Appendix G

Modeling

Water Year 2010 Interim Flows Project
Draft Environmental Assessment/Initial Study

June 2009

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List of Abbreviations and Acronyms

°C	degrees Celsius
°F	degrees Fahrenheit
µS/cm	microSiemen per cubic meter
Banks Pumping Plant	Harvey O. Banks Pumping Plant
CACMP	Common Assumptions Common Modeling Package
CBOD	carbonaceous biochemical oxygen demand
CCWD	Contra Costa Water District
CEQA	California Environmental Quality Act
cfs	cubic foot per second
CP	control point
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVPM	Central Valley Production Model
D-1641	SWRCB Water Right Decision 1641
D-1455	SWRCB Water Right Decision 1455
Delta	Sacramento-San Joaquin Delta
DICU	Delta Island Consumptive Use
DMC	Delta-Mendota Canal
DSM2	Delta Simulation Model 2
DWR	California Department of Water Resources
EA/IS	Environmental Assessment/Initial Study
EC	electrical conductivity
EDT	Ecosystem Diagnostic Tool
Friant Division	Friant Division of the Central Valley Project
HEC-RAS	U.S. Army Corps of Engineers Hydrologic Engineering Center – River Analysis System
I/O	input/output
Joint-Point	Joint Point of Diversion operations for the Central Valley Project and State Water Project
LOD	level of development
MAF	million acre-feet
MWQI	Municipal Water Quality Investigations
NEPA	National Environmental Policy Act (1969)
NO_x	nitrous oxide

PEIS/R	Program Environmental Impact Statement/Report
PG&E	Pacific Gas and Electric Company
PM_{10}	particulate matter of 10 micrometers or less
PM_{25}	particulate matter of 25 micrometers or less
Reclamation	U.S. Department of Interior, Bureau of Reclamation
ROG	reactive organic gas
SJR5Q	San Joaquin River Temperature Model
SJRRP	San Joaquin River Restoration Program
SWP	State Water Project
SWRCB	State Water Resources Control Board
TAF	thousand acre-feet
TCD	temperature control device
TS	time series
USACE	U.S. Army Corps of Engineers
USAN	Upper San Joaquin River Basin Model
USGS	U.S. Geological Survey
USJRBSI	Upper San Joaquin River Basin Storage Investigation
V9B	Version 9B
VAMP	Vernalis Adaptive Management Plan
W2	CE-QUAL-W2
WMA	Water Management Area
WQCP	Water Quality Control Plan
WY	Water Year

1.0 Introduction

The Water Year (WY) 2010 Interim Flows Environmental Assessment/Initial Study (EA/IS) and Proposed Mitigated Negative Declaration (MND) for the San Joaquin River Restoration Program (SJRRP) include evaluations of potential effects on a number of resource areas. Numerical modeling has been used to develop much of the quantitative data required for this evaluation. This appendix documents the modeling performed to support the evaluation of effects associated with the WY 2010 Interim Flows, including describing the overall modeling process followed, specific models and tools used, major assumptions required to implement the models, and types of outputs generated. Modeling results are presented but no additional analysis or comparisons of alternatives are included.

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2.0 Modeling Process

This section documents the overall modeling process, and then describes the quantitative modeling that has been performed in support of the SJRRP EA/IS and MND.

2.1 Need for Quantitative Modeling

Resource areas required for National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) compliance will be evaluated to identify potential effects that would result from implementing the Proposed Action. Resource areas to be evaluated for potential effects of the Proposed Action include the following:

- Aesthetics
- Land Use/Planning and Agricultural Resources
- Air Quality
- Biological Resources – Terrestrial Resources
- Biological Resources – Fish
- Cultural Resources
- Geology, Soils, and Mineral Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Recreation
- Transportation and Traffic
- Utilities and Public Service Systems
- Socioeconomics (Population, Employment, and Housing)

Resource area evaluations for the Proposed Action will be based on quantitative and qualitative assessments using output from model simulations, other analysis tools, previous studies, or other existing information. Each resource area will be evaluated by applying one or more of the following methods:

- **Comparison of quantitative simulation results** – Some modeling tools used for the WY 2010 Interim Flows EA/IS resource area evaluations will provide quantitative output that will be used for direct comparisons between the No-Action Alternative and the Proposed Action to identify effects on resources from releasing WY 2010 Interim Flows. For example, output from system water supply operations model (CalSim) simulations will be directly compared to identify changes in river flow, water supply deliveries to Friant Division of the Central Valley Project (Friant Division) long-term contractors, and other effects to Central Valley Project (CVP) and State Water Project (SWP) operations that would result from Interim and Restoration flow releases from Friant Dam.

- **Interpretation/extrapolation from quantitative simulations** – Many of the quantitative models providing output for direct comparisons of effects on resources, as described above, will also be used to interpret/extrapolate effects on other resources. For example, output from CalSim simulations will inform the evaluation of effects to fisheries due to changes in river flows. Similarly, other models may be used solely to provide quantitative data for interpretation or extrapolation from quantitative simulations.

- **Interpretation/extrapolation from available data or previous studies** – Existing data and information from previous studies will be used to interpret/extrapolate the effects on resources when model simulations are not needed or not feasible. For example, implementation effects on cultural resources will be identified in part through a review of previously conducted archaeological and historical studies.

- **Qualitative description with limited or no data** – When available data or previous studies are limited or unavailable, a qualitative description of the effects will be developed using professional judgment and any limited data that may be available.

A variety of models and other analysis tools were used to identify the effects of implementing the Proposed Action, as described in the following section.

2.2 Quantitative Assessment Tools

Models and other analytical tools that were used in the WY 2010 Interim Flows EA/IS are summarized below. Models that helped identify effects of the Proposed Action, but were not used in the WY 2010 Interim Flows EA/IS, are also described.

2.2.1 Models Used in the Environmental Assessment/Initial Study

This section describes models used to evaluate WY 2010 Interim Flows.

Water Supply Operations

System water supply operations effects would result from the Proposed Action for two major reasons:

- WY 2010 Interim Flows have the potential to change flows between the San Joaquin River upstream from Friant Dam to the Sacramento-San Joaquin Delta (Delta). The Delta is a crucial component of the CVP and the SWP. Any change to San Joaquin River inflow to the Delta can potentially affect operations of the CVP and SWP, and thereby water supply to the majority of the State of California (State).

- The Settlement includes a goal to minimize water supply effects to local Friant Settling Parties. Water management actions to address this goal may have water supply effects.

CalSim is a water supply operations model that includes CVP, SWP, and Friant Division water supply operations. The model simulates an 82-year period of hydrologic record (1922 to 2003) on a monthly time step. CalSim assumes a constant set of demands, facilities, and operation rules appropriate for each alternative for all 82 years.

CalSim will be used to simulate potential water supply operations of the SJRRP Proposed Action. Results of the model will be used directly for water supply impact analyses, and indirectly to set overall water operation guidelines for other analyses.

Delta Water Quality

The Delta Simulation Model 2 (DSM2) will be used with CalSim results to describe Delta water quality for each program alternative. DSM2 is a hydrodynamic model of the Delta developed by the California Department of Water Resources (DWR) that simulates flow and salinity changes throughout the Delta caused by changes in Delta inflow or CVP/SWP pumping. The model uses monthly CalSim results and produces mean monthly flow and salinity values.

Regional Groundwater

A custom tool, developed in Excel, will be used with simulated flow and delivery data to generate descriptions of regional depth to groundwater and groundwater pumping. This regional groundwater tool is based on relationships describing annual groundwater pumping and resulting groundwater level change developed during litigation studies by

Dr. Schmidt (2005a,b). The tool is not a full groundwater model but uses a water balance approach based on CalSim delivery output to produce the regional groundwater description.

Daily Disaggregation

An adequate evaluation of many of the resource areas will require data at a finer time step than the monthly output provided by CalSim. To meet this need, monthly water operations from CalSim will be disaggregated into daily water operations that are still bound by overall monthly limits.

The Millerton Daily Operations Model will be used to simulate daily water operations of Millerton Lake. This model, developed in Excel, takes the monthly CalSim boundary water operations of Millerton Lake (inflow, diversions, and long-term snowmelt flood releases), and interpolates between them to generate a potential set of daily values that still meet the monthly operations boundaries. These daily operations are then used with a simplified flood routing procedure to generate a set of daily releases from Millerton Lake to the San Joaquin River.

Reservoir Temperatures

Daily Millerton Lake water operation data will be used in a temperature model developed for the Upper San Joaquin River Basin Storage Investigation, to generate daily release temperatures into the Friant-Kern Canal, Madera Canal, and San Joaquin River. The reservoir temperature model is a two-dimensional model based on the CE-QUAL-W2 (W2) modeling platform. The model uses daily water operations data from the daily disaggregation tool and historical meteorology to simulate temperatures every 6 hours from January 1, 1980, to September 30, 2003. This time period is shorter than the CalSim model time period to reduce the volume of output, allow acceptable model execution times, and still cover the full range of temperature operations expected over the longer CalSim time period.

River Temperatures

Daily Millerton Lake San Joaquin River release flows and temperatures will be used in a temperature model of the San Joaquin River from Millerton Lake to the Merced River. The river temperature model, developed during the Settlement process, will route releases through the system and compute the temperature at various locations. The river temperature model is based on the HEC-5Q modeling platform. The model performs two separate functions. The first, based on the HEC-5 model embedded in the HEC-5Q modeling platform, routes water through the San Joaquin River and bypass system from Millerton Lake to the confluence with the Merced River. This portion of the model handles the physical diversion of water between the Chowchilla, Eastside, and Mariposa bypasses and the San Joaquin River, local accretions and depletions along the channels, and hydrologic routing of water to develop daily flows throughout the system. The second function uses flows and historical meteorology to simulate temperatures every 6 hours from January 1, 1980, to September 30, 2003.

2.2.2 Other Models

The following models are being used to evaluate the implementation of the SJRRP for the *Draft Program Environmental Impact Statement/Report* (PEIS/R), but were not used to evaluate implementation of the WY 2010 Interim Flows EA/IS.

System Power

System power operations, both power generation and power use for pumping, are being described using two power models. Long _Term_Gen and SWP_Power are Excel-based models developed by U.S. Department of the Interior, Bureau of Reclamation (Reclamation) and DWR to model CVP and SWP system power generation and pumping, respectively. These models use monthly water operations from CalSim to simulate monthly CVP and SWP plant and system power operations.

Near-River Groundwater

A model of groundwater flows near the San Joaquin River is being used to describe the local surface water/groundwater interface throughout the system, especially river seepage losses and the occurrence of high groundwater elevations or water-logging on lands close to the river. This high-resolution near-river groundwater model is based on the MODFLOW modeling platform, and uses flow data from surface water routing models and groundwater elevations from historical data.

Local Power

Power operations at Friant Dam are being described using an Excel-based model of generation facilities at Friant Dam. This model is based on the power simulation methodology used in the Upper San Joaquin River Basin Storage Investigation (USJRBSI). This model will use monthly water operations from CalSim to simulate power operations at Friant Dam.

Vegetation

System riparian vegetation is being evaluated using a vegetation model that links dominant river processes and the morphology of the channel to the dispersal, establishment, growth, expansion, and removal/mortality of riparian vegetation. The model, based on the SRH-1DV modeling platform, will use daily flow, sedimentation, and hydraulic information from other tools described in this section to simulate riparian vegetation response to SJRRP alternatives.

River Hydraulics

River hydraulics are important in developing the description of some of the resource areas. The river hydraulics are being evaluated using a hydraulic model based on the U.S. Army Corps of Engineers (USACE) Hydraulic Engineering Center - River Analysis System (HEC-RAS) modeling platform. This analysis is independent of daily flows from the SJRRP alternatives; it describes the relationship between flow and hydraulic parameters such as depth, top width, velocity, etc., that may be required for other analyses.

Sediment

Sediment transport and deposition are being described using a model that links the dominant flow patterns and morphology of the channel to sediment conditions. The model, based on the HEC-RAS modeling platform, will use daily flow from other tools described in this section to simulate sediment behavior in the river channel resulting from SJRRP alternatives.

Agricultural Economics

Agricultural economics are being described using a model based on the Central Valley Production Model (CVPM) modeling platform. Based on the changes in water availability expected with each SJRRP alternative, CVPM predicts cropping patterns, land use, and water use in the Central Valley. These predictions are then used to calculate expected changes in net income resulting from each SJRRP alternative. This model uses CalSim water delivery output and groundwater levels from the regional groundwater tool.

Regional Economics

Regional economics are being simulated using a model based on the IMPLAN modeling platform. IMPLAN modeling uses a branch of economics known as input/output (I/O) analysis. I/O models are based on data tables that trace the linkages of interindustry purchases and sales within a given region, and within a given year. The I/O model yields "multipliers" that are used to calculate the total direct, indirect, and induced effects on jobs, income, and output generated per dollar of spending on various types of goods and services in the regional economic study area. This model uses output from the CVPM agricultural economics model, and could also use output from other models.

3.0 Water Operations Modeling

The CVP and SWP operate several large reservoirs and canals serving both agricultural and municipal clients throughout California. Water supplies in the State are governed by complex and layered cycles of supply and demand, legal conditions, transfer agreements, and regulations. Infrastructure for the CVP and SWP are tied together through regulations for the Delta – a conveyance feature and ecological system that is undergoing rapid changes in regulation.

3.1 CVP/SWP System Operation Modeling (CalSim)

The Settlement includes specific flow requirements for the San Joaquin River below Millerton Lake. Meeting these requirements will require a substantial increase in the current release patterns for Millerton Lake. These changes in releases are expected to result in a significant change in Millerton operations. The water operations model is used to simulate revised Millerton operations, diversions into the Friant-Kern and Madera canals, and flow in the San Joaquin River.

Currently, portions of the San Joaquin River run dry during certain times of the year, effectively disconnecting Millerton operations from the Delta and the CVP/SWP systems. Implementation of the Settlement is intended to reestablish a connection between the Friant Division system and the rest of the Central Valley water system, including the CVP and SWP. Changes to the pattern, volume, and timing of releases along the San Joaquin River are likely to affect water releases throughout the Central Valley. It will be necessary for the SJRRP to evaluate subsequent, reactive operation changes of the CVP, SWP operations, and other water Central Valley water systems, and their associated impacts.

Evaluation of the impacts to these systems, and to the environment, will require detailed information on water operations resulting from the release of WY 2010 Interim Flows. CalSim was selected as the basis for evaluating the impacts of WY 2010 Interim Flow releases on the water supply and water operations of these systems. Water operations under the Proposed Action will be compared with water operations under the No-Action Alternative for two distinct purposes. One purpose is to evaluate direct impacts to water operations, including the following:

- Millerton Lake elevation, storage, and release
- Diversions to Friant-Kern and Madera canals
- Flow in the downstream San Joaquin River

- Reservoir operations and stream flows on San Joaquin tributaries
- Delta inflow
- CVP/SWP operations, including both Sacramento River Valley and Delta operation impacts

Results of water operations modeling will also be used to supply input data required for other analysis areas in the evaluation of WY 2010 Interim Flows for the EA/IS, including the following:

- Regional groundwater
- Water quality

3.1.1 Model Description

CalSim is a planning model designed to simulate operations of the CVP and SWP reservoirs and water delivery system for current and future facilities, flood control operating criteria, water delivery policies, and instream flow and Delta outflow requirements. CalSim is the best available tool for modeling the CVP and SWP, and is the only systemwide hydrologic model being used by Reclamation and DWR to conduct planning and impact analyses of potential projects.

CalSim is a level of development (LOD)-type model. It simulates operation of the CVP and SWP for a set of physical conditions and regulatory requirements that is the same for each year. The model simulates these conditions using 82 years of historical hydrology adjusted to reflect the constant LOD, from WY 1922 through 2003. CalSim operates the CVP and SWP using a mixed-integer linear programming solver that maximizes an objective function for each month of the simulation.

CalSim modeling conducted for this project is built on the Common Assumption Common modeling package (CACMP) Version 9B (V9B), developed jointly by Reclamation and DWR. At this time, V9B is the most appropriate representation of system facilities and operations for this evaluation. Project-specific modifications to this version of CalSim were required to simulate the SJRRP; these modifications are documented throughout this appendix.

CalSim is designed to simulate the effects of various regulatory requirements by running multiple "steps." CalSim steps simulate the operations of the CVP and SWP system under select regulatory requirements and agreements. The model is run for each step for 1 year. End-of-year conditions from the final step become input for the first step of the next year. The version 9B model contains the following five steps:

D-1641 – State Water Resources Control Board (SWRCB) Water Right Decision 1641 (D-1641) was issued in 1999, revised in 2000, and specifies how the 1995 Water Quality Control Plan (WQCP) is to be implemented. D-1641 provides both flow and water quality requirements at key locations in the Delta. Many requirements in D-1641 are based on the Sacramento Valley water year-type which is calculated based on the current and previous year's unimpaired runoff of

the Sacramento, Feather, Yuba, and American rivers. D-1641 is the current basis for most regulatory requirements governing the Delta, which in turn affects how the CVP and SWP operate upstream reservoirs and Delta export pumps. CalSim simulates the system under these regulations and stores the resulting operations for comparison and use with results from other steps.

D-1485 – SWRCB Water Right Decision 1485 (D-1485) was replaced by D-1641 and is no longer used for Delta standards or for operation of the CVP or SWP. However, Section b(2) of the Central Valley Project Improvement Act (CVPIA) dedicated 800 thousand acre-feet (TAF) of water to be made available for environmental purposes. "B(2)" water is split into two separate accounts: nondiscretionary and discretionary. Nondiscretionary b(2) water, which can constitute all or part of the 800 TAF, is the difference in water costs (either additional releases from upstream reservoirs or water available but not exported from the Delta) to meet the more stringent requirements of D-1641 instead of the previous requirements of D-1485. Therefore, CalSim simulates operations of the system under both D-1641 and D-1485 for the purpose of determining this difference in water costs.

CVPIA b(2) – The b(2) step compares operations of the system under both D-1641 and D-1485 to determine the nondiscretionary portion of CVPIA b(2) water. The use of the remaining volume of water, the discretionary account, is simulated in the b(2) step. Discretionary b(2) water may include additional wintertime releases from upstream reservoirs or export reductions in the weeks before and after the reductions that occur in the spring as part of the Vernalis Adaptive Management Plan (VAMP). CalSim results at the end of the b(2) step depict operation of the system under D-1641 and CVPIA b(2). These results are used as the basis for simulation of additional operations in the following steps.

Conveyance – The conveyance and transfer steps of CalSim are primarily used to simulate specific aspects of project operations, as opposed to regulatory requirements simulated in the preceding steps. CVPIA b(2) actions and costs are "fixed" to those simulated in the b(2) step.

