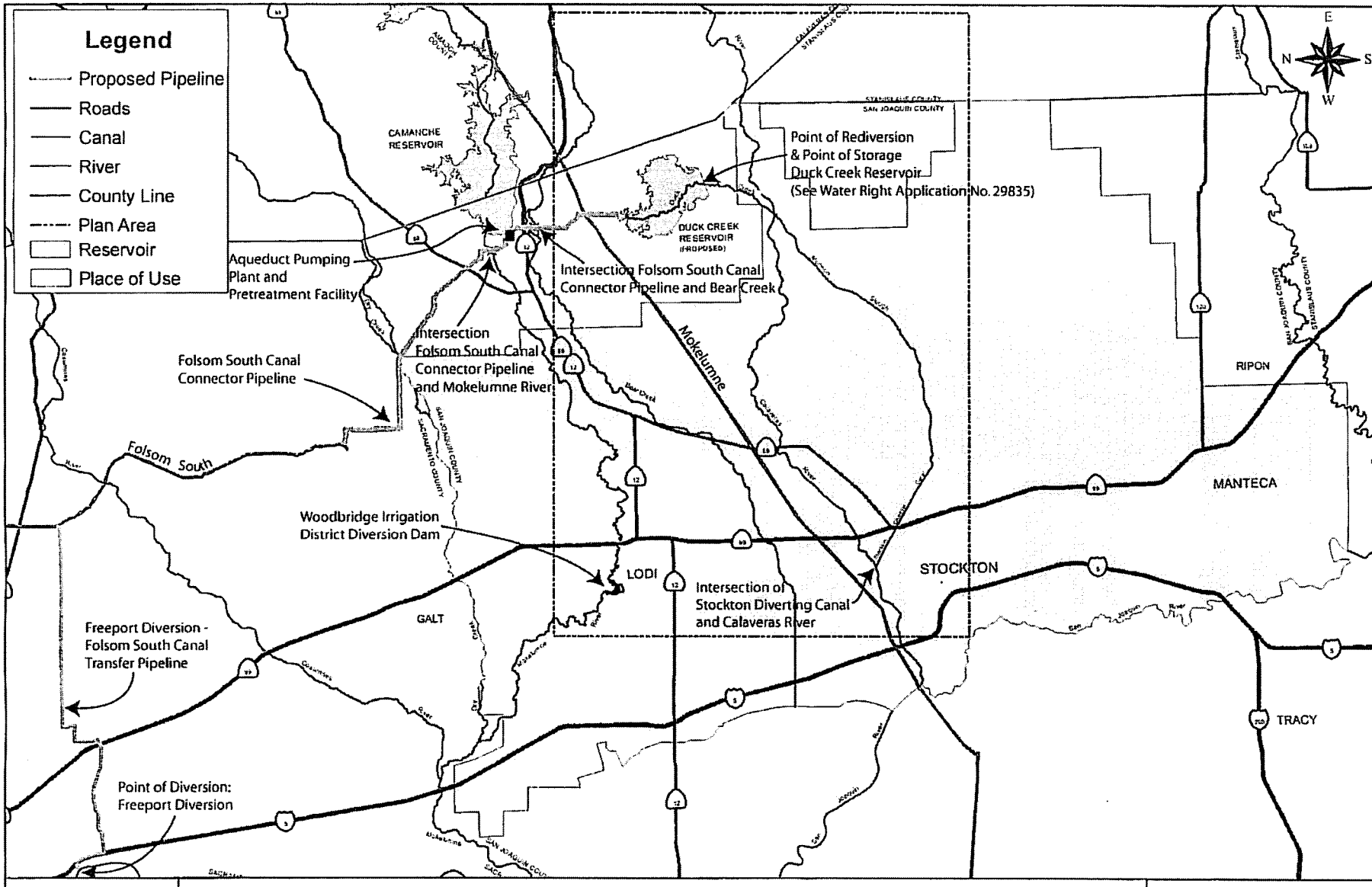
Pipeline Alignments from the Folsom South Canal to the Mokelumne Aqueducts