Transfer – The CalSim transfer step layers Stage 2 water transfers onto operations, and simulates Joint-Point of Diversion operations for the CVP and SWP (Joint-Point). Stage 2 water transfers are region-specific acquisitions made by municipal water users to supplement project water supplies. Stage 2 transfers are private party transfers moved through the Delta as a last priority for export capacity. Joint-Point operations increase the flexibility of CVP and SWP exports by allowing both projects to use available export capacity at each other's pumps. The transfer step also includes wheeling CVP water for Cross Valley Canal contractors at the Harvey O. Banks Pumping Plant (Banks Pumping Plant). For the purpose of this analysis, a Conveyance single-step study is used with the addition of Joint-Point and Cross Valley Canal wheeling from the Transfer step. The reason is that the Conveyance step is the last point where a dynamic link between San Joaquin River operations and the rest of the CVP/SWP systems

exists. (At the Transfer step, all San Joaquin River operations have already been predetermined at the Conveyance step.) Since potential exists for some WY 2010 Interim Flows to be captured downstream from Vernalis and returned to the Friant Division using CVP and SWP facilities, the dynamic link needs to be maintained. The other option is to run a multistep study, with all key WY 2010 Interim Flows operations still occurring in the Conveyance step. This would require significantly more modeling effort with no significant change in results or conclusions. The single-step Conveyance study lacks a dynamic CVPIA b(2) operation and Stage 2 water transfers. As for b(2), upstream releases and export limits are applied just as in the CACMP V9B baseline; however, the WY 2010 Interim Flows might alter the costs of such actions. With the changes in costs, a dynamic b(2) operation might make different CVPIA b(2) action decisions. In the case of the Stage 2 transfers, they occur during the summer months of droughts.

Friant Division

CalSim incorporates a dynamic operation of Friant Division water diversions and operations. Canal diversions vary from year to year based on an annually variable water supply, and includes consideration of the current protocols for providing three categories of water supply. Under the current contracts (without implementing WY 2010 Interim Flows) the Class 1 water supply is considered the "firm supply" from the Friant Division and amounts to the first 800 TAF of yield from the San Joaquin River and reservoir storage. Class 2 deliveries are developed after Class 1 deliveries are met. These deliveries are highly variable because of variable hydrology. Deliveries that occur when water is unstorable are also modeled. Monthly distribution of the annual diversion is based on historical delivery practices of the contractors. Minimum required releases below Friant Dam for riparian and contractor users are modeled as a constant annual requirement, consistent with recent records of operations.

Flood control operations for Millerton Lake and the lower San Joaquin River are based on the rain-flood space reservation requirements specified by USACE. Flood control operation during the snowmelt runoff period recognizes the competing objectives of water supply and flood control. The operation attempts to maximize water supply carryover storage (into summer) while reducing the potential for downstream flooding.

San Joaquin River Inflow to Millerton Lake

Above Friant Dam, the San Joaquin River drains an area of approximately 1,676 square miles and has an average annual unimpaired runoff of 1,700 TAF. The median historical unimpaired annual runoff is 1,400 million acre-feet (MAF), with a range of 400 TAF to 4,600 TAF. Several reservoirs in the upper portion of the San Joaquin River watershed, including Mammoth Pool and Shaver Lake, regulate runoff primarily for hydroelectric power generation. These storage facilities have a combined storage capacity of approximately 620 TAF. Operation of these reservoirs affects inflow to Millerton Lake. Figure 3-1 identifies the San Joaquin River watershed upstream Millerton Lake.

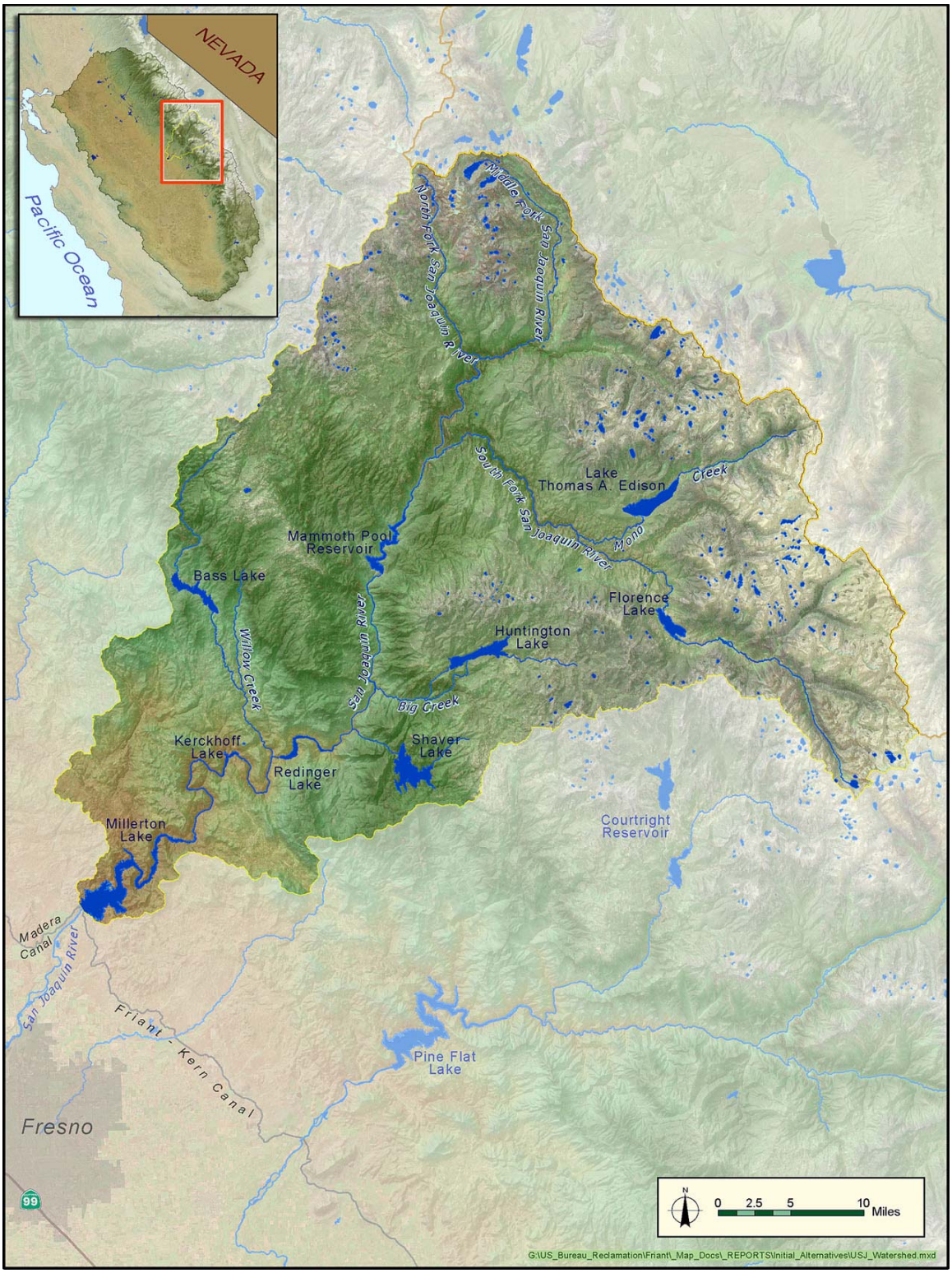


Figure 3-1.
San Joaquin River Watershed Upstream from Millerton Lake

Millerton Lake inflow is derived from the modeling output of the Upper San Joaquin River Basin Model (USAN), which simulates current San Joaquin River operations from headwaters to Millerton Lake (Reclamation 2000a). USAN is a daily time step model and its Millerton Lake inflow data have been converted to monthly average values for CalSim. The USAN simulation incorporated into CalSim is referred to as the "Base Plan" (Reclamation 2000b). Reservoirs simulated by USAN are labeled in Figure 3-1.

Modifications of CACMP V9B CalSim

The CACMP V9B CalSim baseline was modified to allow SJRRP operations, to be implemented.

A sectional representation of the Friant-Kern Canal was added with contractor demands and diversions disaggregated by Water Management Area (WMA) to provide canal capacity.

Class 1 and Class 2 deliveries to the Madera and Chowchilla irrigation districts were reduced when Hidden and Buchanan dams were spilling. In V9B, rather than holding the water in Millerton Lake to be delivered at a later date, the water was sometimes mistakenly reallocated to other contractors. This was fixed for the WY 2010 Interim Flows baseline and studies.

Some of the exchange and refuge diversions were being taken from the Mendota Pool that are actually taken at Sack Dam, downstream from Mendota Pool. With WY 2010 Interim Flows, the location of these diversions is important because Delta-Mendota Canal (DMC) and San Joaquin River water mix upstream from Sack Dam. This will, in turn, affect water quality downstream of Sack Dam. These diversions were moved downstream to the node representing Sack Dam.

3.1.2 Suitability of CalSim

CalSim, and explicitly the component of CalSim that depicts the San Joaquin River basin, is currently being used in ongoing water supply planning efforts of Reclamation and DWR, including the USJRBSI, Los Vaqueros Reservoir Expansion Investigation, and others. Use of CalSim for this analysis provides consistency among the several planning initiatives throughout the State.

Representation of the San Joaquin River within CalSim has undergone extensive Peer Review and testing (CALFED 2006). The specific model logic and algorithms embedded in studies for the SJRRP contain several enhancements specifically needed for evaluation of the SJRRP. Enhancements are summarized in Section 3.1.1.

The Friant Division's water delivery logic is included in CalSim. The following plots compare historical operations to CalSim simulation results. These plots provide comparisons back to 1961, even though CalSim simulations begin in 1922. Before 1961, Friant Division water user facilities were not completely built, and many of the facilities in the Tulare Lake Basin were incomplete – thus, plots for those time periods would not yield valuable comparisons.

Figures 3-2 through 3-5 compare historical and simulated Friant Dam storages, river releases, and canal diversions for the Friant Division. While noticeable differences occur between historical and simulated annual delivery and river release volumes for some time periods, the differences are likely due to the inability of the model to reflect discretionary and intermittent actions, such as flood management and canal maintenance.

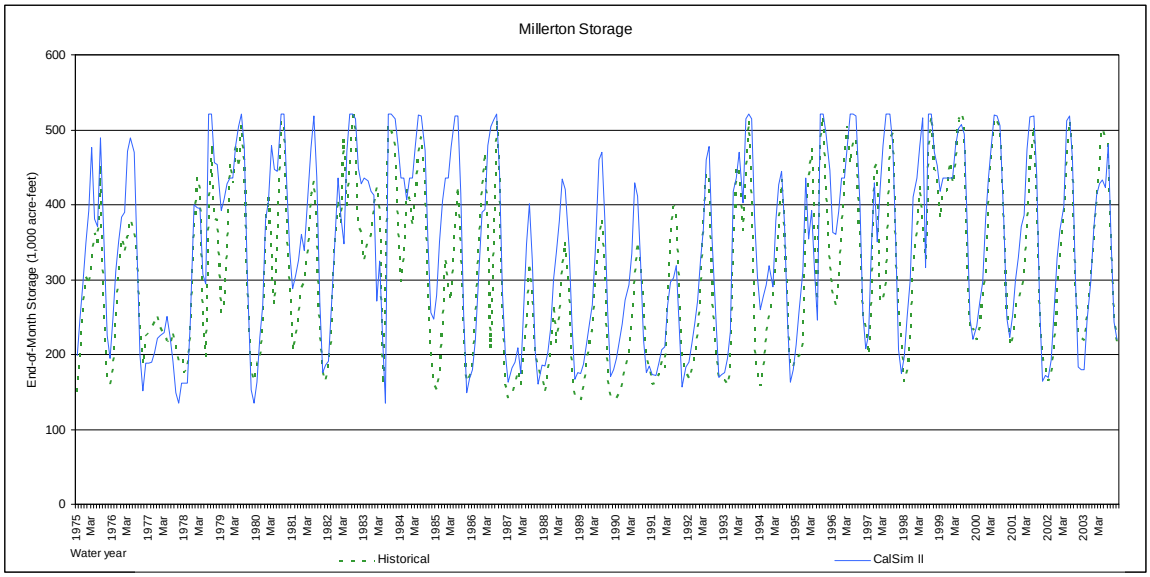


Figure 3-2.
Millerton Lake Storage

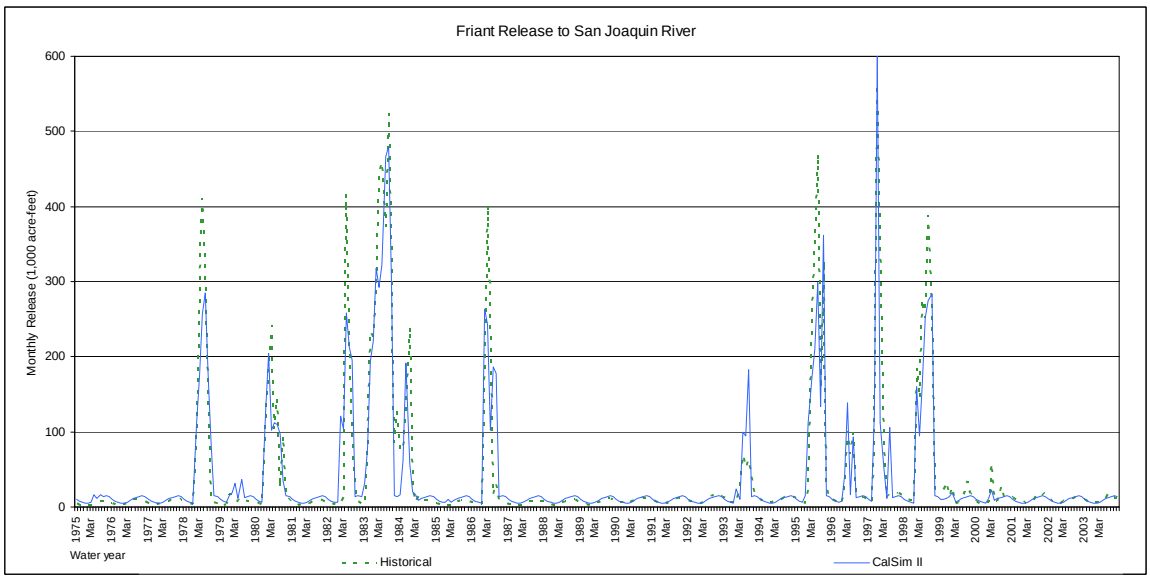


Figure 3-3.
Total Friant Dam River Releases

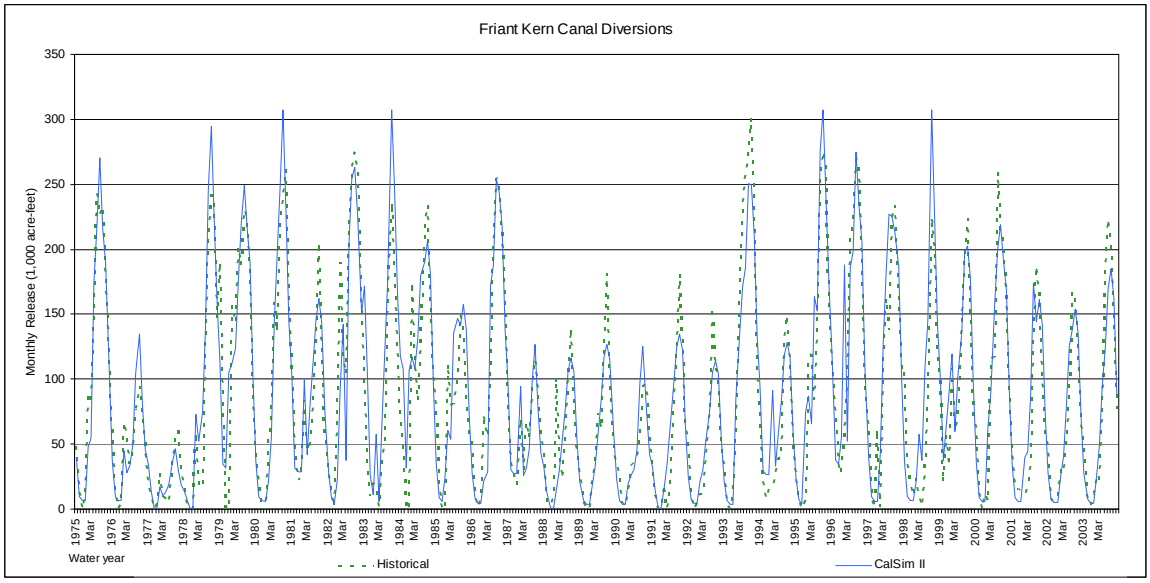


Figure 3-4.
Friant-Kern Canal Diversions

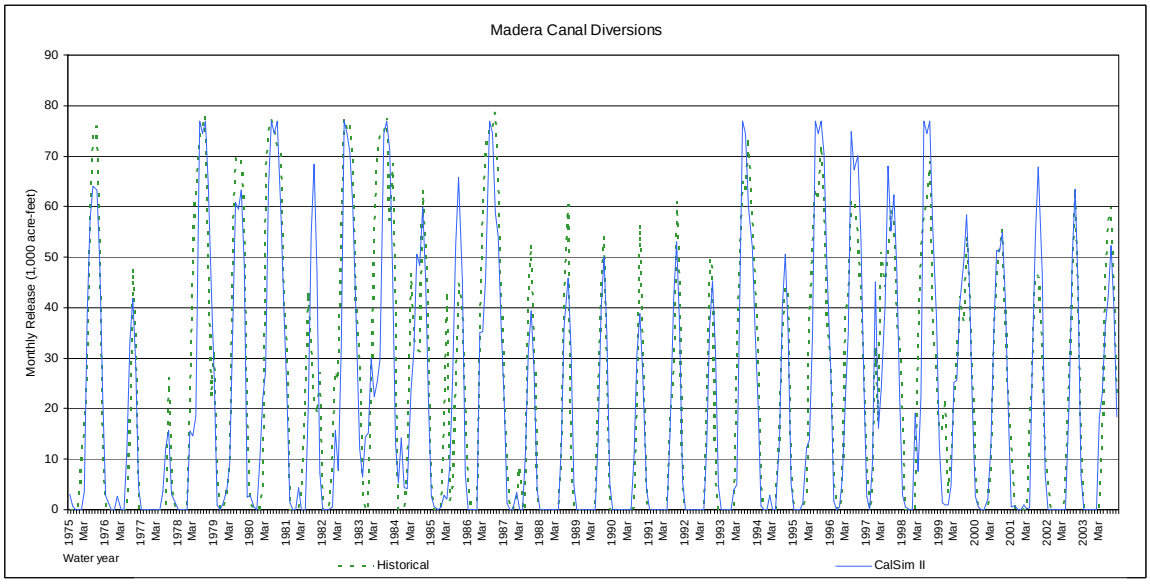


Figure 3-5.
Madera Canal Diversions

Review suggested that one aspect of CalSim that could require further refinement is the water quality depiction of the San Joaquin River. Of particular concern is the calculated sensitivity at the Stanislaus River confluence due to the San Joaquin River's influence on New Melones Project operations.

Figure 3-6 is a plot of San Joaquin River electrical conductivity (EC) and San Joaquin River flow, as depicted by CalSim and as recorded for October 1995 through September 2003. This graphic is representative of the accuracy of CalSim in depicting flow and water quality conditions in the San Joaquin River upstream from the Stanislaus River confluence, a location typically referred to as the "Maze" Boulevard crossing of the river. A flow and quality recorder exists at this location and provided information for the calibration of CalSim. As addressed in the Peer Review, CalSim provides an adequate simulation of San Joaquin River flow and water quality conditions, and is the best available tool for such a depiction, and was not modified for this WY 2010 Interim Flows EA/IS.

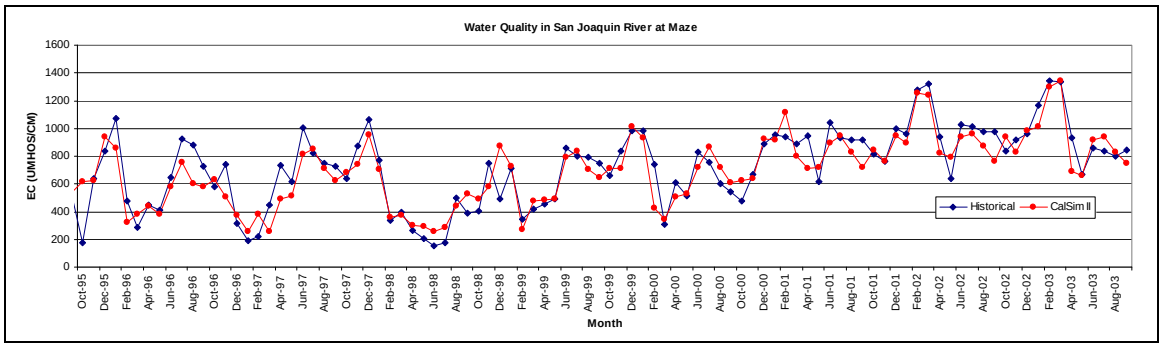


Figure 3-6.
Electrical Conductivity – San Joaquin River at Maze

CalSim is also an appropriate tool to analyze the interaction between San Joaquin River flow and quality conditions, as affected by WY 2010 Interim Flows and operation of the New Melones Project.

Figure 3-7 compares the annual historical and simulated flow at Vernalis. The comparison of the simulated and historical monthly San Joaquin River flows at Vernalis are identified in Figure 3-8.

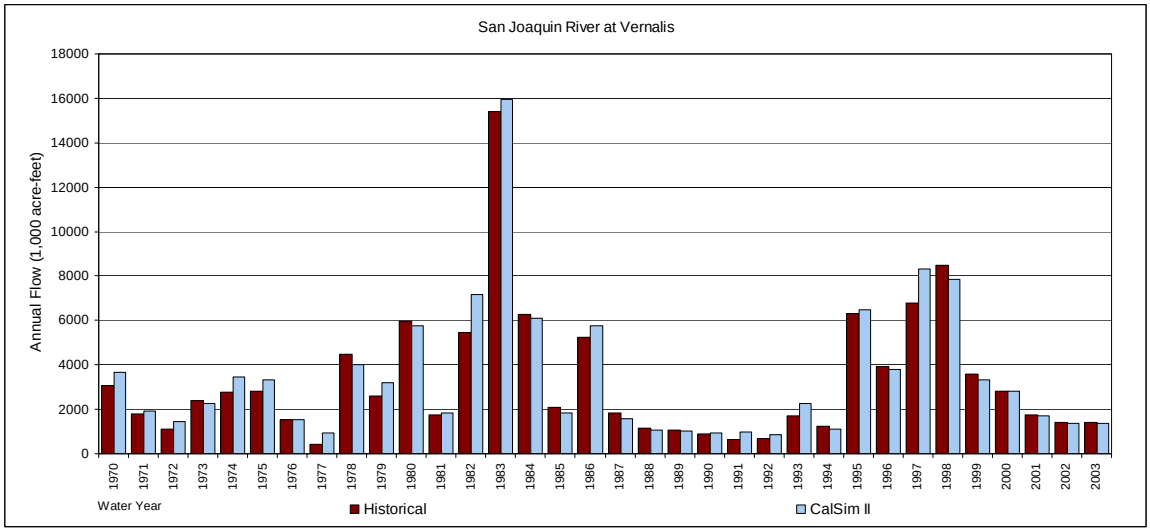


Figure 3-7.
Annual San Joaquin River Flow Volume at Vernalis

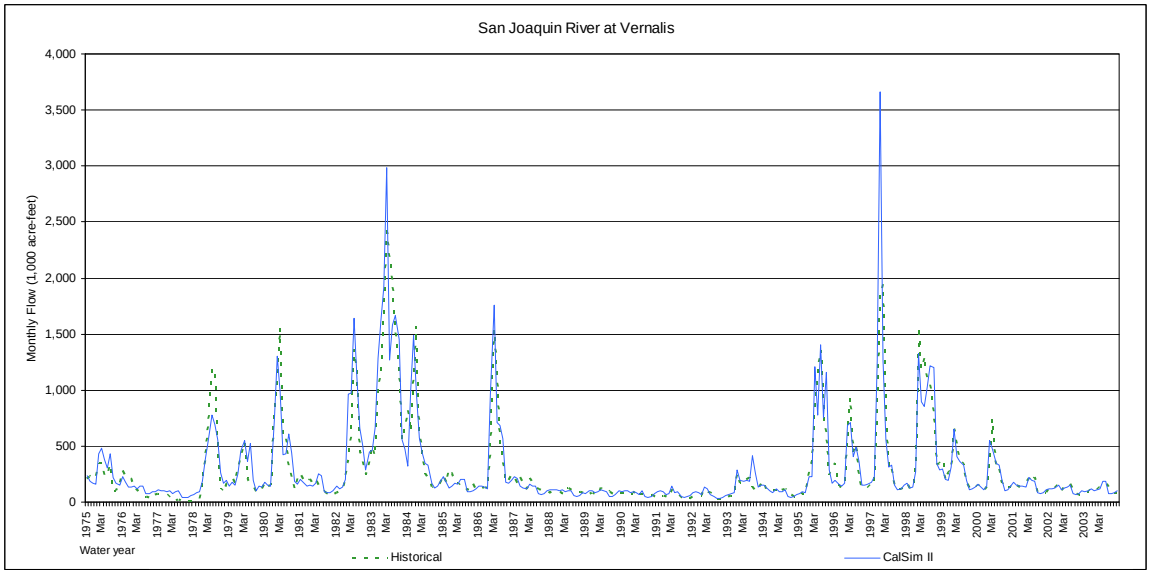


Figure 3-8.
San Joaquin River Flow Volume at Vernalis

3.1.3 Modeling Assumptions

A complete description of CalSim assumptions requires descriptions of how operations for both the CVP and SWP throughout California are simulated. The CACMP V9B CalSim baseline has a well-documented series of tabulated assumptions that are presented in the Water Operations Modeling – CalSim Attachment 1 to this appendix.

Existing Minimum San Joaquin River Flow Requirement

For all CalSim models runs, a number of modifications were made to capture SJRRP operations between Friant Dam and the Merced River confluence. Existing releases from

Friant Dam to the San Joaquin River are normally limited to the amount necessary to maintain diversions by riparian and contractor users below Friant Dam to a location near Gravelly Ford. Water diverted to the fish hatchery below Friant Dam and returned to the river partially serves that purpose. Review of historical operation records (Reclamation monthly reservoir operation reports) provides guidance in estimating the minimum downstream release. From an analysis of the historical record (1990 – 1994) for periods when no flood control releases were made, an annual release of 116.7 TAF was estimated to be the current minimum release necessary to meet downstream diversions (including seepage). Table 3-1 illustrates the assumed monthly distribution of this release requirement.

Table 3-1.
Estimated Millerton Lake Minimum River Release Requirement (TAF)

Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
10.1	7.4	6.7	4.5	5.0	6.6	9.0	10.9	12.9	14.4	15.7	13.4
Total: 116.7 TAF											

Key:
TAF = thousand acre-feet

Existing Level of Development

CalSim simulations at a projected LOD are used to show how the modeled water system might operate with an assumed physical and institutional configuration imposed on a long-term sequential hydrologic trace. An existing LOD study assumes that current land use, facilities, and operational objectives are in place for each year of simulation (1922 through 2003). The results are a depiction of the current environment, which provides a basis for comparing of project effects for the CEQA analysis.

Parameters used to describe existing LOD hydrologic conditions and operating rules for the San Joaquin River basin water system were developed using recent historical data and current established operational objectives and requirements. These criteria are described in the *Reclamation CalSim San Joaquin River Model Draft Documentation* (2000a). The results provide a CalSim simulation of the system depicting current operations.

Drainage from the San Joaquin River. Drainage and return flows from the San Joaquin River for the existing LOD are described in the *Reclamation CalSim San Joaquin River Model Draft Documentation*, particularly in the discussion of the water quality module (2000a). Several of the salinity (EC) characteristics of the drainage and return flow components are explicitly modeled in CalSim. One such explicit component is the discharge of the Grassland Bypass Project. This project, now incorporated into the *West Side Regional Drainage Plan*, continues to operate to reduce selenium discharges to the San Joaquin River. The existing LOD discharge is assumed to be approximately 30 TAF per year.

3.1.4 Proposed Action Formulation

The Proposed Action was implemented at the existing LOD. It includes the WY 2010 Interim Flows minimum Friant Dam release requirements, as derived using Method 3.1, Transformation pathway "alpha" and 1,300 cubic feet per second (cfs) conveyance capacity constraints at Reaches 2B and 3. Complete descriptions of Method 3.1 and the alpha pathway are described in Appendix C. Table 3-2 presents maximum flows under the WY 2010 Interim Flows, by reach.

WY 2010 Interim Flows enter the Delta and are divided between Delta outflow and capture by the CVP and SWP according to existing physical and regulatory constraints.

WY 2010 Interim Flow Implementation

WY 2010 Interim Flows would be implemented as a minimum required release from Friant Dam. The WY 2010 Interim Flows release schedule was preprocessed using Method 3.1, and includes the 117 TAF annual preflow release for downstream riparian diversions and losses. In March, April, and November, the WY 2010 Interim Flows schedule calls for flow pulses measured in days and weeks. Day-weighted average flows for the months of March and November were used for the monthly time step simulation. However, because of the synchronization of the April WY 2010 Interim Flows with downstream releases for VAMP, a split-month operation was implemented to quantify downstream impacts.

Scheduled WY 2010 Interim Flow releases were incorporated into Friant water supply and flood control operations. Planned releases were used to reduce the forecasted water supply for Class 1 and Class 2 deliveries. Surplus forecasts also took scheduled WY 2010 Interim Flows into account, thereby reducing snowmelt releases, Section 215 deliveries.

Alternatives Assumptions

For the Proposed Action, key assumptions are as follows:

- WY 2010 Interim Flow releases, as developed with Method 3.1 and Conveyance capacity constraints at Reaches 2B and 3.
- Between Friant Dam and the confluence of the Merced River, WY 2010 Interim Flows are reduced by riparian diversions and instream losses.
- New Melones Reservoir is allowed to respond to changes in flow and water quality at Vernalis.
- No WY 2010 Interim Flow is captured for direct return to Friant.
- CVP and SWP operations respond to changed inflow at Vernalis according to existing physical and regulatory constraints and operating rules.
- Capacity is limited to 1,300 cfs for nonflood flows in Reaches 2B and 3.

Table 3-2.
Maximum Flows Under the Proposed Action by Reach

Dates of Interim Flow Release		Maximum Flows Under the Proposed Action[1] at Locations in the Restoration Area (cubic feet per second)									
Beginning Date	Ending Date	Head of Reach 1[3]	Head of Reach 2A[4]	Head of Reach 2B[5]	Head of Reach 3[6]	Head of Reach 4A[7]	In Reach 4B1	In Reach 4B2	In Eastside Bypass[7]	Head of Reach 5	Merced River Confluence[8]
10/1/2009	10/31/2009	350	195	115	715	115	0	115	115	115	415
11/1/2009	11/6/2009	700	575	475	1,075	475	0	475	475	475	775
11/7/2009	11/10/2009	700	575	475	1,075	475	0	475	475	475	775
11/11/2009	11/20/2009	350	235	155	755	155	0	155	155	155	555
11/21/2009[2]	1/31/2010[2]	120	5	0	0	0	0	0	0	0	0
2/1/2010	2/28/2010	350	255	175	775	175	0	175	175	175	675
3/1/2010	3/15/2010	500	375	285	885	285	0	285	285	285	785
3/16/2010	3/31/2010	1,500	1,375	1,225	1,300	1,225	0	1,225	1,225	1,225	1,700
4/1/2010	4/15/2010	1,620	1,475	1,300	1,300	1,300	0	1,300	1,300	1,300	1,700
4/16/2010	4/30/2010	1,620	1,475	1,300	1,300	1,300	0	1,300	1,300	1,300	1,700
5/1/2010	6/30/2010	1,660	1,475	1,300	1,300	1,300	0	1,300	1,300	1,300	1,700
7/1/2010	8/31/2010	350	125	45	645	45	0	45	45	45	320
9/1/2010	9/30/2010	350	145	65	665	65	0	65	65	65	340

Notes:
[1] Regulated nonflood releases from Friant Dam and deliveries by the Delta-Mendota Canal, exclusive of agricultural return flows and natural drainage.
[2] No Water Year 2010 Interim Flows during this period.
[3] Assumes up to 230 cubic feet per second diverted by instream water right holders, consistent with Exhibit B of the Settlement.
[4] Assumes up to 200 cubic feet per second lost through infiltration, consistent with Exhibit B of the Settlement.
[5] Assumes up to 2,621 cubic feet per second maximum diversion capacity to water right holders in the Mendota Pool.
[6] Assumes up to 600 cubic feet per second released to Reach 3 from Mendota Pool for diversion to Arroyo Canal.
[7] Assumes up to 25 percent of flow lost through infiltration downstream from Sack Dam, and up to 80 cubic feet per second diverted at wildlife refuges.
[8] Assumes accretions from Mud and Salt sloughs in Reach 5, consistent with Exhibit B of the Settlement.

3.2 Millerton Daily Operation Modeling

The SJRRP is using the monthly time step model CalSim to model basic water operations anticipated under the Proposed Action to determine how well they meet the Water Management Goal. Once basic water operations are determined, they must undergo additional analysis to determine how well they meet the Restoration Goal, and to support evaluation of potential impacts from the WY 2010 Interim Flows EA/IS. Much of this further analysis requires estimates of water operations on a shorter, daily time step.

A transparent, consistent, repeatable process to estimate a reasonable set of daily water operations that maintain the overall water operational constraints from the CalSim results is required to perform the analysis, and facilitate comparisons between alternatives and impact analyses.

The USJRBSI developed an Excel – based spreadsheet to disaggregate monthly CalSim water operations into a daily set of water operations for use in further analysis. These daily values are not intended to represent proposed or optimal daily water operations. Instead, USJRBSI analyses represent a potential set of daily water operational values that can be used for further analysis in support of comparisons between alternatives.

The baseline CalSim simulation from the USJRBSI includes the Settlement flow schedule. This simulation was selected for use in the evaluation, modification, and verification of the spreadsheet for use in SJRRP modeling scheme. All values, tables, and figures presented in this report are based on this CalSim simulation and are presented here for example purposes only, and may not represent the final values used in the analysis.

Water operations data from 1983 of this simulation were used to generate examples of the procedure followed for each year. This year was chosen because it is a very wet year, and includes flood releases from Millerton Lake.

3.2.1 Model Description

The spreadsheet generates the daily set of water operations using a two-step process:

- Monthly to daily interpolation process
- Simplified daily rainflood operation

Initial Restoration Modifications

As used in the USJRBSI, the spreadsheet includes the capability to handle the potential Fine Gold and Temperance Flat reservoirs evaluated as part of that project. Although these reservoirs can be "turned off" in the tool to allow evaluations of Millerton Lake alone, the spreadsheet was extremely large and complex with long recalculation times, and greatly increased chance of error. The spreadsheet was modified to remove the Fine Gold and Temperance Flat reservoirs.

A number of additional charts were added to allow the spreadsheet to verify that the final computed daily values were comparable to monthly CalSim input values. Figure 3-9 is an example of a chart showing how the CalSim monthly values correspond to the final daily values.

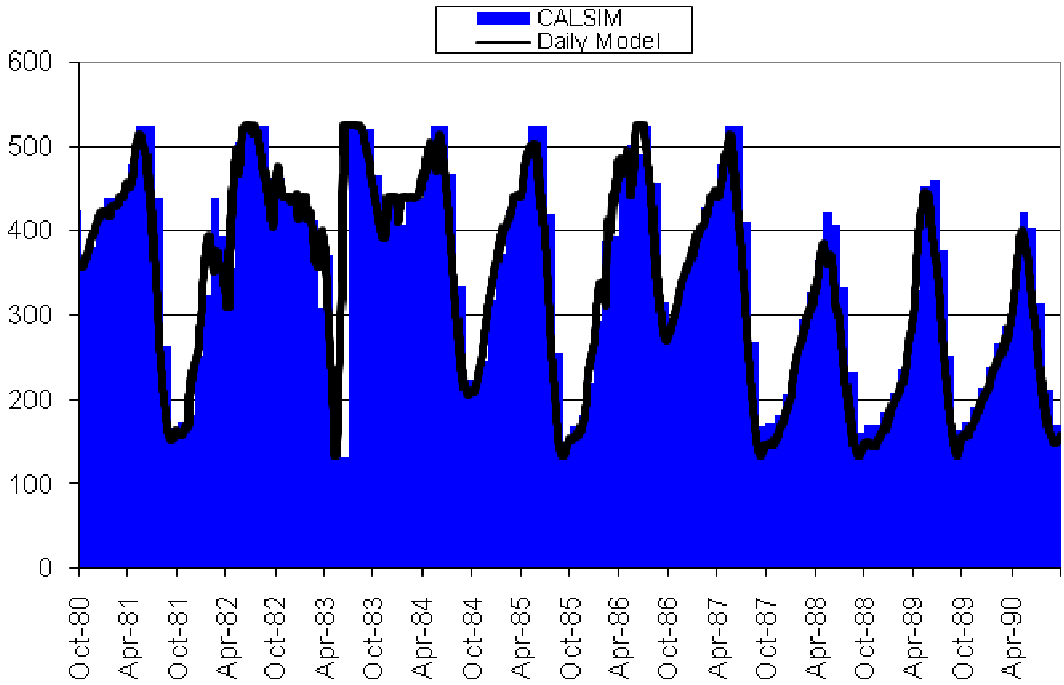


Figure 3-9.
Example Millerton Lake Storage Operation Monthly – to – Daily Comparision

Figure 3-10 three example charts comparing the San Joaquin River release component computation and the final total San Joaquin River release between the CalSim monthly values and the final daily values. There are simular charts for the Friant-Kern Canal and Madera Canal diversions.