Figure 4

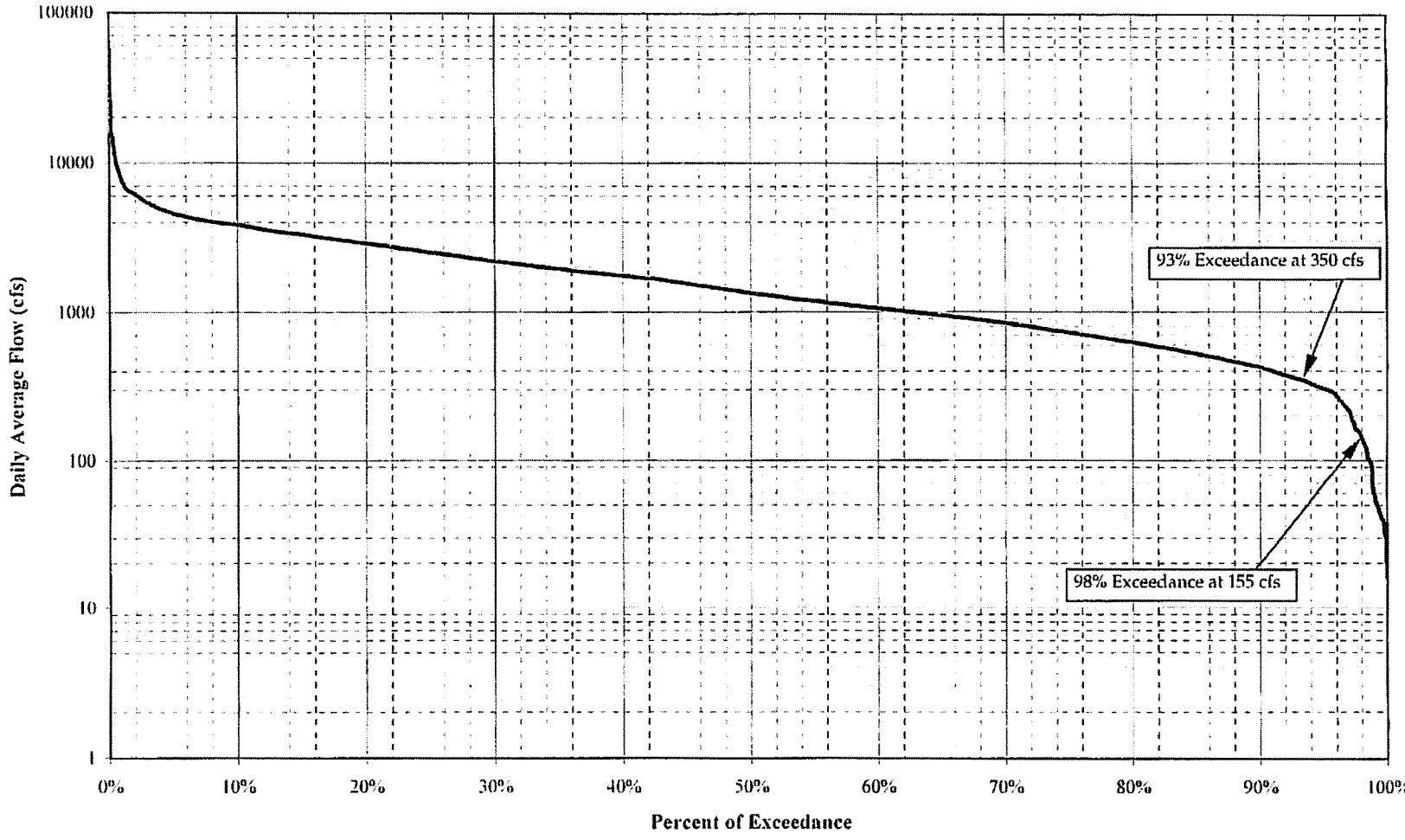


* Based on analysis of CALSIM II model runs using hydrologic base period from 1922 to 1993 and the assumptions for the 2020 LOD, Alternatives 2-5 of FRWP DEIR/EIS

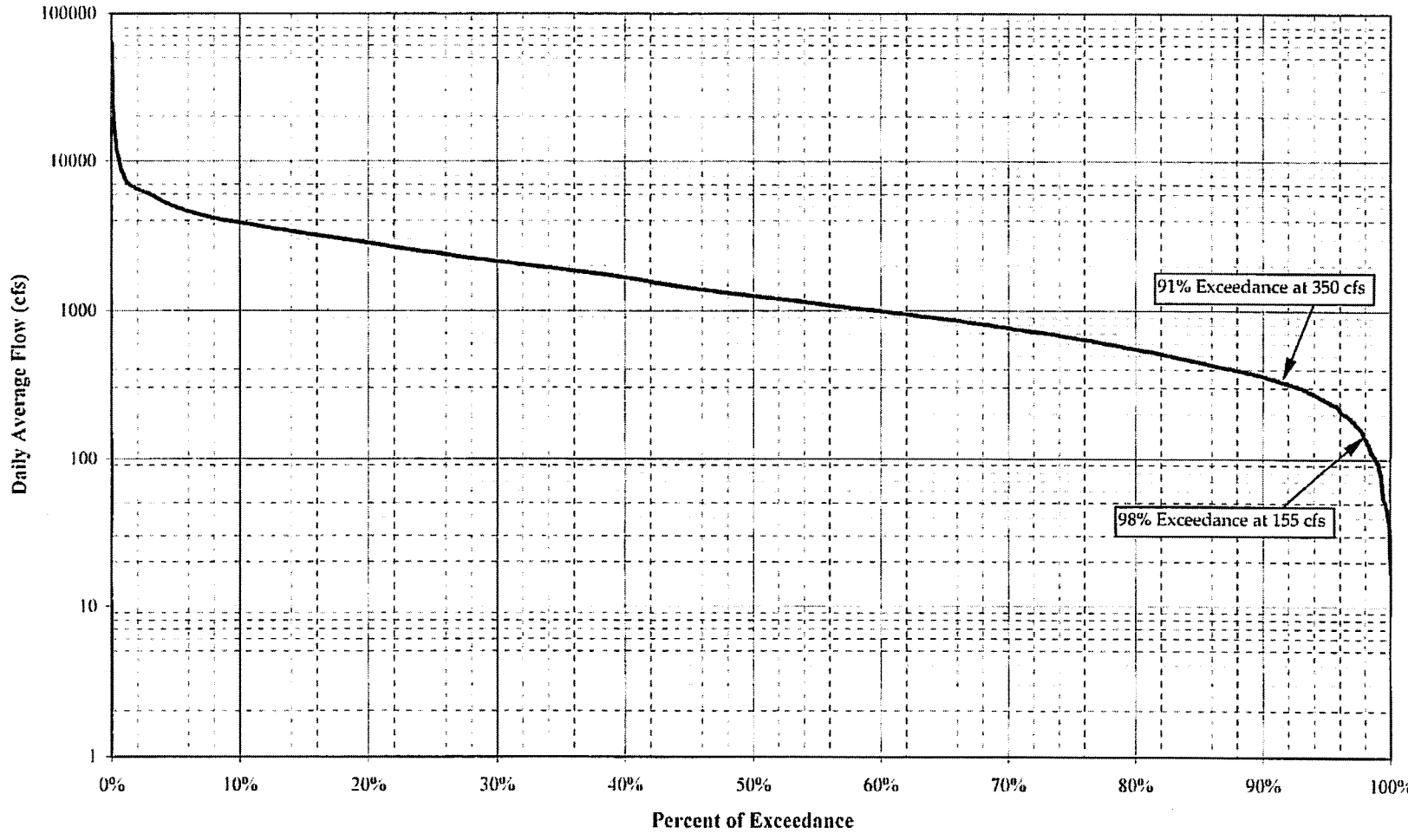
ORIME	Groundwater Banking Authority Integrated Regional Water Management Plan	June 2006
	SCWA and EBMUD Proposed Diversions at Freeport for December through June*	FIGURE 5