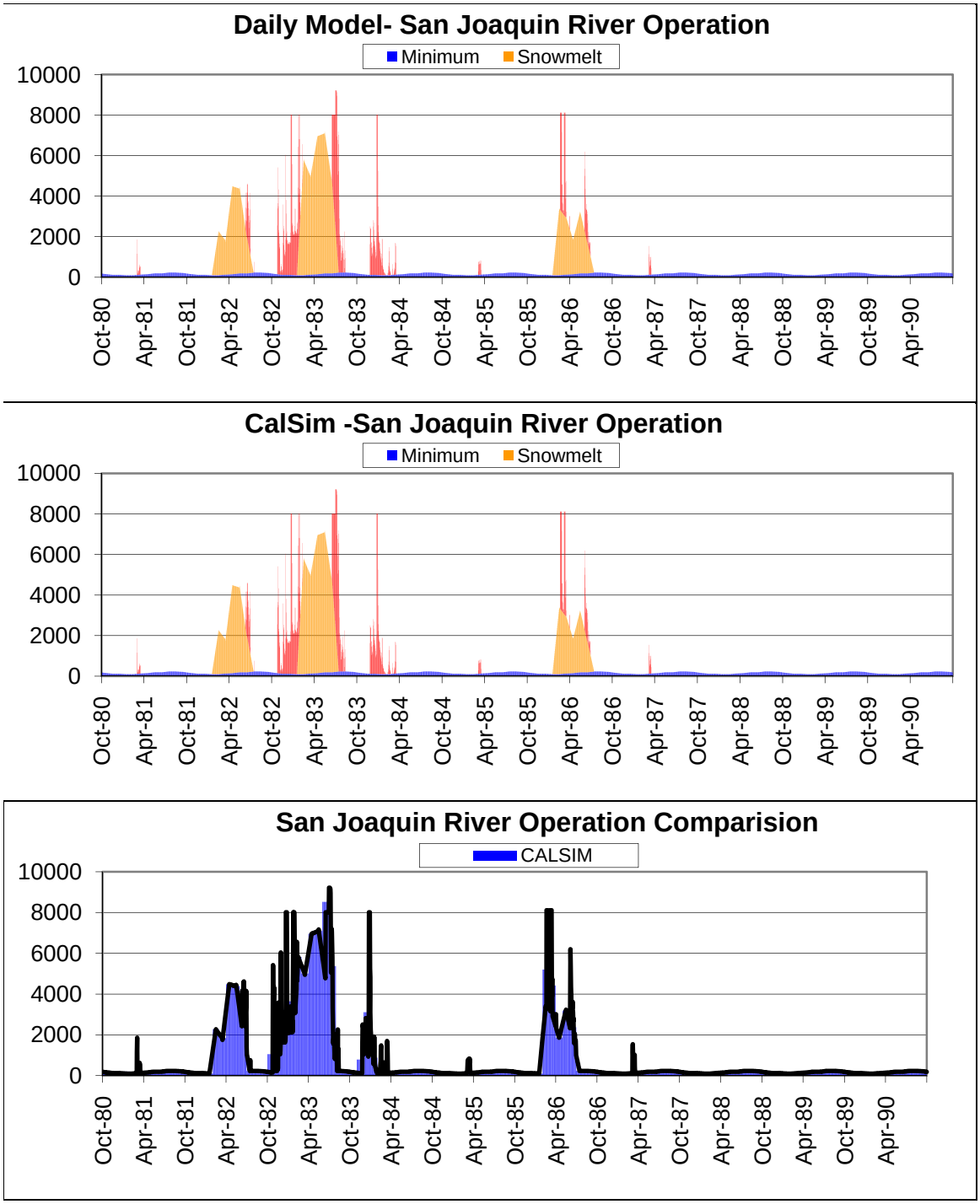


Figure 3-10.
Example Millerton Release to the San Joaquin River Monthly – to – Daily Comparison

3.2.2 Model Assumptions

Monthly to Daily Interpolation Process

Simplified daily rainflood operations require boundary or input data on a daily basis. These data include the following:

- San Joaquin River inflow to Millerton Lake
- Madera Canal diversion for delivery
- Friant-Kern Canal delivery
- San Joaquin River minimum required release (Settlement flow schedule)
- San Joaquin River snowmelt release
- Millerton Lake evaporation
- Mammoth Pool storage

Initial boundary condition data are extracted from the appropriate CalSim simulation. These CalSim results are converted from a monthly rate into a daily rate through dividing the volume by the number of the days in the month. It is assumed that this daily rate is the rate on the 15th of each month and that the final daily rate changes linearly from the middle of one month to the middle of the next. The linear change prevents a stair-step-type operation wherein the rate changes dramatically at the beginning of each month. The change for the second half of the month, from the 16th to the end of the month, is adjusted to account for the different number of days in this half of the different months.

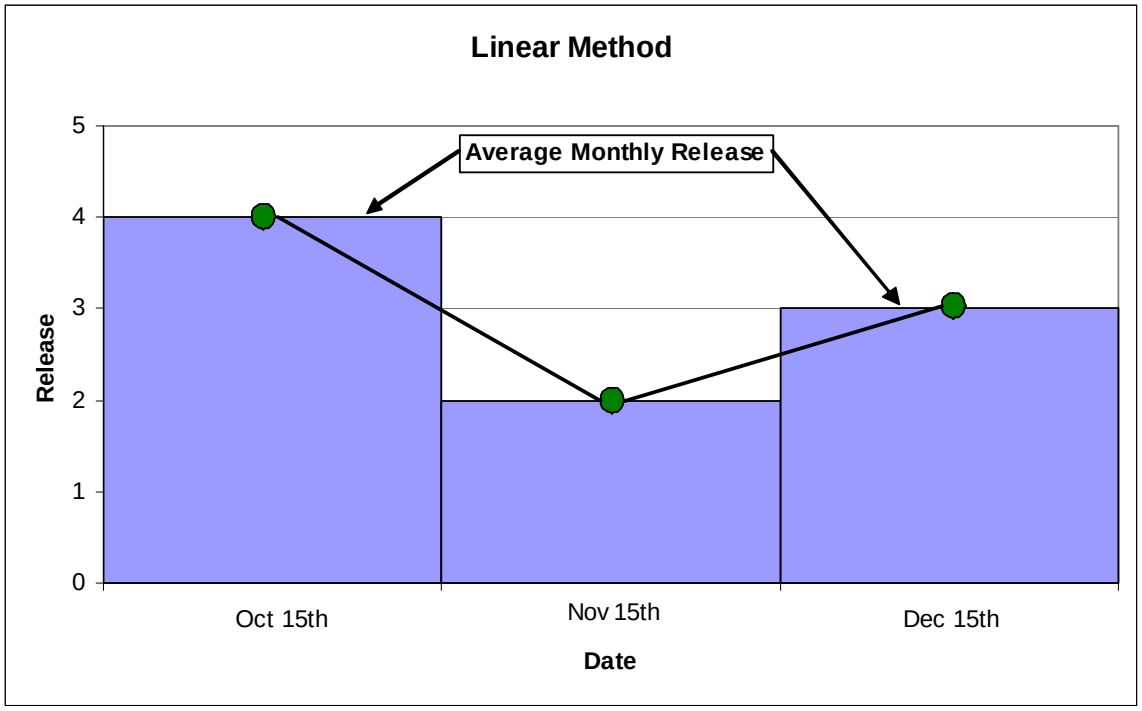


Figure 3-11.
Conceptual Depiction of Monthly to Daily Interpolation

It is recognized that this method sets the minimum and peak daily values at the mean monthly value and may not capture the expected minimum and peak daily values; however, this method provides a reasonable level of detail for the comparative evaluation of alternatives.

San Joaquin River Inflow to Millerton Lake. The tool uses daily Millerton Lake inflows from the USAN Model. As mentioned, the USAN model is an operations model of the upper San Joaquin River basin typically used to predict inflows to Millerton Lake. These daily inflows were summed and used to generate monthly inflows for use in CalSim. Since daily inflows are available, no interpolation from monthly to daily values is required.

Madera Canal Diversion. The Madera Canal diversion in CalSim includes both the actual diversion for delivery, and diversion of flood control releases to protect the San Joaquin River. The interpolation process is only performed on the Madera Canal diversion for delivery. Diversions of flood control releases are recomputed in the simplified daily rain-flood operation.

Friant-Kern Canal Diversion. The Friant-Kern Canal in CalSim only diverts for delivery; there is no flood release component. The simplified daily rain-flood operation may add flood releases to the Friant-Kern Canal.

Snowmelt Flood Control Release. The snowmelt flood release in CalSim is determined by predicting the expected inflows to Millerton Lake from February 1 to June 30, subtracting the expected diversions for the same period, and releasing the difference over the period in an attempt to minimize spills from the reservoir. CalSim monthly values are disaggregated using the interpolation process.

San Joaquin River Minimum Flow Release. San Joaquin River minimum flow requirements are specified as mean monthly values for use by CalSim. These CalSim monthly values are disaggregated using the interpolation procedure.

Millerton Evaporation. Millerton evaporation is computed in CalSim based on an assumed evaporation rate and mean monthly surface area. These CalSim monthly values are disaggregated using the interpolation procedure.

Mammoth Pool Storage. Flood control operations at Millerton Lake can take credit for up to 85 TAF of available storage capacity in the upstream Mammoth Pool Reservoir. Daily Mammoth Pool storage is obtained from the USAN model and input into the spreadsheet as a data time series (TS) to allow the spreadsheet to compute the available credit space at Mammoth Pool.

Simplified Daily Rain-flood Operation

Rain-flood routing is performed assuming that the total controlled release from Millerton Lake is the sum of all the nonrain-flood releases (Madera Canal delivery, Friant-Kern Canal delivery, San Joaquin River minimum flow requirement, and San Joaquin River snowmelt flood release).

If making this release would reduce Millerton Lake storage below a minimum allowable storage of 135 TAF, then the total release is decreased to leave Millerton Lake storage at the minimum value. The reduction is distributed to the Madera Canal, Friant-Kern Canal, and San Joaquin controlled release based on their percentage of the total controlled release.

To simulate daily rain-flood operations, the tool calculates daily required flood storage space based on the reservoir operation curve and any available credit space in the upstream Mammoth Pool. The daily required flood storage space in Millerton Lake is subtracted from the maximum Millerton Lake storage to get daily maximum storage. Rainflood releases are made to prevent Millerton Lake storage from exceeding this daily maximum storage. The rainflood release is then allocated to the following:

- Unused capacity in the Madera Canal (up to 100 cfs or 7.69 percent of the total rain-flood release in February through October, none in November through January)
- Unused capacity in the Friant-Kern Canal (up to 1,200 cfs)
- Available channel capacity in the San Joaquin River (up to 8,000 cfs total release to the river)
- Millerton Lake flood control storage encroachment, up to the maximum reservoir storage
- Release to the San Joaquin River

The flood space is evacuated, at a maximum rate of 8,000 cfs, as soon as possible after reservoir inflows decrease.

All releases to the San Joaquin River are made through the dam outlets, unless the reservoir is full and spilling. When this occurs, the spill is assumed to be released to the San Joaquin River over the spillway.

San Joaquin River Release

Figure 3-12 is an example of the results of the routing process for Millerton Lake operations and releases to the San Joaquin River release.

During the January-through-March period, the flood control storage limit fluctuates because of variable flood control storage in the upstream Mammoth Pool. During this period, final release is above the interpolated release, corresponding to short-term peaks in the inflow.

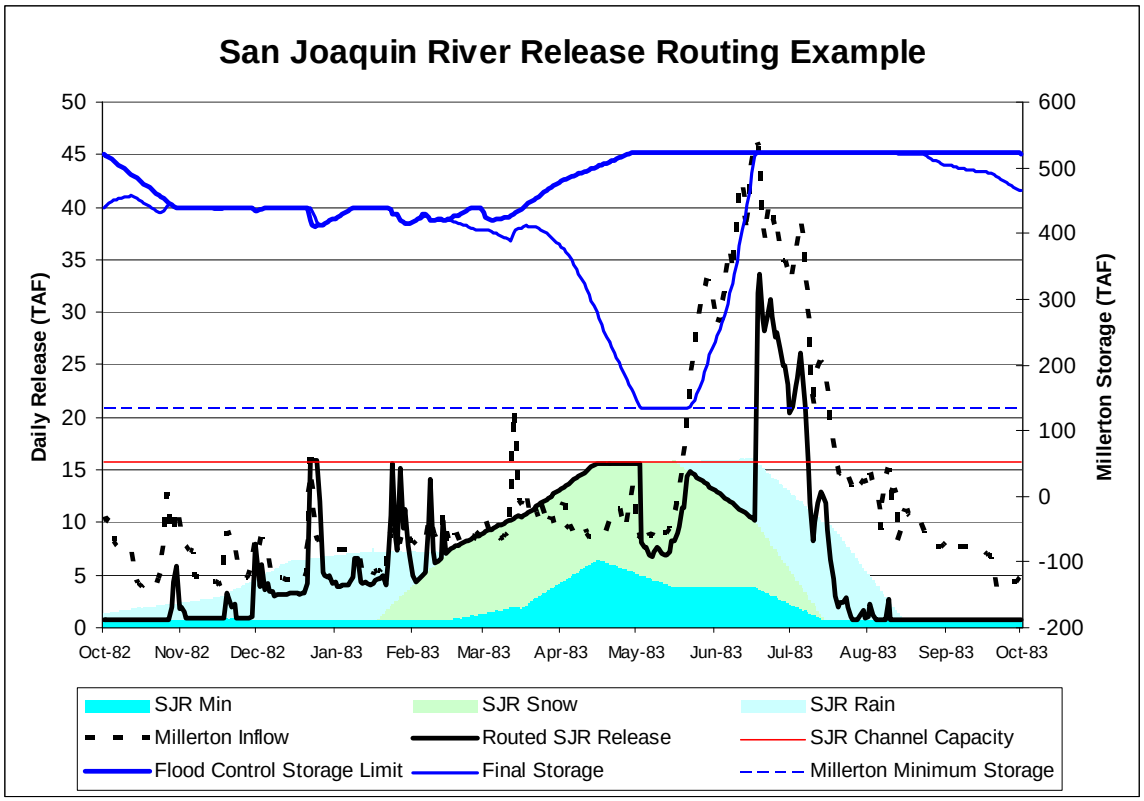


Figure 3-12.
San Joaquin River Release Routing

In the January –to – March time period, the daily release to the San Joaquin River peaks at the 8,000 cfs channel capacity limit (15.84 TAF/day). The daily release during this period was at the San Joaquin River channel capacity limit of 8,000 cfs because sufficient storage was available in Millerton Lake to capture additional flood inflows. In late June through early July, the daily release to the San Joaquin River peaks at about 36.6 TAF/day (18,950 cfs), or more than double the San Joaquin River channel capacity. This resulted because Millerton Lake had filled to capacity and was unable to store additional inflows in excess of downstream channel capacity. During this time, the CalSim monthly release to the San Joaquin River was at channel capacity. This discrepancy is caused by the timing of when the reservoir fills and the duration of the flood control release on a daily basis versus a monthly basis.

Actual storage drops from the flood control level in April to minimum storage in May. It then increases to maximum storage by the end of June. This variability in Millerton Lake storage is due to the relatively small storage capacity of Millerton Lake relative to inflow volume, which results in aggressive operations to maximize water supply.

In May, the routed San Joaquin River release drops below the linear interpolated release. This was because Millerton Lake storage reached the minimum allowable, and releases were cut back to maintain the minimum pool.

Madera Canal Diversion Routing

Figure 3-13 is an example of the results of the routing process for Millerton Lake operations and diversions to the Madera Canal.

As can be seen in the figure, flood control releases to the Madera Canal in late October and the February-through-April period are similar to the timing of the flood control releases to the San Joaquin River.

In May, the routed Madera Canal diversion drops below the linear interpolated diversion, which implies a cutback in delivery through the Madera Canal. This was because Millerton Reservoir reached minimum allowable storage, and diversions were cut back to maintain the minimum pool.

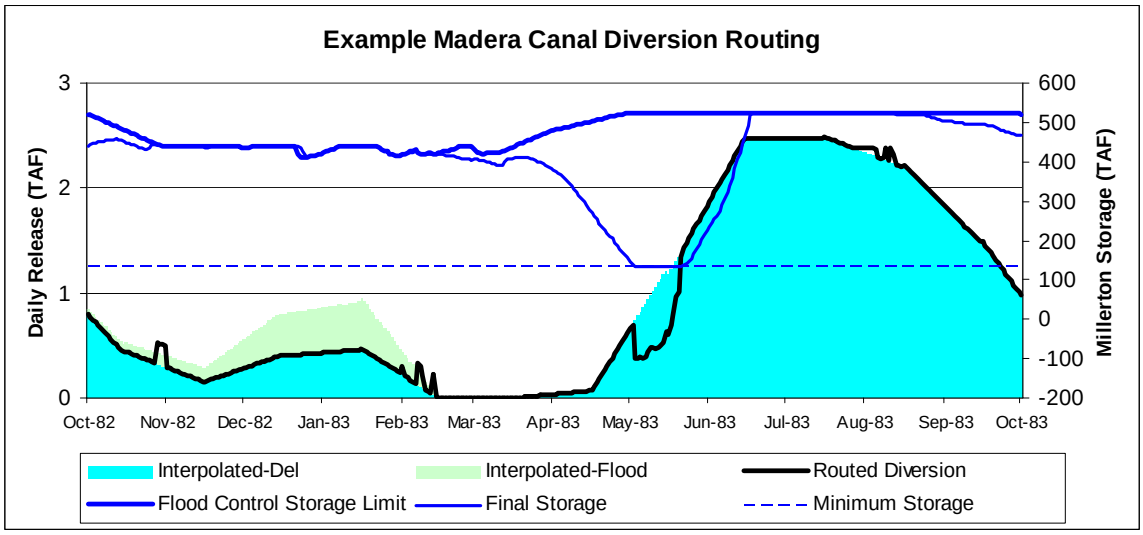


Figure 3-13.
Madera Canal Diversions Routing

Friant-Kern Diversion Routing

Figure 3-14 is an example of the results of the routing process for Millerton Lake operations and diversions to the Friant-Kern Canal.