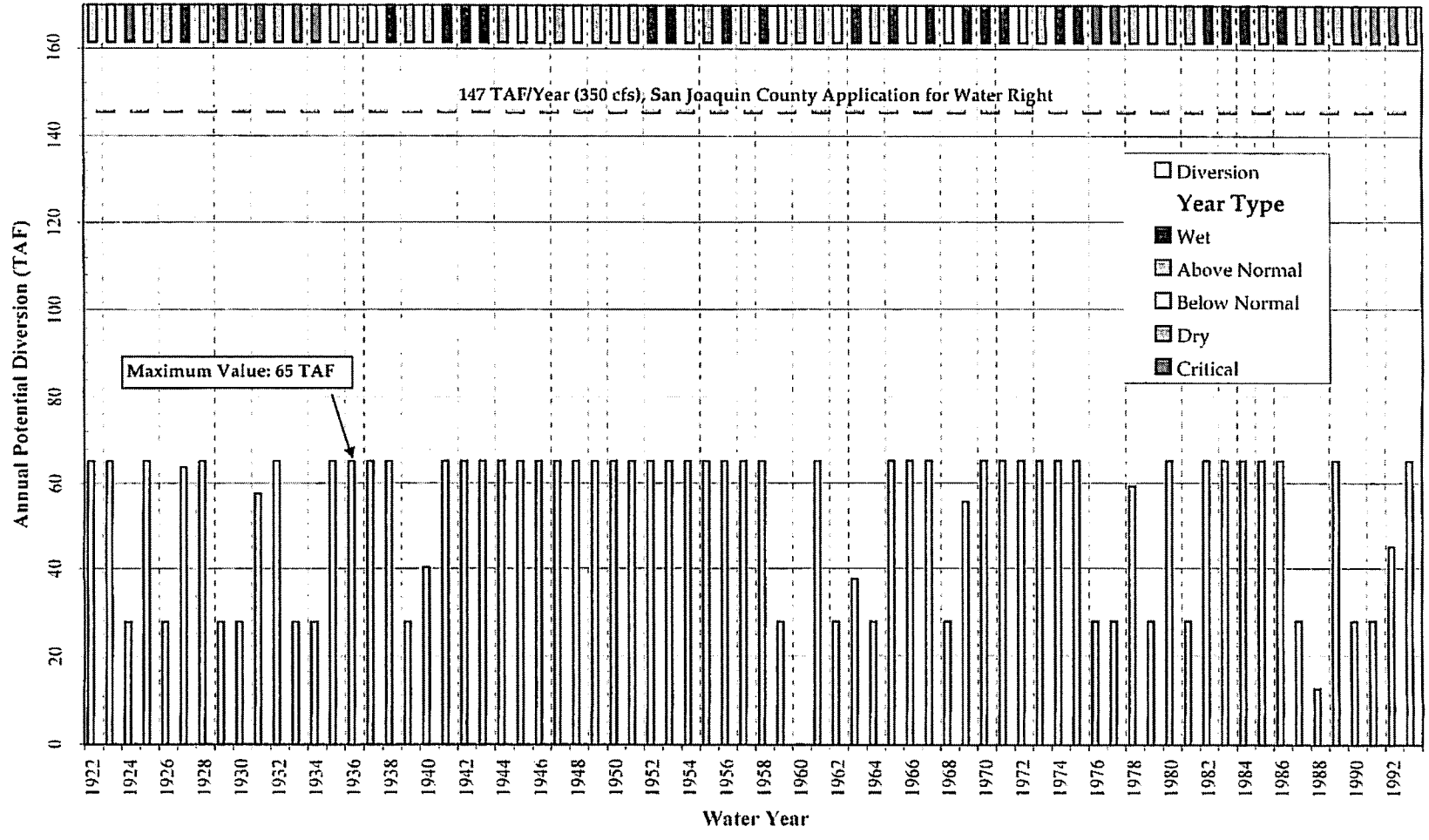
WRIME	FRWP, Potential San Joaquin County Facilities and Water Rights Place of Use	Figure 6 June 2006



ORIME	Groundwater Banking Authority Integrated Regional Water Management Plan **Percent of Exceedance for Daily Average Flows of South Fork American River near Placerville (USGS 11444500, December through June of 1964-2004)**	June 2006 FIGURE 7