The operation of the Friant-Kern Canal is very similar to the Madera Canal, with flood control releases during early winter and the same decrease in May when Millerton Lake was at minimum storage.

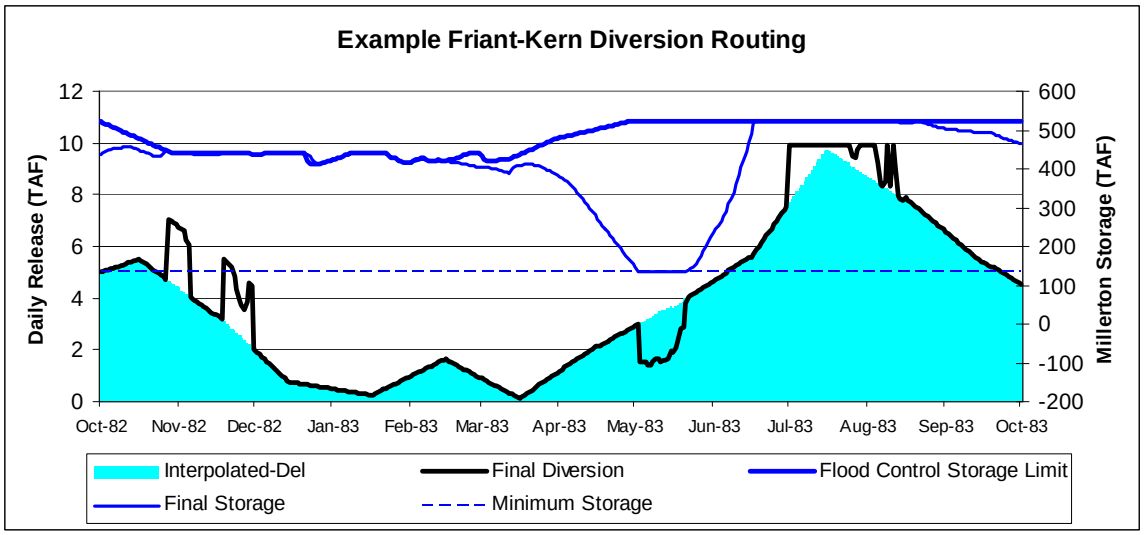


Figure 3-14.
Friant-Kern Canal Diversion Routing

3.2.3 Consistency with CalSim results

Final daily water operations from the tool, while not expected to exactly match the CalSim monthly results, are expected to be within the range of water operations from the CalSim simulation. The total monthly inflow from this tool and the CalSim simulation are the same since the CalSim inflows were computed by summing the USAN daily inflow values used in the example. This implies that if the storage operations are similar, the overall operations must be similar and storage can be used to evaluate how well the daily operations from the tool fall within the range of water operations from CalSim. Figures 3-15 and 3-16 show the comparison of the CalSim monthly storage and simulated daily storage operations for the period of record, and for example year 1983, respectively.

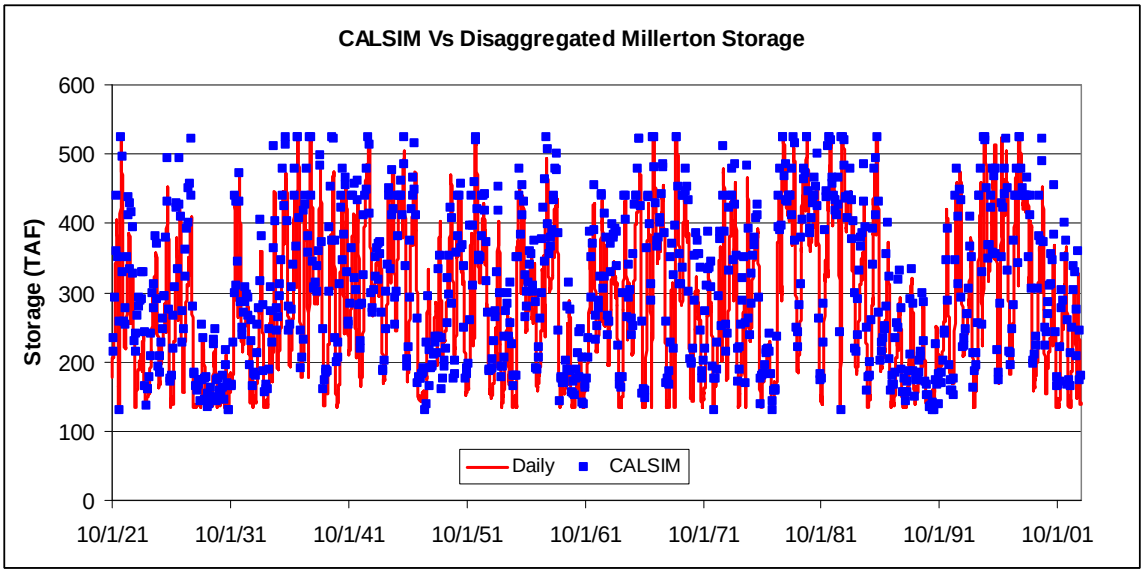


Figure 3-15.
Period of Record Comparison of Daily Tool and CalSim Simulated Millerton Lake Storage

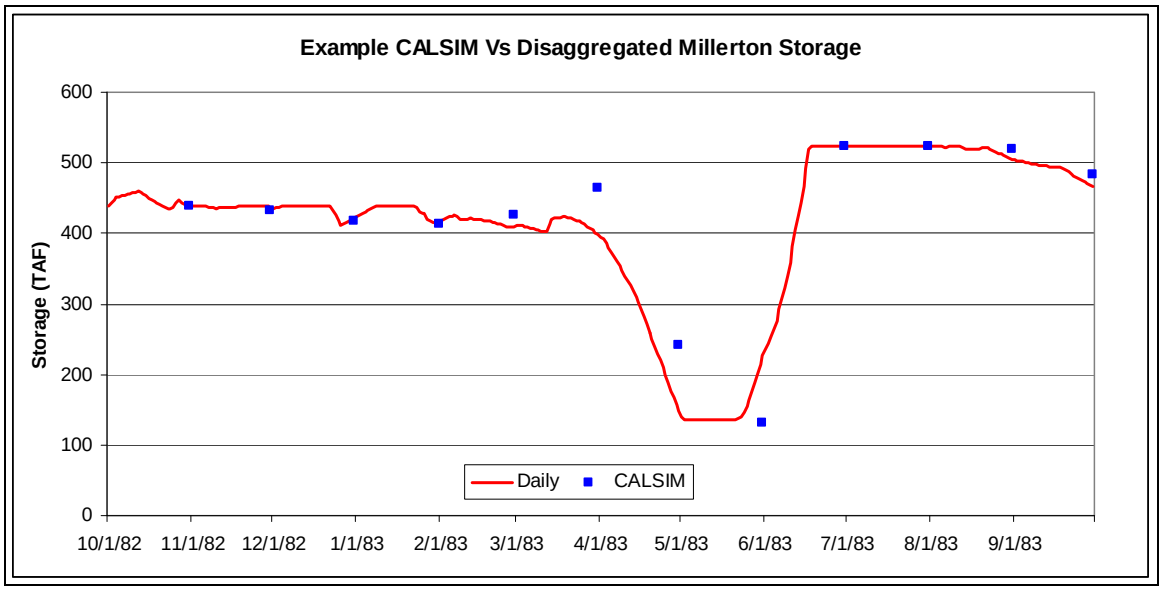


Figure 3-16.
Example 1983 Comparison of Daily Tool and CalSim Simulated Millerton Lake Storage

Figure 3-17 is an example comparison of the daily tool and CalSim simulated San Joaquin River releases.

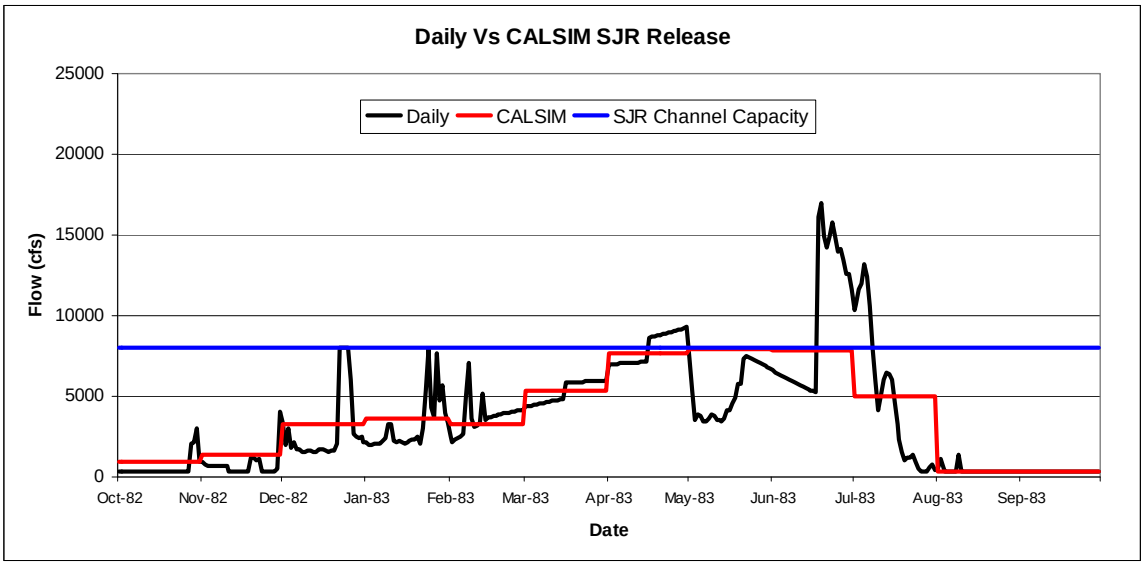


Figure 3-17.
Example Daily Tool vs. CalSim San Joaquin River Release

The general shape of the curves is similar, except for May through July. This discrepancy is likely due to differences between monthly and daily time steps of reservoir storage and simulated flows. Differences in reservoir storage and simulated flows cause different operational responses to monthly operational triggers.

3.2.4 Comparison with Historic Hydrology

As mentioned, the tool was used to develop daily flows from the baseline CalSim simulation from the USJRBSI. This CalSim simulation is a future level simulation using the Settlement hydrographs as minimum flows in the San Joaquin River.

These daily results were then compared to the historic Millerton Lake releases from 1974 to 2004. The magnitude of the flows cannot be compared because the historic data reflects different operational assumptions than in the CalSim simulation, especially demands and minimum San Joaquin River flow requirements. The comparison evaluates whether general patterns in the disaggregated data appear reasonable for use in the project. Figure 3-18 summarizes comparison results for 1974 to 2007.

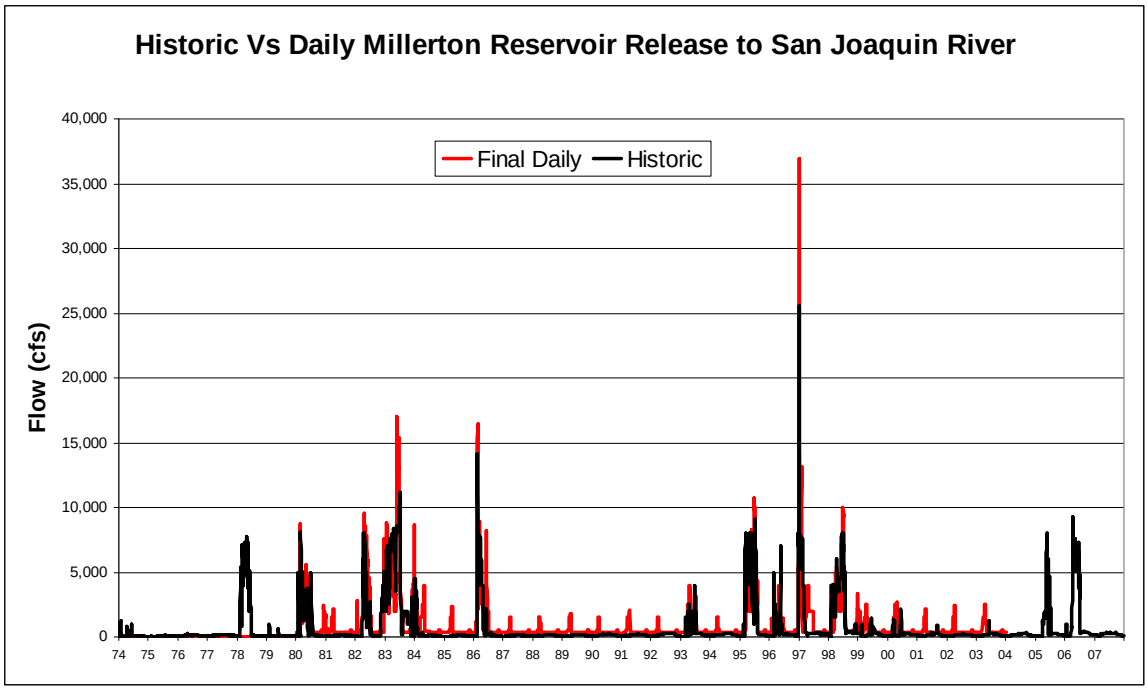


Figure 3-18.
Historic vs. Disaggregated San Joaquin River Flow

As can be seen in the figure, the procedure resulted in a set of daily flows that follows the general flow regime of the San Joaquin River well. The individual high flood peaks appear to be higher in the figure. This is not expected in real-time operations because the lower storages should imply that the available flood control space at any given time is equal to or greater than without the project. It is important to note that the disaggregation does not use historical inflows, diversions, or releases to the San Joaquin River, and flow magnitudes cannot be directly compared.

The increase in small flood peaks is due to the increase in the San Joaquin River minimum flow requirement from the Settlement flow schedule over historical values.

Figure 3-19 compares the results of the disaggregation process with the CalSim San Joaquin River releases. The figure shows that the overall patterns match up well. The higher peak flows in the daily results are due to the difference between using daily and mean monthly values. Averaging the peak flows over a monthly time step in CalSim smoothes out the flow peaks.

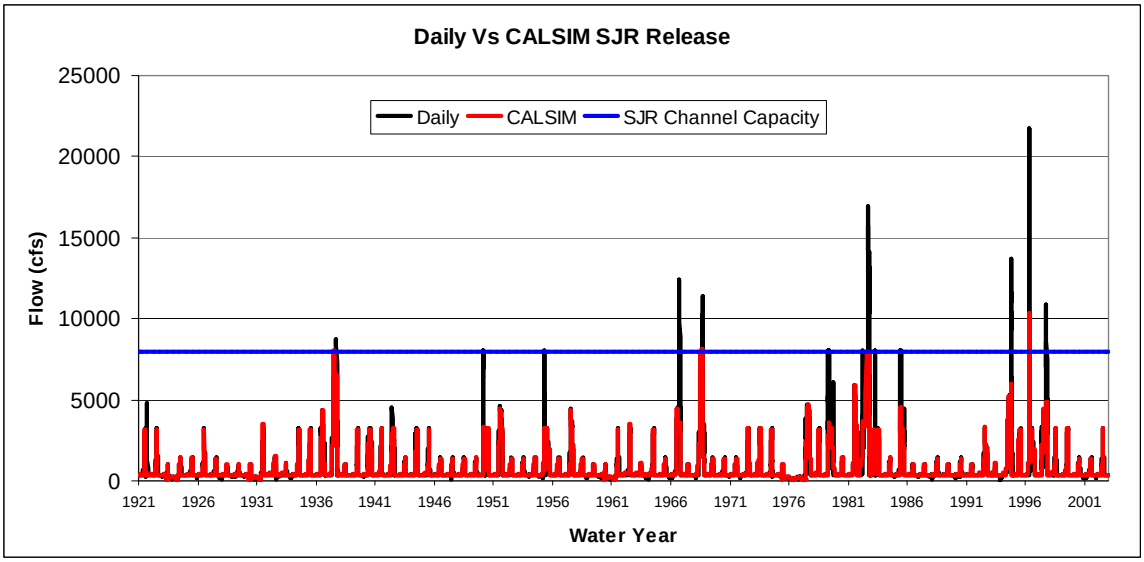


Figure 3-19.
Disaggregated vs. CalSim San Joaquin River Flow

3.2.5 Output Description

The primary output from this model is the daily Millerton Reservoir storage, diversion, and San Joaquin River release values for use in other models and analysis. This is simply a set of daily storages, diversions, and releases for October 1, 1921, to September 30, 2003.

4.0 Water Quality Modeling

This section documents the modeling tools and modeling analysis performed to provide data on water quality in the study area. The areas and water quality parameters modeled include the following:

- Millerton Lake – temperature
- San Joaquin River from Millerton Lake to the Merced River – temperature
- Lower San Joaquin River at Vernalis – salinity
- Delta - salinity

4.1 Millerton Lake Temperature Modeling

The WY 2010 Interim Flows include increased minimum flow requirements in the San Joaquin River. These requirements will result in changes to the water operations of Millerton Lake that may affect the temperature of the water released to the San Joaquin River, and the subsequent temperatures in the downstream river reaches. The Millerton Lake temperature model provides a method to evaluate the potential change in Millerton release temperatures.

The Millerton Lake temperature model was originally developed for Reclamation during the *NRDC et al. v. Kirk Rodgers et al.* litigation period and has since been updated and modified to include the capability to model temperature control devices (TCD) on the Madera Canal and Friant-Kern Canal diversions as well as the San Joaquin River outlets. Detailed documentation of the model development, data collection, and calibration can be found in the Reclamation 2008 Reservoir Operations Technical Report (2008).

Model Description

The Millerton Lake temperature model is based on the W2 modeling platform.

W2 is a two-dimensional (longitudinal and vertical) water quality and hydrodynamic model for rivers, estuaries, lakes, reservoirs, and river basin systems. W2 consists of directly coupled hydrodynamic and water quality transport models. Developed for reservoirs and narrow, stratified estuaries. W2's capabilities include longitudinal and vertical hydrodynamics and water quality in stratified and nonstratified systems; multiple algae, epiphyton/periphyton, zooplankton, macrophyte, carbonaceous biochemical oxygen demand (CBOD), and generic water quality groups; internal dynamic pipe/culvert modeling; hydraulic structure (weirs, spillways) algorithms, including submerged and two-way flow over submerged hydraulic structures; and a dynamic shading algorithm based on topographic and vegetative cover. For this application, only temperature is modeled.

Meteorological Data

Meteorological input data used in the Millerton Lake temperature model include air temperature, dew point, wind speed, wind direction, cloud cover, and solar radiation. The main source of data is historical observations recorded at the Fresno Airport weather station, the nearest representative long-term weather station to the project area (approximately 15 miles southwest of Millerton Lake).

Bathymetry

Bathymetry data for the reservoir include light detection and ranging elevation data from a 2001 aerial survey of the study area for ground surface elevations above the Millerton Lake water level (about 500 feet) during the period of the aerial survey, and bathymetric data for Millerton Lake based on a recent sonar survey. The Millerton Lake bathymetric data used in the temperature model are consistent with updated data used in the Reclamation temperature model of Millerton Lake.

Inflow Temperatures

At Kerckhoff Lake, on the San Joaquin River upstream of Millerton Lake, much from the river's flow is diverted into a tunnel and through the Kerckhoff and Kerckhoff No. 2 powerhouses before it returns to Millerton Lake. The remaining San Joaquin River flow continues down the river channel into Millerton Lake. The water flow in the San Joaquin River channel is subject to heating that the water flow in the tunnel bypasses. This results in the temperature of the San Joaquin River inflow typically higher than the temperature of the water from the powerhouses.

San Joaquin River temperature data below Kerckhoff Lake from Pacific Gas and Electric (PG&E) were used to develop the San Joaquin River inflow temperature data. Temperature data at Kerckhoff Lake were used to develop the powerhouse inflow temperature data. Missing data were estimated using an algorithm that attempts to match temperature data across various year– types.

Model Calibration

Initial model calibration compared simulated results to measured temperature profiles 0.53 kilometers from the dam in 2004 and 2005. The model was later recalibrated using Reclamation-measured temperature profiles and release temperatures gathered from 2004 through 2006. The final calibration produced results with differences of less than 1 degree centigrade (°C) from the measured profile and release temperatures. An absolute mean error of less than 1°C is often used as a basis for determining an acceptable calibration (Cole and Wells 2006). Based on a review of the calibration methods and results, Reclamation approved the model for use in the USJRBSI.

4.1.1 Modeling Approach and Assumptions

The model was applied to the different alternatives in the project by varying the water operation boundary conditions as appropriate for each alternative. Other boundary conditions such as meteorology and inflow temperatures remain constant between alternatives.

Period of Record

The desired simulation period for WY 2010 Interim Flow use is from 1980 to 2003 with 1-day flow and 6-hour temperature time steps to allow analysis of diurnal temperature fluctuations. The actual period simulated in the model is 1977 to 2003 on a 1-hour time step. The initial 3 years (1977 –1979) are a "warm-up period" to capture appropriate antecedent conditions in the lake. The hourly outputs are averaged over the final desired flow and temperature time steps after model execution has been completed.

Water Operations Data

The Millerton Lake temperature model uses daily water operations data for San Joaquin River inflow, Friant-Kern Canal and Madera Canal diversions, and controlled release and spill to the San Joaquin River.

The San Joaquin River inflows are from the USAN model. The USAN model is a daily operational model of the San Joaquin River system upstream from Millerton Lake. These daily flows are also used to define the monthly Millerton Lake inflows for the CalSim water operations model that is used to define the overall Millerton Lake water operations boundaries.

The Millerton Lake diversions to the Friant-Kern and Madera canals and the releases to the San Joaquin River come from a daily disaggregation process applied to CalSim monthly TS data. This process is described in greater detail in Section 3.2.

4.1.2 Output Description

The Millerton Lake temperature model simulates the reservoir temperature profile, the temperature of the diversions to the Friant-Kern and Madera canals, and the release to the San Joaquin River.

Output data for the No-Action and Proposed Action simulations are included in Attachment 2, Water Quality Modeling Results.

The outputs included are as follows:

- San Joaquin River release temperature
- Friant Kern Canal diversion temperature
- Madera Canal diversion temperature
- Cold-water pool volume less than 52 degrees Fahrenheit (°F) and less than 60° F

Results have been summarized as annual temperature profiles; these are plots of the mean temperature for each day of the year. The plots also include the 10, 25, 50 (median), 75, and 90 percent exceedence temperature for each day to indicate the variation from year to year. Figure 4-1 is an example of the plot format.

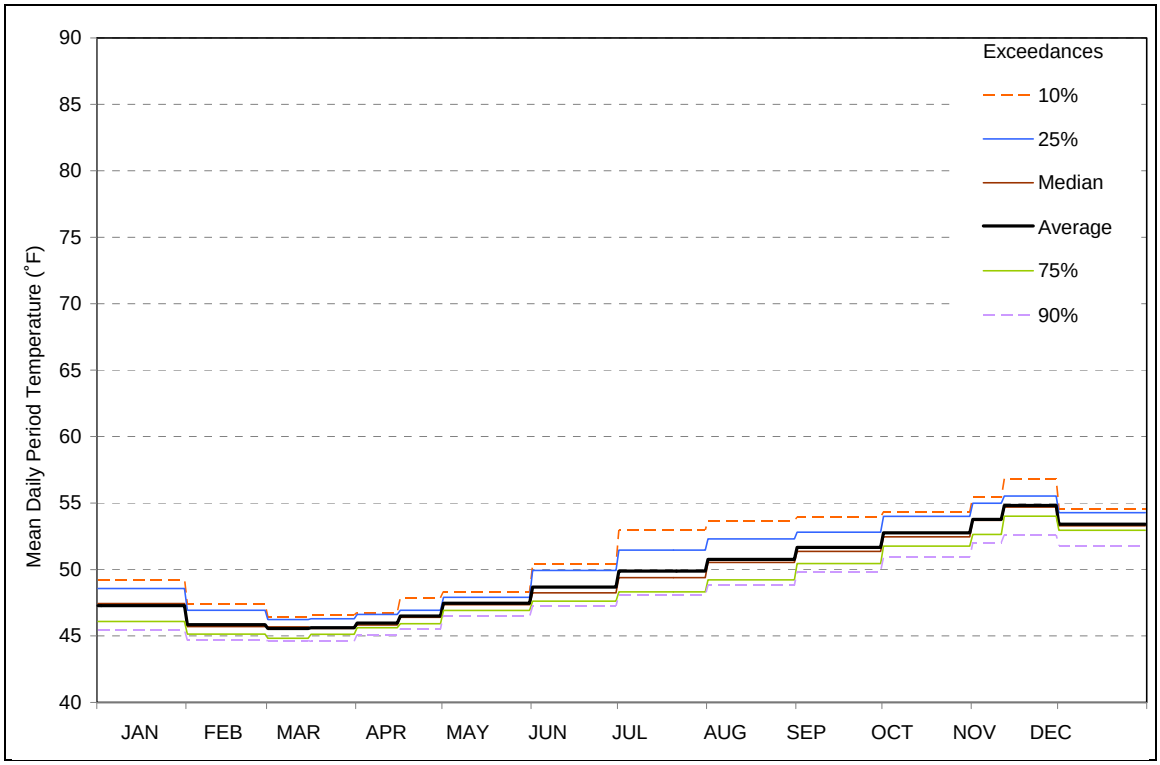


Figure 4-1.
San Joaquin River Release Temperature Annual Profile
Existing Level – Baseline Condition

4.2 San Joaquin River Temperature Modeling

Temperatures in the San Joaquin River downstream from Millerton Lake are critical to the success of the SJRRP. The San Joaquin River Temperature Model (SJR5Q) provides a method to evaluate the temperatures in this reach of the river.

The SJRRP includes increased minimum flow requirements in the San Joaquin River. These requirements will result in changes to the water operations of Millerton Lake that may affect the temperature of the water released to the San Joaquin River, and subsequent temperatures in the downstream river reaches. SJR5Q provides a method to evaluate the temperatures in the San Joaquin River downstream of Millerton Lake.

4.2.1 Model Description

SJR5Q covers the San Joaquin River downstream from Millerton Lake to the confluence with the Merced River. The model was developed using the USACE HEC-5Q modeling tool, which can be used for simulating water flow and quality of reservoirs and streams. SJR5Q uses the river modeling capabilities of HEC-5Q to model both flow and temperature in the San Joaquin River. The HEC-5Q users manual (HEC 2001) provides a more complete description of the water quality relationships included in the model.

Model Representation of the Physical System

SJR5Q represents the San Joaquin River as a network of discrete segments (reaches and/or layers, respectively) for application of HEC-5 for flow simulation, and HEC-5Q for temperature simulation. Within this network, control points (CP) are designated to represent selected stream locations where flow, elevations, and volumes are computed. In HEC-5, flows and other hydraulic information are computed at each CP. Figure 4-2 is a schematic of the HEC-5 representation of the San Joaquin River from Millerton Lake to the confluence with the Merced River.

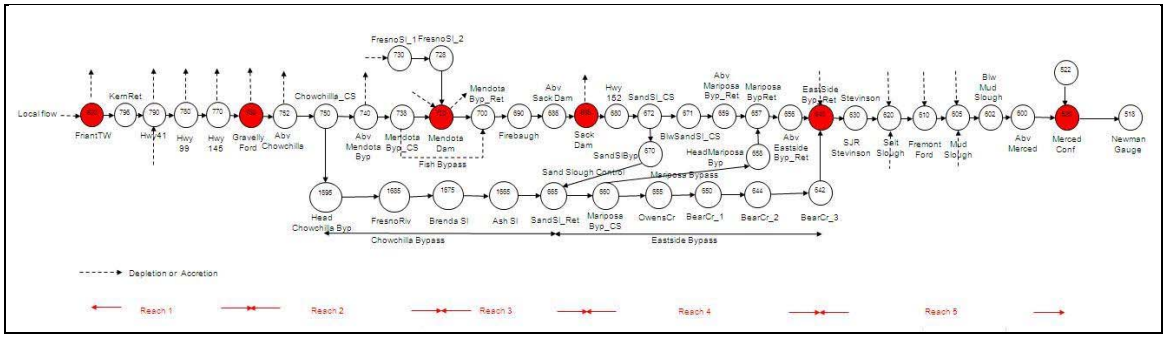


Figure 4-2.
SJR5Q Model Schematic

Model Representation of Streams

River or stream reaches are represented conceptually as a linear network of segments or volume elements. The length, width, cross-sectional area and a flow-versus-depth relationship characterize each element. A cubic polynomial curve fit of all input data provides a continuous relationship between flow and the hydraulic parameter defining each cross section. Cross sections are defined at all CPs and at intermediate locations where data are available. Element lengths typically range from a few hundred feet to several thousand feet.

The flow-versus-depth relation is developed external to the river temperature model using available cross-section data and appropriate hydraulic computations. For the San Joaquin River and bypasses, the USACE Comprehensive Study data set was used (USACE 1999). This detailed data set incorporates all control structures, bridge restrictions, and critical sections that control or restrict flow.

Stream Accretions and Depletions

HEC-5Q requires that flow rates and water quality be defined for all inflows. Available data were evaluated and processed to define all hydrologic inputs for an evaluation period of 1980 through 2003. The following flow assumptions are used in the San Joaquin River Temperature Model:

- **San Joaquin River above Mendota Pool** – Partial flow records for tributary stream (Cottonwood and Little Dry Creek) and river gauge locations (Friant Dam, Donny Bridge, Skaggs Bridge, and Gravelly Ford) were evaluated to develop estimates of time-dependant inflows and seasonal depletions above Gravelly Ford. Total depletions were distributed within the model based on gage data tendencies. Diversions to the Chowchilla Bypass are computed within the model as a function of river flow.

- **Mendota Pool to Sack Dam** – Seasonal diversions from Mendota Pool and at Sack Dam (Arroyo Canal) were developed from available flow records (e.g., San Joaquin River at Mendota 1999 – 2006, U.S. Geological Survey (USGS)). These demand assumptions, plus observed James Bypass (USGS) flows and computed San Joaquin River inflow were used to compute the required DMC flows by mass balance. The mass balance computation assumed a January 1 through February 15 maintenance drawdown of the Mendota Pool.

- **San Joaquin River below Sack Dam** – Observed data at Stevinson (USGS), partial Bear Creek flow data, and computed flow to the Eastside Bypass and below Sac Dam were used to compute net accretions/depletions considering flow attenuation consistent with routing coefficients used in the model.

- **San Joaquin River between Stevinson and the Merced River** – Flow records for the San Joaquin River at Stevinson and Newman, Mud and Salt sloughs, and the Merced River at Stevinson were used to compute net accretions and depletions for this section of the river. Flows from the two sloughs and other accretions

dominate temperatures in this area during low San Joaquin River flows and are an important influence on temperature at moderate river flows.

- **San Joaquin River and tributaries** – Major tributaries (Dry Creek on the Tuolumne and Merced) and net accretions and depletions were defined based on available gage data and flow attenuation consistent with routing coefficients used in the model.

Temperature Boundary Conditions

There is very limited availability of temperature data on accretions in this reach of the San Joaquin River. Historic temperature data were used to the maximum extent possible to develop relationships, which were then used to fill in the data gaps.

Meteorological Data

Hourly air temperature, wind speed, relative humidity, and cloud cover for each day is used to compute the average equilibrium temperature, surface heat exchange rate, solar radiation flux, and wind speed at 6-hour intervals for input to the river temperature model.

For temperature simulation using HEC-5Q, specification of water surface heat exchange data requires meteorological zones to be designated within the study area. Each CP within the system or subsystem used in temperature or water quality simulation must be associated with a defined meteorological zone.

Six meteorological zones were developed for the SJR5Q model. Heat exchange coefficients for each zone were computed to reflect typical environmental conditions. For sheltered stream sections, wind speed was reduced and shading was assumed to reflect riparian canopy conditions. Reduced wind speed decreases evaporative heat loss and results in higher equilibrium temperatures and lower heat exchange rates, and vice versa for increased wind speed. Shading reduces solar radiation, resulting in lower equilibrium temperatures and lower heat exchange rates.

The meteorological data collected as part of this project were used in determining the heat exchange adjustments to individual stream sections. Information pertaining to the meteorological zones and their descriptions can be found in RMA (2007).

Model Calibration

SJR5Q was calibrated for the period between 2000 and 2005 at nearly 15 different locations in the San Joaquin River downstream from Friant Dam. Calibration of the San Joaquin River model was performed by graphically and statistically comparing computed and observed river temperature TS. Different statistical measures such as Mean Error (bias), Mean Absolute Error, and Root Mean Squared Error were used to evaluate calibration results.

Figure 4-3 shows a graphical comparison between simulated temperature and observed temperature at Gravelly Ford. Simulated results are in good agreement with the observed values except during the summer. The difference can be attributed to a several cfs minimum flow assumption when there is no observed flow at this location (RMA 2007). A detailed documentation of the calibration methodology and results comparing simulated and observed temperatures at various locations in the San Joaquin River can be found in RMA (2007).

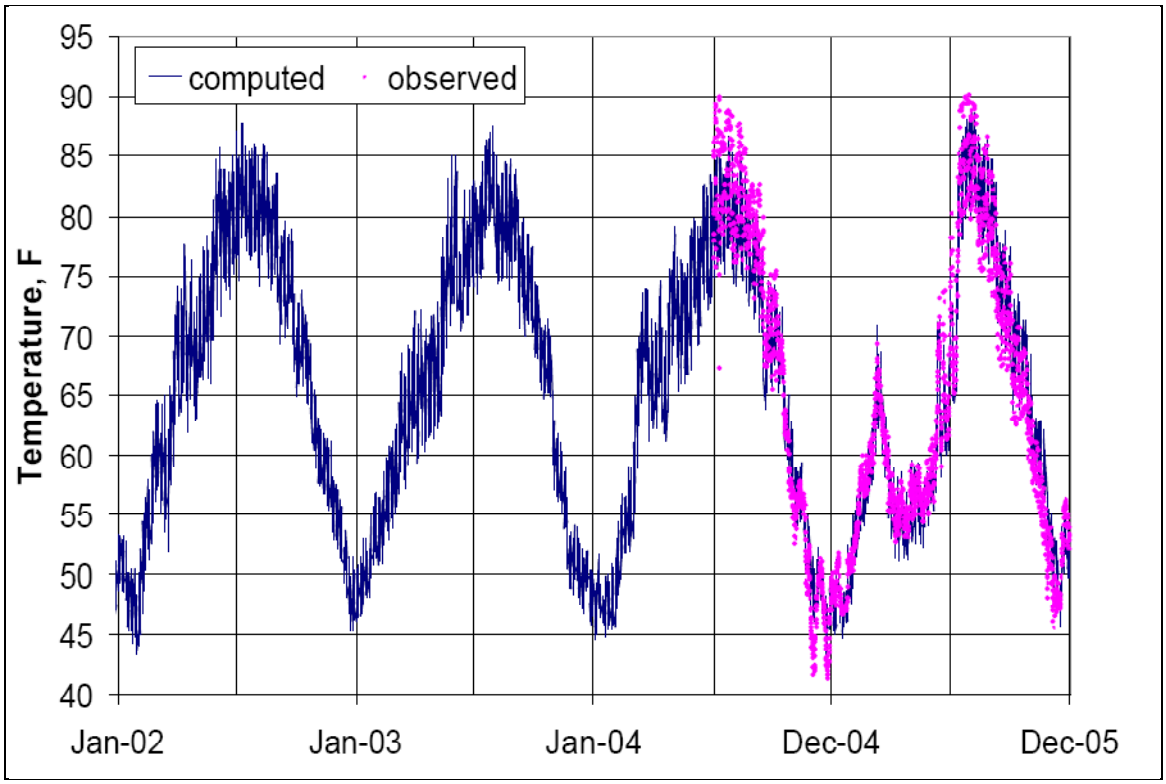


Figure 4-3.
Computed and Observed Temperatures at Gravelly Ford (39 miles downstream)

Flows simulated by SJR5Q are heavily dependent on the assumed accretions and depletions along the San Joaquin River. Figure 4-4 compares total accretions/depletions between CalSim and SJR5Q along the San Joaquin River from Millerton Lake to the Merced River. Because of the lack of resolution in CalSim, it was not possible to perform an acceptable comparison of the accretions/depletions between the values computed for SJR5Q and CalSim on a reach-by-reach basis.