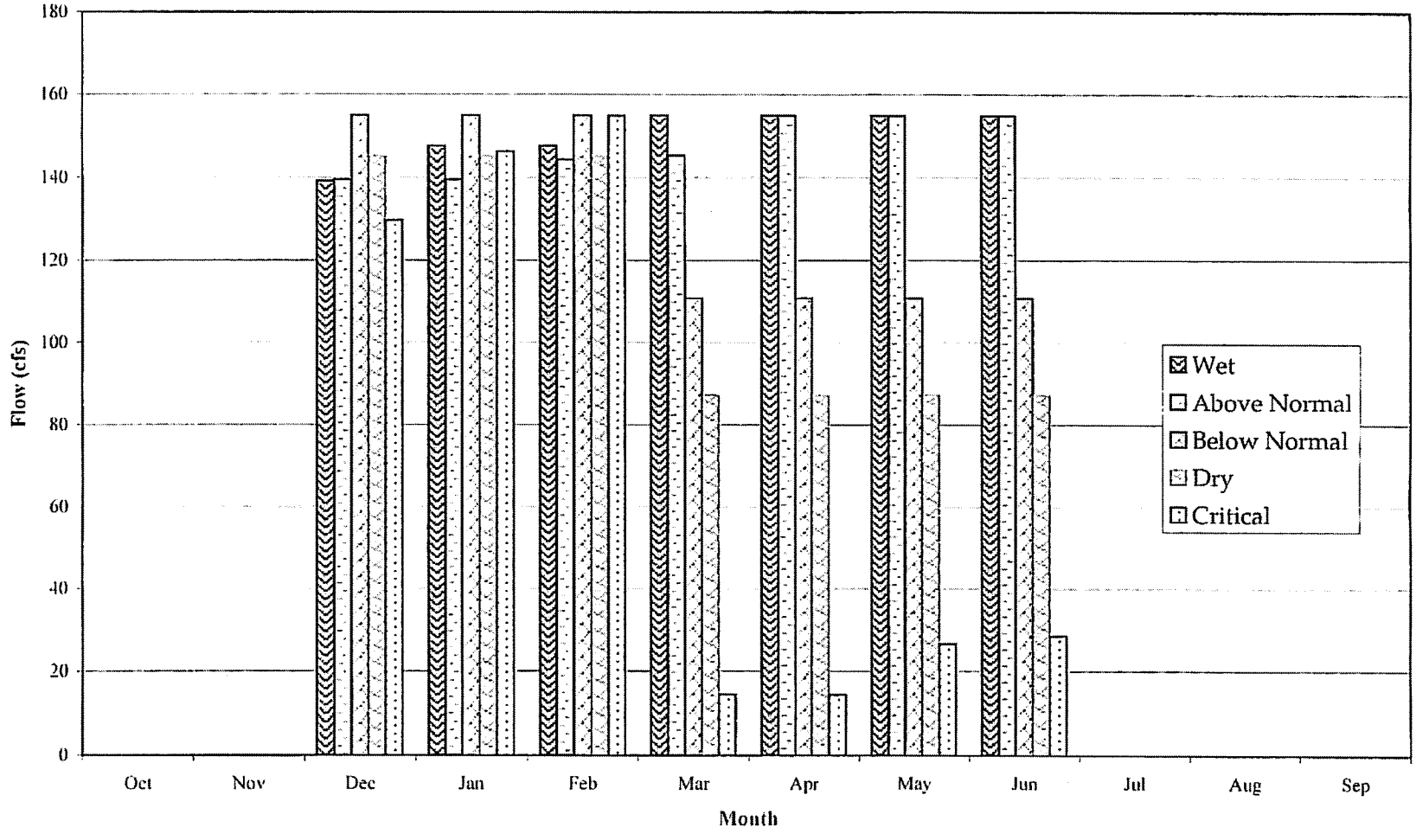


ORIME	Groundwater Banking Authority Integrated Regional Water Management Plan **Percent of Exceedance for Daily Average Flows of South Fork American River near Lotus (USGS 11445500, December through June of 1951-1995)**	June 2006 FIGURE 8



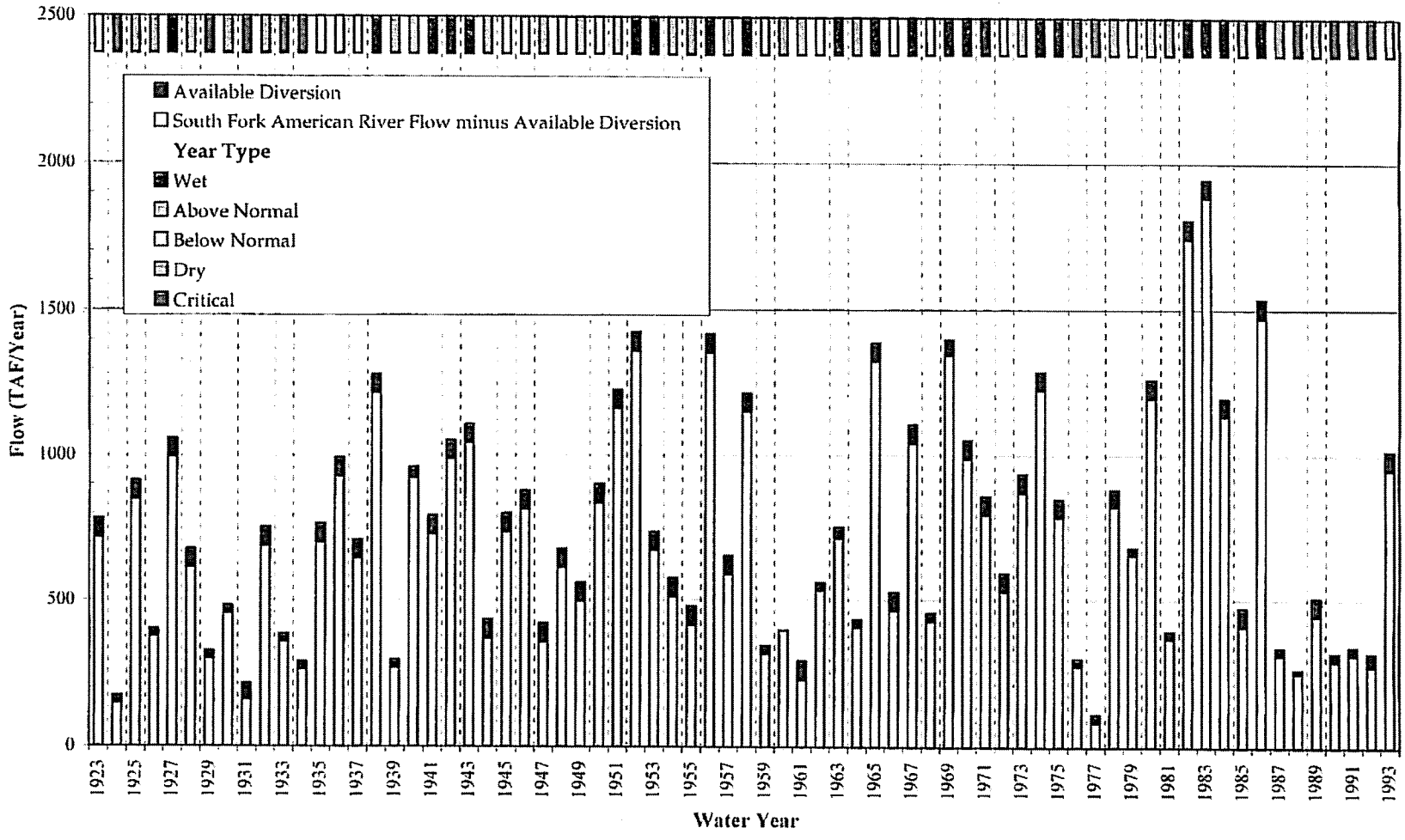
* Based on analysis of CALSIM II model runs using hydrologic base period from 1922 to 1993 and the assumptions for the 2020 LOD, Alternatives 2-5 of FRWP DEIR/EIS

PRIME	Groundwater Banking Authority Integrated Regional Water Management Plan **Annual Potential San Joaquin Diversion for December through June* Based on 155 cfs EBMUD Capacity in the FRWP**	June 2006 FIGURE 9



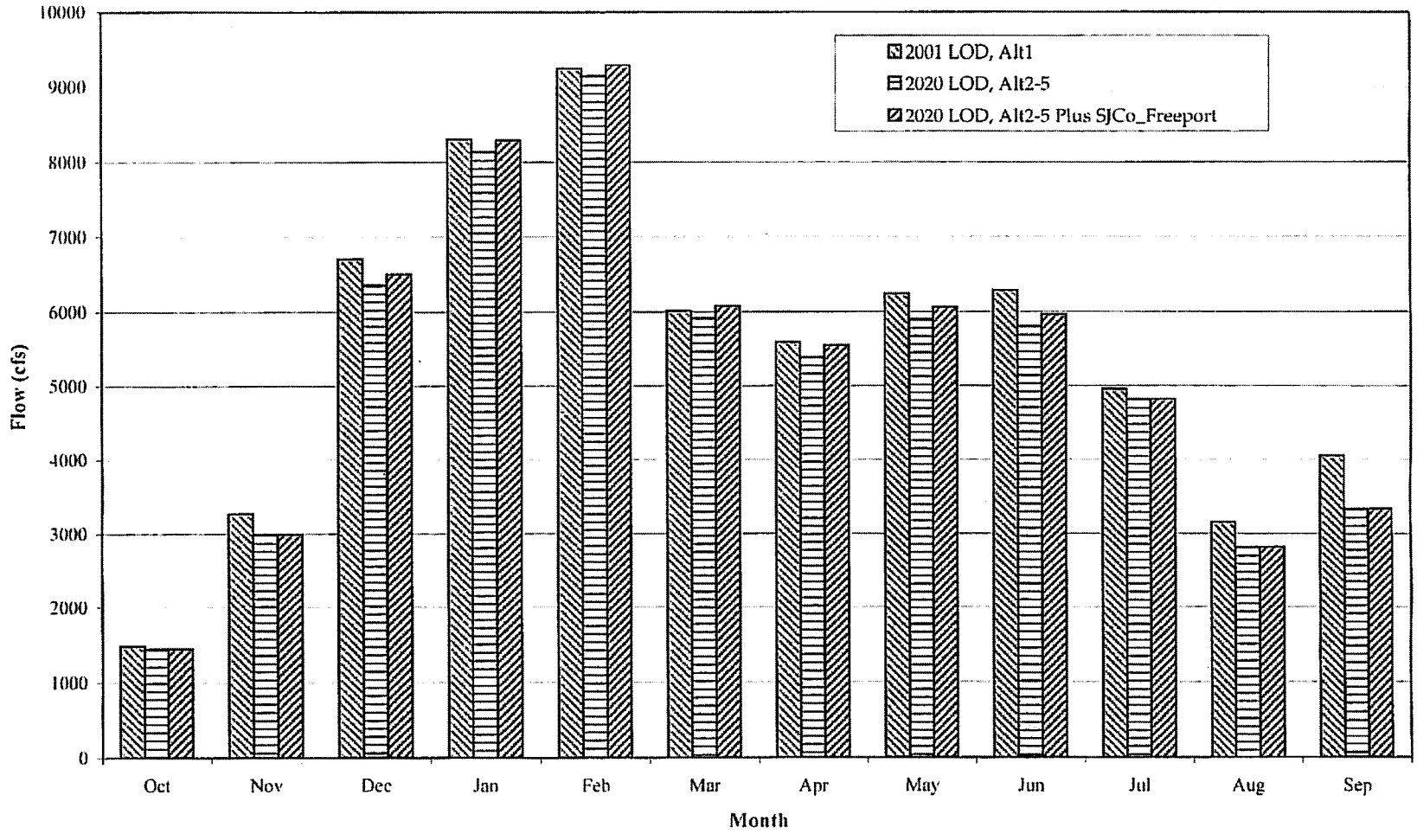
* Averaged for corresponding type of year over 1922-1993, 2020 LOD, Alternatives 2-5 of FRWP DEIR/EIS
** Based on Sacramento Valley Water Year Index 40-30-30