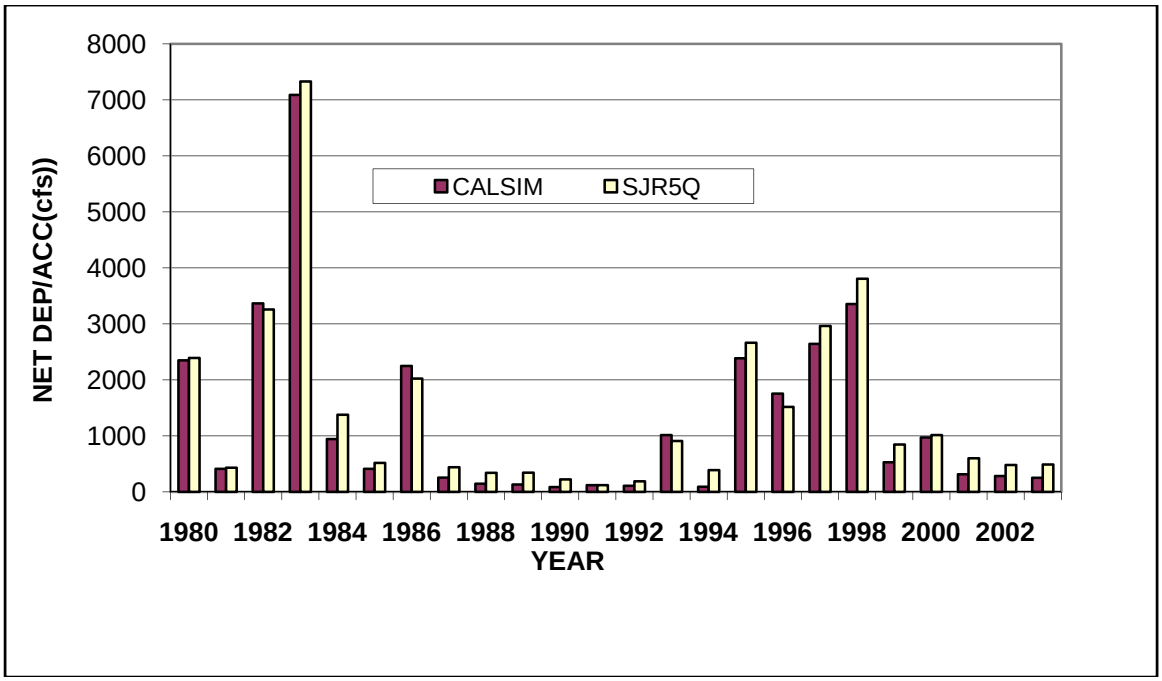


Figure 4-4.
Comparison of Net San Joaquin River Accretions/Depletions in CalSim and SJR5Q

4.2.2 Modeling Approach and Assumptions

The model was applied to the different alternatives in the project by varying the water operation boundary conditions, as appropriate, for each alternative. Other boundary conditions such as meteorology, and accretions/depletions remain constant between alternatives.

Period of Record

The desired simulation period for SJRRP use is from 1980 to 2003, with 1-day flow and 6-hour temperature time steps to allow analysis of diurnal temperature fluctuations. This is the simulation period for SJR5Q.

Millerton Lake Release Temperature

The Millerton Lake release temperature at a 6-hour time step for the entire simulation period is obtained from the Millerton Lake temperature model for each alternative and used as input to SJR5Q. The temperature is a weighted average of the Millerton Lake spill, if any, and outlet release temperatures.

Flow Routing

There are three major controlled diversions in the San Joaquin River between Friant Dam and the Merced River: the San Joaquin River diversion to the Chowchilla Bypass, the San Joaquin River diversion at Sand Slough to the Eastside Bypass, and the Eastside Bypass Diversion to the Mariposa Bypass.

Operational rules for flow routing are primarily modeled using routing procedures in the HEC model. However, certain rules are complicated at some decision points, and flow routing cannot be easily performed in SJR5Q.

Chowchilla Bypass Diversion The governing rules for the Chowchilla Control Structure operations are as follows:

- Leave the first 1,500 cfs in the San Joaquin River
- Divert the next 5,500 cfs into the Chowchilla Bypass
- Leave the next 1,000 cfs in the San Joaquin River for a total of 2,500 cfs
- If the inflow to the Mendota Pool from the James Bypass is greater than 2,000 cfs, the diversion to the Chowchilla Bypass is increased to maintain a flow of 4,500 cfs below the Mendota Pool
- At higher San Joaquin River and/or Fresno Slough flows, operations are to be made to minimize flood damages in the local area

In reality, the rules are implemented differently, as described in Mussetter (2008). The report describes a fairly complicated, multiple-step procedure used to develop the diversion to the Chowchilla Bypass in an attempt to prevent flood damage in the San Joaquin River in both Reach 2B and Reach 3 by diverting as much water as possible down the bypass then splitting any remaining Reach 3 flooding evenly between the bypass, and the San Joaquin River.

The operation for all simulations as follows:

- First 1,500 cfs to Reach 2B
- Next 5,500 cfs to Chowchilla Bypass
- Next 1,000 cfs to Reach 2B
- Additional flow split 50/50 between the Chowchilla Bypass and Reach 2B
- If Reach 3 flow below Mendota Dam is greater than 1,300 cfs, additional diversion to the bypass up to the minimum of (first fill unused bypass capacity) the following:
  - Reach 3 flooding (flow over 1,300 cfs)
  - Unused bypass capacity
  - Reach 2B flow (remaining flow after initial diversion)
- If Reach 3 flow is still greater than 1,300 cfs, then additional diversion to bypass up to the minimum of (split unavoidable flooding 50/50 between bypass and river) the following:
  - Fifty percent of remaining Reach 3 flooding (remaining flow over 1,300 cfs)
  - Remaining Reach 2B flow

This rule is too complicated for the HEC-5 flow modeling capability to easily implement. In this project, flow routing was performed by running the SJR5Q model and allowing it to determine the diversion to the Chowchilla Bypass using the first four rules above, that is, without trying to increase the diversion to the Chowchilla Bypass to protect Reach 3. An Excel spreadsheet was then used to extract flows from the SJR5Q output, and to compute a new diversion each day, implementing the final two rules above. This new diversion is then input to a second run of the SJR5Q model as a fixed diversion to the Chowchilla Bypass.

Sand Slough Control Structure (top of reach 4B)

The Sand Slough Control Structure operation rules limit downstream San Joaquin River flows to the 1,500 cfs flood control limit. The present capacity of the San Joaquin River channel is severely limited to about 300 to 400 cfs, and in actual operation, the entire San Joaquin River flow is diverted through the Sand Slough Control Structure into the Eastside Bypass. The control structure has not been operated to allow water to flow into the San Joaquin River for many years.

The operation for all simulations is to divert the entire San Joaquin River flow to the Eastside Bypass.

Mariposa Bypass Control Structure

The operational rules call for flows of up to 8,500 cfs to be diverted into the Mariposa Bypass from the Eastside Bypass and back to the San Joaquin River. Recent operations however, allow 2,000 to 3,000 cfs to remain in the Eastside Bypass with 25 to 33 percent of any additional Eastside Bypass flow diverted into the Mariposa Bypass.

The Settlement does make any provisions for modifications to this reach of the river. The operation for the all simulations is as follows:

- First 2,500 cfs remain in the Eastside Bypass

Thirty percent of additional Eastside Bypass flow is diverted to the Mariposa Bypass and back to the San Joaquin River.

4.2.3 Output Description

San Joaquin River temperature modeling was performed on a 6-hour time interval from 1980 to 2003.

The main resource area concerned with water temperature in the San Joaquin River is fisheries. The Exhibit B SJRRP release schedules were designed with required flows in specific time periods of the year based on the Chinook salmon life stage expected during that period. Since different life stages require different temperatures, the mean temperature during the period is of importance in using the data in the fisheries analysis.

Each time period was then examined and split so that no period is more than 1 month long. The final time periods are as follows:

- January 1 – 31
- February 1 – 28
- March 1 – 15
- March 16 – 31
- April 1 – 15
- April 16 – 30
- May 1 – 31
- June 1 – 30
- July 1 - 31
- August 1 - 31
- September 1 - 30
- October 1 - 31
- November 1 - 11
- November 12 – 30
- December 1 -31

The period mean daily temperatures were then computed for each year of the simulation, from 1980 to 2003. The resulting data set are presented in two ways.

- Profiles along the San Joaquin River from Millerton Lake to the Merced River of the mean temperature for each time interval
- Annual profile at selected locations on the San Joaquin River

Both the temperature profiles along the river and the annual temperature profiles also include the 10, 25, 50 (median), 75, and 90 percent exceedence temperature for interval to indicate the variation from year to year.

Figure 4-5 is an example of a temperature profile along the San Joaquin River.

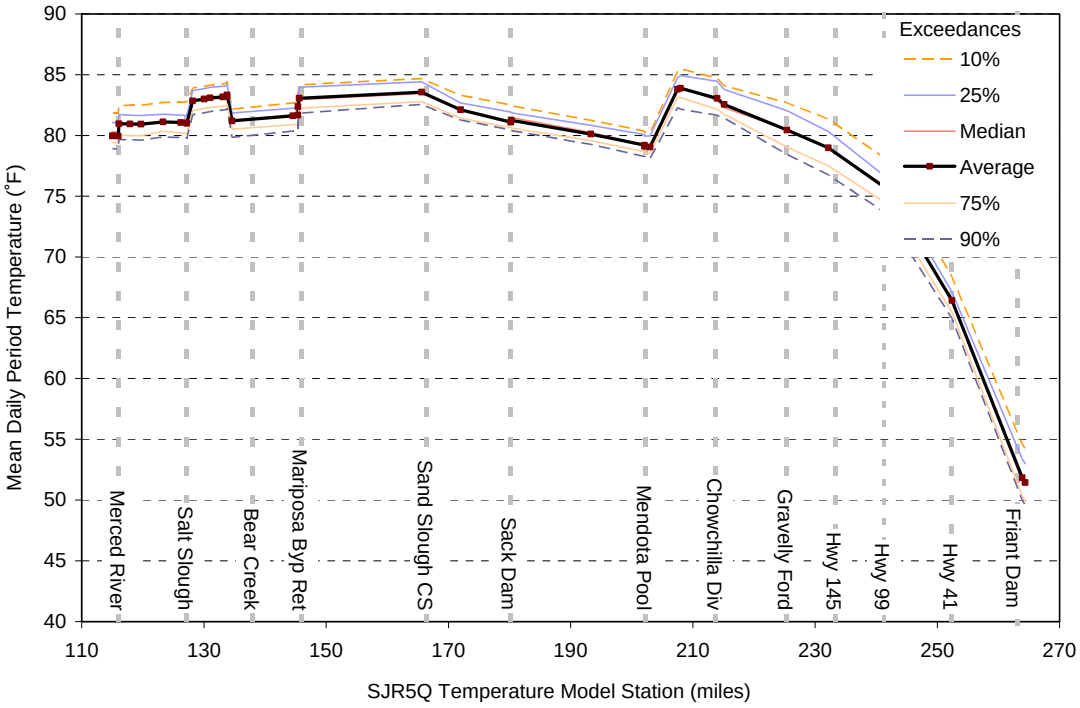


Figure 4-5.
Example San Joaquin River Temperature Profile

The temperature profile plots show that the San Joaquin River rapidly heats up between Millerton Lake and Mendota Pool and is much more stable from Mendota Pool to the Merced River. To capture this effect, the locations were chosen closer together upstream of the Mendota Pool than downstream. The locations selected are as follows:

- Millerton Release
- Highway 41
- Highway 99
- Highway 145
- Gravelly Ford
- Chowchilla Diversion
- Mendota Pool
- Sack Dam
- Sand Slough
- Mariposa Bypass Return
- Bear Creek
- Salt Slough
- Merced River

Figure 4-6 is an example of an annual temperature plot at a location.

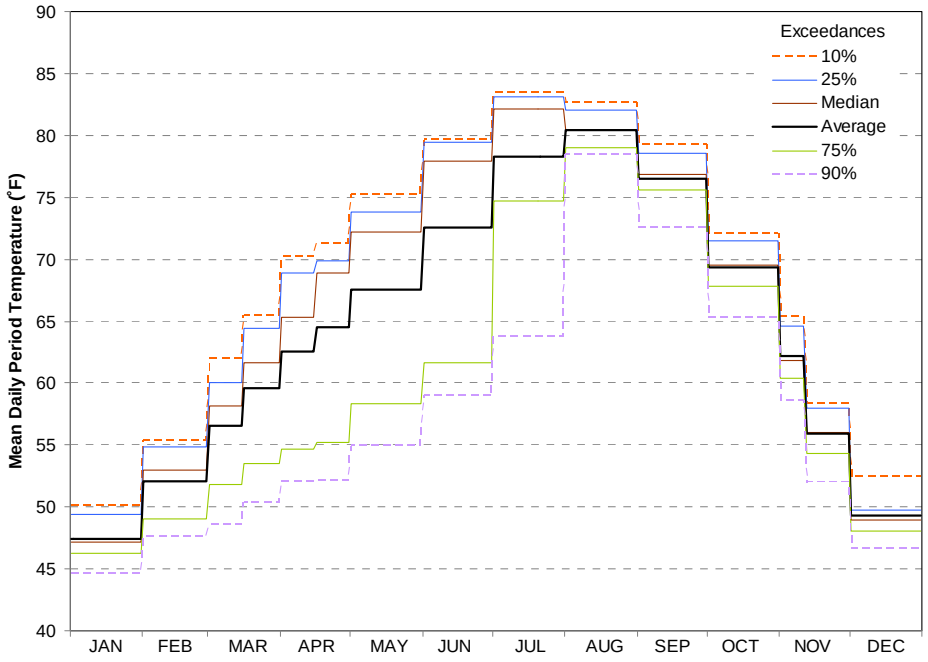


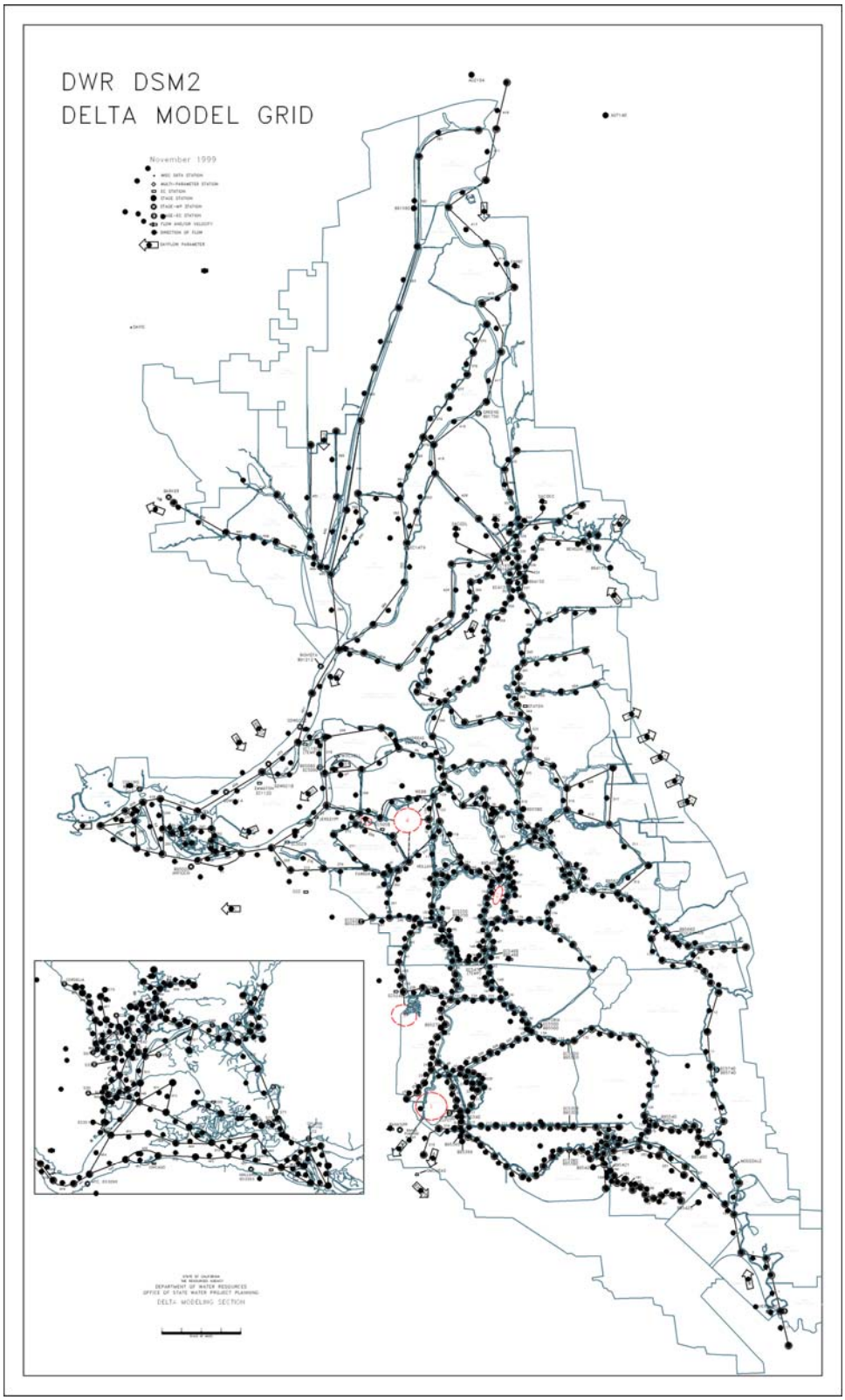
Figure 4-6.
Example Annual Temperature Profile Plot

4.3 Delta Water Quality (DSM2)

The DWR DSM2 is a branched one-dimensional, physically based numerical model of the Delta developed by DWR in the late 1990s. DSM2-Hydro, the hydrodynamics module, is derived from the USGS Four Point model. DSM2-Qual, the water quality module, is derived from the USGS Branched Lagrangian Transport Model. Details of the model, including source codes and model performance, are available from the DWR, Bay-Delta Office, Modeling Support Branch Web site (http://modeling.water.ca.gov/delta/models/dsm2/index.html). Documentation of model development is discussed in annual reports to SWRCB, by the Delta Modeling Section of DWR (2001 a).

A DSM2 schematic is shown in Figure 4-7. Key DSM2 inputs include tidal stage, boundary inflow and salinity concentration, and operation of flow-control structures. Table 4-1 summarizes basic input requirements and assumptions.

In DSM2 model simulations, EC is typically used as a surrogate for salinity. Results from CalSim are used to define Delta boundary inflows. CalSim-derived boundary inflows include the Sacramento River flow at Hood, San Joaquin River flow at Vernalis, inflow from the Yolo Bypass, and inflow from the eastside streams. The net Delta outflow from CalSim is used to calculate the DSM2 salinity boundary at Martinez.



Source: California Department of Water Resources, Bay-Delta Office, Delta Modeling Section, http://modeling.water.ca.gov/delta/models/dsm2/documentation.shtml.