ORIME	Groundwater Banking Authority Integrated Regional Water Management Plan **Average* Monthly Freeport Diversion Capacity Pattern by Hydrologic Year-Type** Limited by 155 cfs Pipeline**	June 2006 FIGURE 10

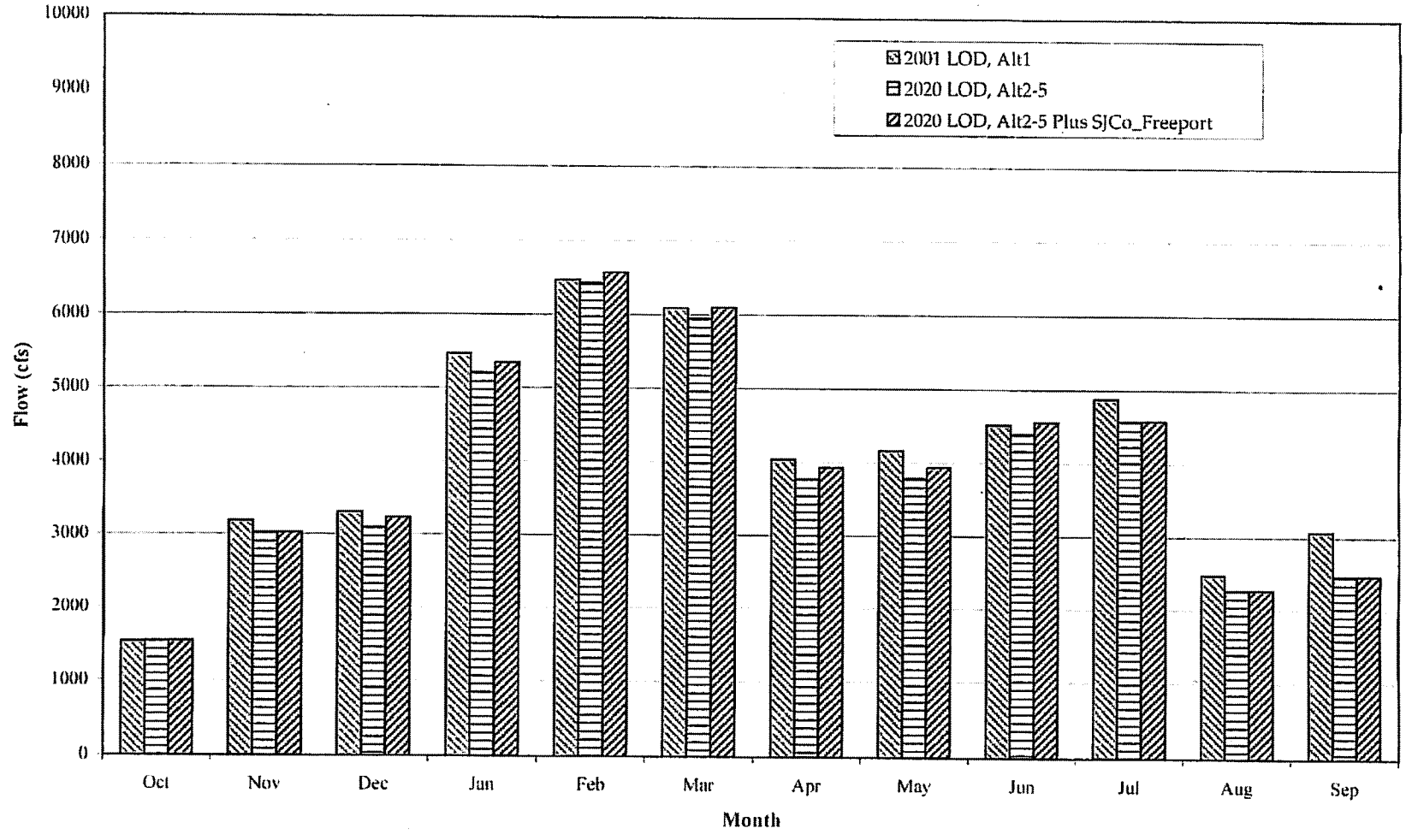


* Based on analysis of CALSIM II model runs using hydrologic base period from 1922 to 1993 and the assumptions for the 2020 LOD, Alternatives 2-5 of FRWP DEIR/EIS

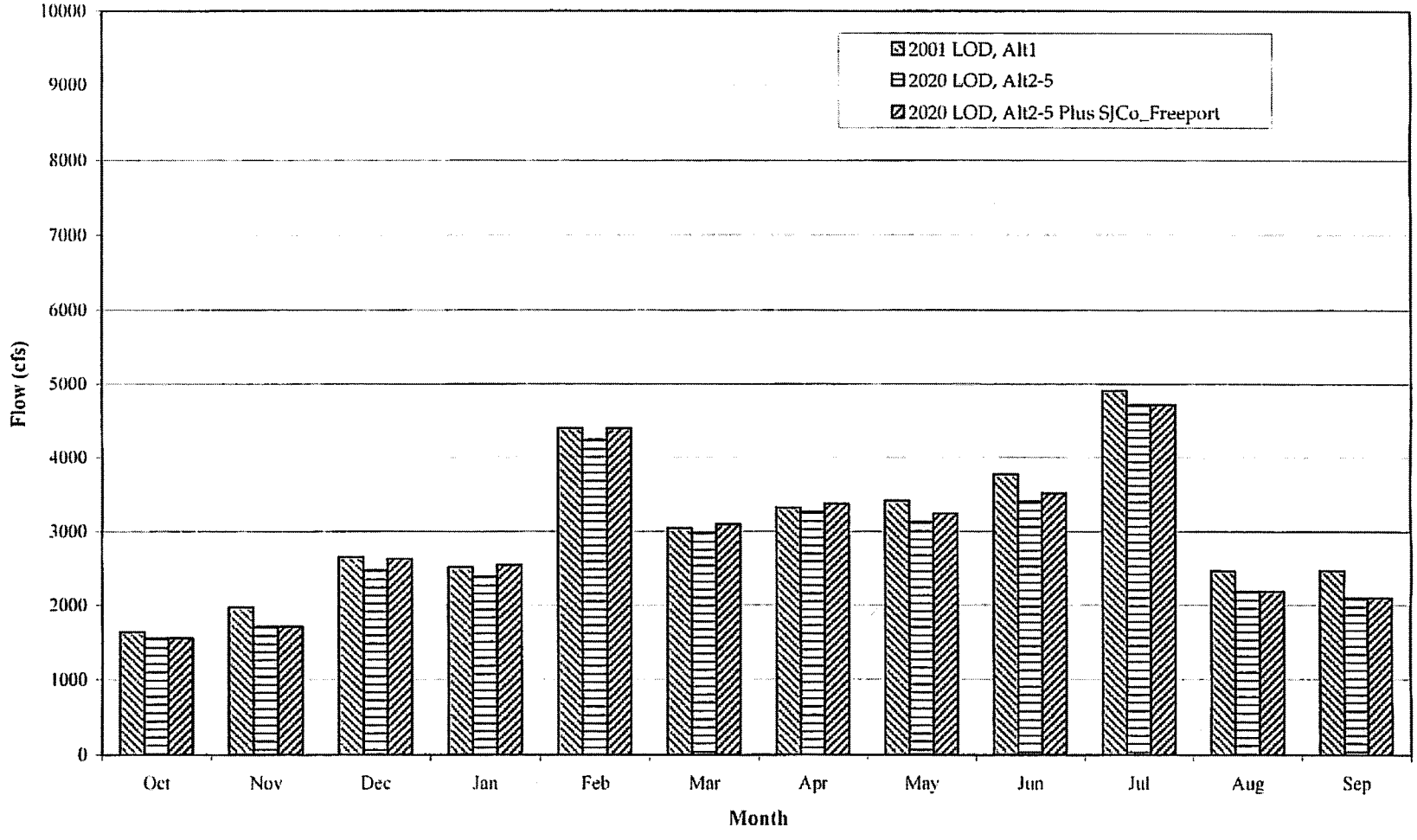
ORIME	Groundwater Banking Authority Integrated Regional Water Management Plan **Freeport Available Diversion Relative to Historical Flow at South Fork American River for December through June***	June 2006 FIGURE 11



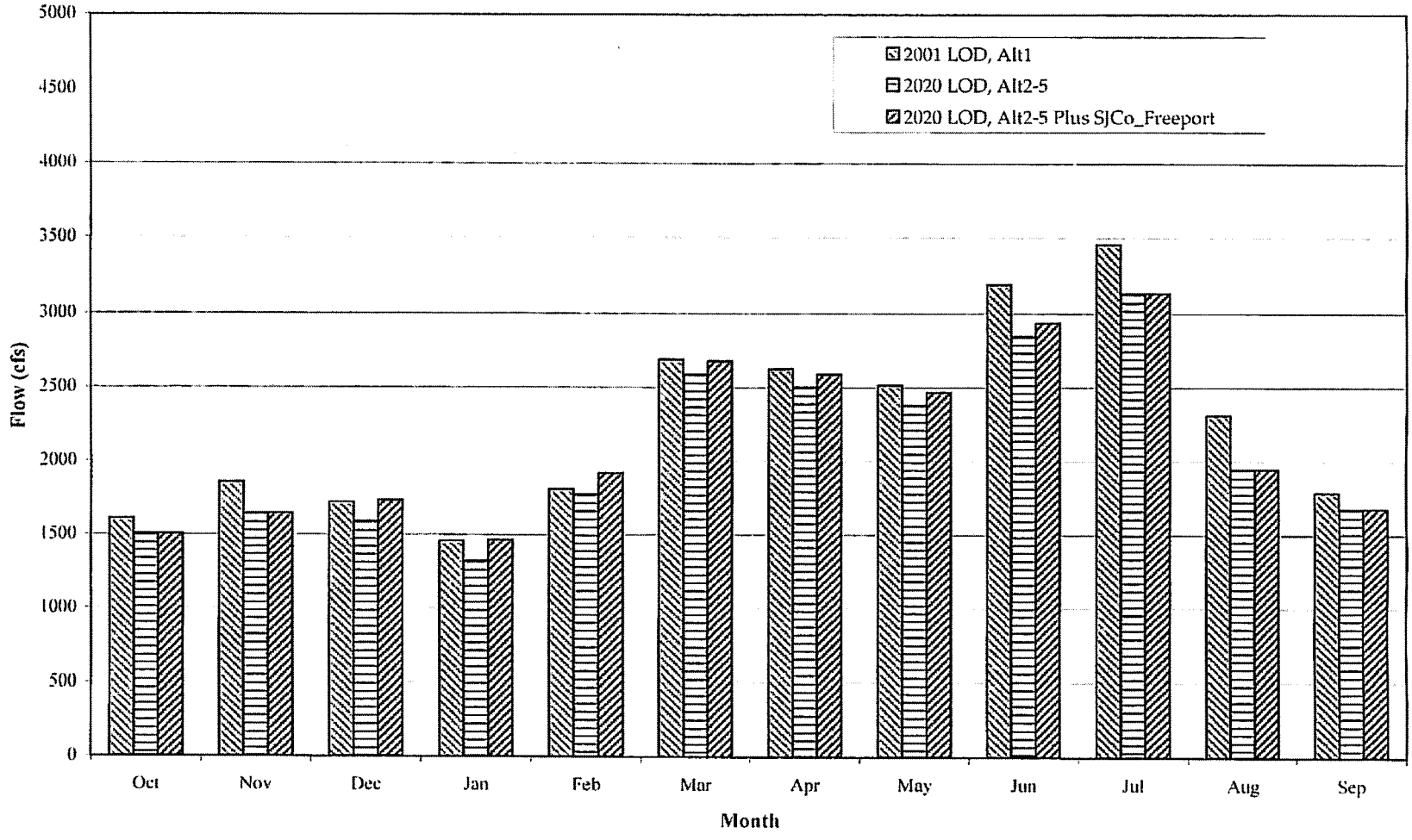
ORIME	Groundwater Banking Authority Integrated Regional Water Management Plan	June 2006
	Average Monthly Nimbus Release in Wet Years	FIGURE 12



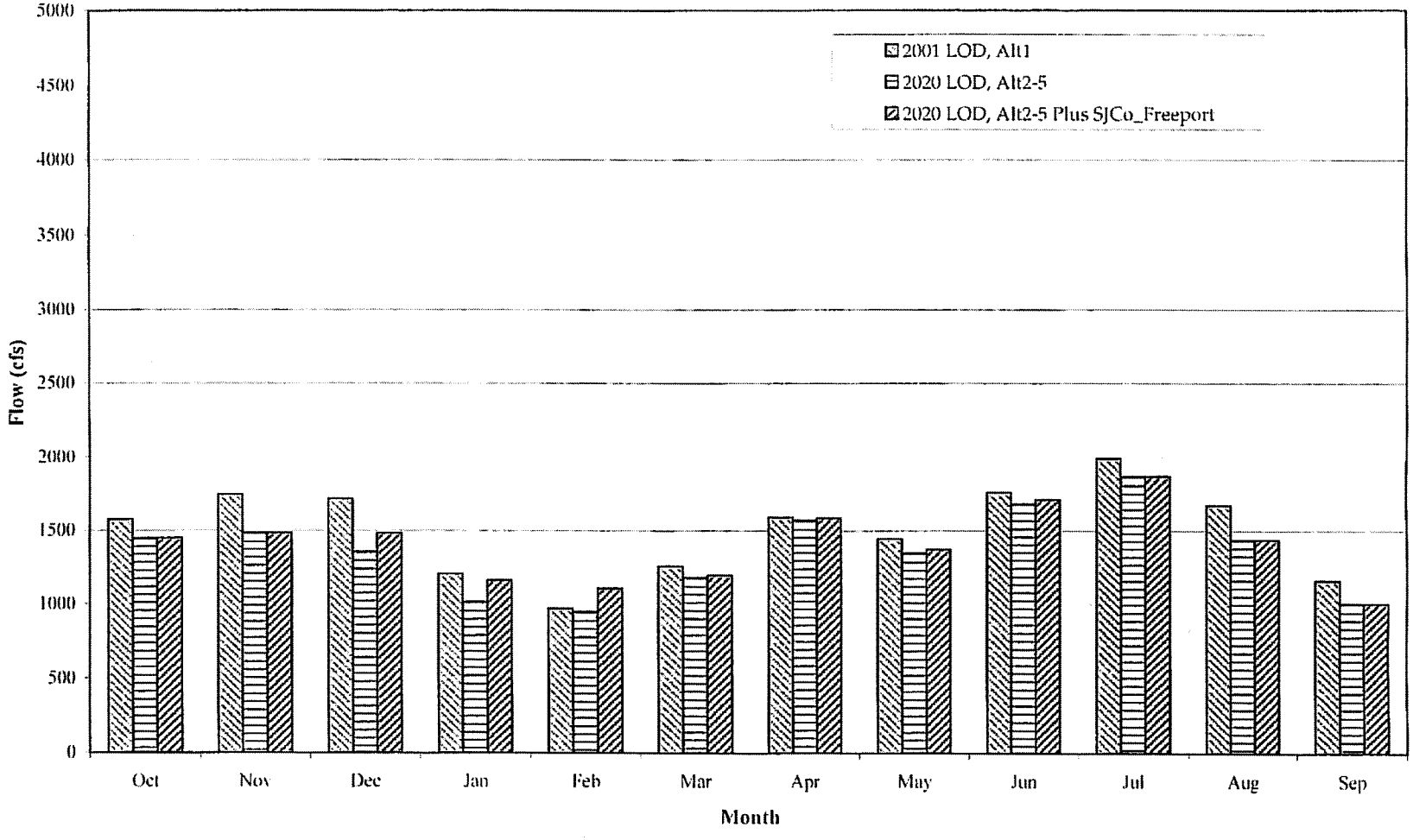
@RIME	Groundwater Banking Authority Integrated Regional Water Management Plan	June 2006
	Average Monthly Nimbus Release in Above Normal Years	FIGURE 13



RIME	Groundwater Banking Authority Integrated Regional Water Management Plan	June 2006
	Average Monthly Nimbus Release in Below Normal Years	FIGURE 14



ORIME	Groundwater Banking Authority Integrated Regional Water Management Plan	June 2006
	Average Monthly Nimbus Release in Dry Years	FIGURE 15



RIME	Groundwater Banking Authority Integrated Regional Water Management Plan	June 2006
	Average Monthly Nimbus Release in Critical Years	FIGURE 16