Figure 4-7.
DSM2 Schematic

Table 4-1.
DSM2 Input Requirements and Assumptions

Parameters	Assumptions
Period of simulation	October 1922 – September 2003
Boundary flows	CalSim output
Boundary stage	15-minute adjusted astronomical tide
Agricultural diversion & return flows	Delta Island Consumptive Use model, 2005/2020 LOD
Salinity	
Martinez EC	Computed from modified G-model, adjusted astronomical tide, and Net Delta Outflow from CalSim
Sacramento River	Constant value = 175 μS/cm
Yolo Bypass	Constant value = 175 μS/cm
Mokelumne River	Constant value = 150 μS/cm
Cosumnes River	Constant value = 150 μS/cm
Calaveras River	Constant value = 150 μS/cm
San Joaquin River	CalSim EC estimate using modified Kratzer equation
Agricultural drainage	Varying monthly values that are constant year to year
Facility operations	
Delta Cross Channel	CalSim output
South Delta barriers	Temporary barriers/SDIP operation of permanent barriers

Key:
μS/cm = microsiemens per centimeter
EC = electrical conductivity
LOD = level of development
SDIP = South Delta Improvements Program

4.3.1 Planning Tide at Martinez Boundary

Tidal forcing is imposed at the downstream boundary at Martinez as a TS of stage (for the hydrodynamic module) and salinity (for the water quality module). DWR has traditionally used a "19-year mean tide" (or "repeating tide") in all DSM2 planning studies, in which the tide is represented by a single repeating 25-hour cycle.

An "adjusted astronomical tide" was later developed by DWR that accounts for the spring-neap variation of the lunar tide cycle for a 16-year period, from 1976 to 1991. (DWR 2001a). As part of the Common Assumptions effort, an updated version of DSM2 was developed that simulates an 82-year (1922 through 2003) CalSim period of record using an adjusted astronomical tide.

4.3.2 Salinity Boundary Conditions

Martinez

Salinity at the Martinez downstream boundary reflects intrusion of saltwater into San Pablo Bay from the ocean. It is determined using an empirical model known as the modified G-model (DWR 2001b). The model calculates a 15-minute TS of salinity values based on the adjusted astronomical tide and net Delta outflow. Since these aggregate flows are available from CalSim, salinity at Martinez can be preprocessed and input to DSM2 as TS data. Each simulation has a different EC boundary condition at Martinez, reflecting the different inflows and exports from the Delta that occur in a particular scenario.

Sacramento River/Yolo Bypass/ Eastside Streams

The inflow salinities for the Sacramento River, Yolo Bypass, and eastside streams (Mokelumne, Cosumnes, and Calaveras rivers) were assumed to be constant at 175, 175, and 150 microSiemens per centimeter (μS/cm), respectively.

San Joaquin River at Vernalis

CalSim calculates EC for the San Joaquin River at Vernalis using a modified Kratzer equation. The resulting EC values were used to define the inflow salinity for DSM2. Each simulation has a different EC boundary condition at Vernalis, reflecting different upstream operations on the San Joaquin River and its tributaries.

Agricultural and Municipal and Industrial Return Flows

The salinity of agricultural return flows was based on an analysis of Municipal Water Quality Investigations (MWQI) data (DWR 1995). Monthly, regional representative EC values of drainage were determined for three regions in the Delta (north, west, and southeast regions). EC values vary by month, but are constant from year to year and are independent of the LOD. EC values were highest for the west region because of its proximity to the ocean. Monthly EC values follow a seasonal trend, with the highest concentrations occurring in winter and spring during the rainfall-runoff season (approximately 820 μS/cm to 1,890 μS/cm). Lowest drainage concentrations occur in July and August (approximately 340 μS/cm to 920 μS/cm).

4.3.3 Delta Channel Flow

Sacramento River water flows into the central Delta via the Delta Cross Channel and Georgiana Slough. The Delta Cross Channel, constructed in 1951 as part of the CVP, connects the Sacramento River to the Mokelumne River via Snodgrass Slough. Its purpose is to increase flow in the lower San Joaquin River and to reduce salinity intrusion and the movement of saline water from Suisun Bay toward Contra Costa Water District's (CCWD) Rock Slough Intake and the Jones Pumping Plant. Two radial gates regulate flow through the Delta Cross Channel. When the gates are open, flow through the Delta Cross Channel is determined by the upstream stage in the Sacramento River. Similarly, flow through Georgiana Slough is a function of the upstream Sacramento River stage. Sacramento River water is also transported southward through Threemile Slough, which connects the Sacramento River just downstream from Rio Vista to the San Joaquin River.

The mouth of the Old River, located upstream from the mouth of the Mokelumne River, is the major conduit for water flowing from the Sacramento River, through Georgiana Slough and the Delta Cross Channel, via the Mokelumne River, to the south Delta. Additional water for CVP/SWP export pumps moves through the mouth of the Middle River, Columbia Cut, Turner Cut, False River, Fisherman's Cut, and Dutch Slough. Net flows at the mouth of the Old River and Middle River are influenced by CVP/SWP exports and south Delta irrigation diversions (approximately 40 percent of total net Delta diversions). Previous DSM2 simulations indicate that about 45 percent of south Delta exports flows through the mouth of the Old River or through the False River. About 40 percent of the south Delta exports flows through the mouth of the Middle River, and about 10 percent of the flow is through Turner Cut. This division of flow is insensitive to the magnitude of exports (Jones and Stokes 2004).

4.3.4 Control Structures

A number of flow-control structures are currently operated seasonally in the Delta. These structures can affect water quality by changing the pattern of flow through the Delta.

Clifton Court Forebay

In all DSM2 simulations, the Clifton Court Forebay gates were operated tidally using "Priority 3." Under Priority 3, the gates are closed 1 hour before and 2 hours after the lower low tide. They are also closed from 2 hours after the high low tide to 1 hour before the high tide. Discharge is proportional to the square root of the head difference across the gates. Maximum flow was capped at 15,000 cfs. The discharge coefficient was set equal to 2,400, which results in a flow of 15,000 cfs for a 1.0-foot head difference.

Delta Cross Channel

The Delta Cross Channel affects salinity in the central and south Delta. CalSim calculates the number of days the Delta Cross Channel is open in each month. The 1995 WQCP (SWRCB 1995) specifies that the gates be closed for 10 days in November, 15 days in December, and 20 days in January, from February 1 to May 20, and for 14 days between May 21 and June 15. In addition, the gates must be closed to avoid scouring whenever Sacramento River flow at the Delta Cross Channel is greater than 25,000 cfs. For DSM2 simulations, all partial-month closings of the Delta Cross Channel were assumed to occur at the end of the month.

South Delta Barriers

DSM2 modeling of existing conditions includes the South Delta Temporary Barriers Project, which consists of four rock barriers that are temporarily installed across south Delta channels. The objectives of the project are as follows:

- Increase water levels, circulation patterns, and water quality in the south Delta area for local agricultural diversions
- Improve operational flexibility of the SWP to help reduce fishery impacts and improve fishery conditions

Details of the temporary barriers can be found on DWR's Web site . Of the four temporary barriers, the Head of Old River barrier serves as a fish barrier and has been in place most years, between September 15 and November 30, since 1963. The remaining three barriers serve as agricultural barriers and are installed between April 15 and September 30. Installation and removal dates of the barriers are based on the USACE Section 404 Permit, California Department of Fish and Game 1601 Permit, and various Temporary Entry Permits required from landowners and local Reclamation Districts. Table 4-2 gives the assumed temporary barrier operation for modeling existing conditions.

Table 4-2.
Temporary Barrier Simulated Operation

Barriers	DSM2 Channel No.	Closure	Complete Removal
Head of Old River (spring)	54	April 15	May 15
Head of Old River (fall)	54	September 15	November 30
Middle River	134	April 15	November 30
Old River near Tracy	99	April 15	November 30
Grant Line Canal	206	May 15	November 30

Source: Reclamation and DWR 2005.

Suisun Marsh Salinity Control Gate

The Suisun Marsh Salinity Control Gate limits flow in Montezuma Slough from Suisun Marsh during flood tide, and allows drainage from the marsh during ebb tide. The gates are not operated in the summer months (June through September) and are not operated at all in some wet years. Actual gate operations are triggered by salinity levels in Suisun Marsh. However, in DSM2 months, gate operations are an input to the model. Suisun Marsh Diversion and drainage flows have relatively little effect on salinity upstream from Chipps Island.

4.3.5 Delta Island Consumptive Use

DSM2 uses the Delta Island Consumptive Use (DICU) model to develop agricultural diversions and return flows to each of 142 Delta subareas on a monthly time step. An associated routine allocates the diversions and return flows to approximately 250 diversion nodes and 200 drainage nodes in DSM2. The DICU model considers precipitation, seepage, evapotranspiration, irrigation, soil moisture, leach water, runoff, crop type, and acreage. Net DICU is computed as diversions plus seepage, less drainage. Positive values indicate a net depletion of water from Delta channels; negative values indicate a net return flow from the Delta islands into channels. DICU follows the seasonal pattern of irrigation diversions during summer, and drainage return flows from winter runoff.

DSM2 net channel accretions and depletions match aggregated values used in CalSim so that net Delta outflow is consistent between the two models.

4.3.6 Water Quality Conversions

DSM2 uses EC as a substitute for salinity. However, other water quality constituents were needed to assess potential impacts of the proposed alternatives.

DWR derived relationships among EC, bromide, and chloride at Delta export locations for use in the In-Delta Storage Investigations (Suits 2001). Suits (2001) gives a regression equation for EC at the Old River at Rock Slough as a function of chloride at Contra Costa Canal Pumping Plant No. 1, and a regression equation relating EC to chloride at the Los Vaqueros Intake. The relationship between EC and chloride in the vicinity of the Clifton Court Forebay and DMC Intake is more complex. In general, the relationship depends on whether the source water is derived from the San Joaquin River or the Sacramento River. The regression equation established by Suits is conservative, giving high values of chloride for a given EC (2001). The relationship between chloride and bromide is fairly uniform, with little site-specific variation (Suits 2001). Therefore, a single regression equation can be used for different export locations. Regression equations used to convert EC to chloride are given in Table 4-3.

Table 4-3.
Relationship Between Salinity Parameters

Location	Slope	Intercept
CCWD Pumping Plant No.1	0.268	-24.0
Clifton Court Forebay	0.273	-43.9
DMC Intake	0.273	-43.9

Source: Suits 2001
Key:
CCWD = Contra Costa Water District
DMC = Delta-Mendota Canal

4.3.7 Monthly Modeling Results

Simulated monthly averages of daily DSM2 modeling results at representative locations are presented in the attachment Delta Water Quality Modeling Output. Table 4-4 lists the information included for each scenario.

Table 4-4.
DSM2 Results Presented in Appendix A

Location	Parameter
Sacramento River at Collinsville	EC
Sacramento River at Chipps Island	EC
Sacramento River at Emmanton	EC
Sacramento River at Jersey Point	EC
Sacramento River at Brandt Bridge	EC
Sacramento River at Vernalis	EC
Old River near Tracy Road Bridge	EC
Old River at Middle River	EC
Old River at Hwy 4 (CCWD Intake)	EC
Old River at Bacon Island	EC
Delta –Mendota Canal at Tracy Pumping Plant	EC
Contra Costa Canal Pumping Plant No. 1	EC
West Canal at mouth of CC Forebay Intake	EC
Middle River at Victoria Canal	EC
Middle Mendota Canal at Tracy Pumping Plant	Cl
Delta – Mendota Canal at Tracy Pumping Plant No. 1	Cl
West Canal at mouth of CCForebay Intake	Cl
Middle River near the Howard Road	Stage
Old Bridge near Tracy Road Bridge	Stage
Doughty Cut above Grant Line Canal Barrier	Stage
East of Coney Island	Stage
Sacramento River at Collinsville	EC

Key:
CC = Clifton Court
CCWD = Contra Costa Water District
Cl = chloride
EC = electrical conductivity
HWY = highway
DSM2 = Delta Simulation Model 2

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5.0 Groundwater Modeling

5.1 Regional Groundwater Modeling

This section describes the groundwater analytical tool for evaluating changes to regional groundwater conditions, the approach and assumptions, and the output data related to the Proposed Action presented in the WY 2010 Interim Flows EA/IS. Assessments of regional groundwater levels will be made for the entire delivery area for the Friant – Kern Canal, Madera Canal, and areas adjacent to the Friant – Kern and Madera canal service areas.

The Water Management Work Group requires groundwater analytical tools to evaluate changes to groundwater resources from implementing the SJRRP.

The regional groundwater analysis addresses this need by evaluating potential effects to groundwater resources as a result of the Proposed Action, as identified in the WY 2010 Interim Flows EA/IS. WY 2010 Interim Flows would result in changes to flows in the San Joaquin River below Friant Dam, and changes in surface water deliveries to water users within the Friant Service Area. These changed conditions would in turn result in changes in groundwater-surface water interaction and changes in groundwater pumping. Groundwater conditions, including groundwater levels and groundwater quality, would respond to these changes. This appendix documents the groundwater analytical tool used to evaluate the response of groundwater levels to changes in groundwater pumping, reported in the WY 2010 Interim Flows EA/IS.

5.1.1 Model Description

Groundwater analytical tools often have the ability to simulate groundwater conditions for a regional area, such as a water agency service area, a county or multicounty area, or entire groundwater basin. For the purposes of assessing of regional groundwater conditions within the Restoration Area, a review process was completed to identify analytical tools that could be used to evaluate regional groundwater conditions. A number of spatially distributed numerical models were identified as being under development or modification, but none were available to meet the schedule requirements associated with completing the WY 2010 Interim Flows EA/IS. Those removed from immediate consideration, but may be reconsidered at a later date, should they become available, when deemed suitable and practical, include the Central Valley Hydrologic Model (Faunt et al. 2008), C2VSIM (DWR 2007a and 2007b), and HydroGeoSphere (DeMarco and Matanga 2007).

The approach for assessing effects to regional groundwater that was used for the analysis differs between the areas considered to be Friant and non-Friant. During litigation, studies were completed by experts to better understand potential implications of the Settlement on regional groundwater and seepage issues. Data and reports collected during this period are available for most of the Friant Service Areas, but are not readily available for evaluating potential effects of the WY 2010 Interim Flows on non-Friant regions. Therefore, more information (data, analytical tools, and published reports) is generally available for the Friant Service Area than the areas outside, or non-Friant regions. For this reason, unique approaches are used for each region.

The following section discusses the analytical pathway for describing regional groundwater responses. Friant Service Area methods rely on testimony delivered during Settlement litigation, which is dependent on historical groundwater levels and Irrigation Training and Research Center estimated pumping for the Friant Service Area (Schmidt 2005a, Schmidt 2005b, Burt 2005).

Schmidt Tool – Friant Service Area Tool

A simplified numerical tool developed by Schmidt (2005b) during litigation was used to evaluate changes in groundwater conditions in the Friant Service Area as part of the regional groundwater analysis. This regional groundwater tool estimates the depth to groundwater within Friant Division district areas according to relationships describing annual groundwater pumping and resulting depth to groundwater developed by Dr. Schmidt (2005b). The report completed by Schmidt in 2005 presents the best available data describing the relationship between groundwater pumping and groundwater depth within these areas. Relationships between groundwater pumping and groundwater depth within the Friant Division, as developed by Dr. Schmidt, are linear and describe annual aquifer drawdown. To estimate long-term aquifer drawdown for future conditions, annual drawdown within each district region was applied for a 25-year period to correspond to 2030 conditions. Key assumptions associated with using these relationships are described below in Section 5.2.3.

Regional groundwater analysis involved development of a spreadsheet model that uses the Schmidt (2005b) relationships together with simulated surface water deliveries from CalSim. For the Proposed Action evaluated, surface water delivery output data from CalSim were proportionally disaggregated from seven WMAs to district-level deliveries based on existing Class 1 and Class 2 water contract entitlements. In addition to the Class 1 and Class 2 deliveries, districts received additional 215 water and 16(b) water under the Proposed Action, which was distributed proportional to the reduced Class 1 and Class 2 deliveries to each district. District-level surface water deliveries were used to estimate groundwater pumping, assuming pumping offset deliveries, using a 1:1 relationship.

5.1.2 Modeling Assumptions

The following section describes the approach and key assumptions for regional groundwater analysis in the Friant and non-Friant regions.

Schmidt Method Assumptions

The Schmidt method assumes a linear relationship is valid between district-wide pumping and district-wide drawdown. The relationships developed by Schmidt assume that each district is underlain by a homogeneous aquifer system that is a closed system and therefore is not hydraulically connected to the surrounding areas. The Schmidt method assumes that the relationship between historical groundwater pumping and resulting groundwater levels holds true for future water management conditions resulting from both the No-Action Alternative and Proposed Action (Schmidt 2005b). Absolute values of changes in groundwater conditions (groundwater levels) will not be reported. Regional groundwater conditions will be assessed based upon changes between the No-Action Alternative and Proposed Action Alternative. The Schmidt method assumes that groundwater supplies exist in each district to make up for the average annual net reductions in surface water deliveries resulting from the Proposed Action. However, it is recognized that the projected drawdown in the aquifer may not be sustainable in some districts within the Friant Service Area.

The potential drawdown of the aquifer within the Friant Service Area was estimated by Schmidt (2005b) using a linear relationship with groundwater pumping. During litigation, Burt (2005) estimated gross irrigation groundwater pumping for the Friant Service Area, which is not corrected for well inefficiencies, and is the estimate of pumping used for irrigation scheduling as opposed to the estimate that would be used in water balance calculations. The estimates of gross irrigation groundwater pumping for the period between 1987 and 2003 from Burt (2005) were used by Schmidt to develop Friant District relationships with estimates of the average annual drawdown per year. Estimates of pumping under existing conditions for the WY 2010 Interim Flows EA/IS are calculated as the current pumping condition (Schmidt 2005b) plus additional pumping needed to offset net reductions in Friant Service Area surface water deliveries.

Long-term average annual, wet period average annual, and drought period average annual surface water deliveries for each WMA are calculated from output data from CalSim. Long-term average annual surface water deliveries were calculated for the entire simulation period in CalSim between 1922 and 2003. Wet period average annual surface water deliveries were calculated for the simulation period in CalSim between 1995 and 1998; these were a series of consecutive wet or normal-wet years according to the San Joaquin River Index. Drought period average annual surface water deliveries were calculated for the simulation period in CalSim between 1987 and 1992; these are a series of consecutive dry or normal-dry years according to the San Joaquin River Index. The three conditions were used to illustrate a potential maximum and minimum change in groundwater elevations due to reductions in surface water deliveries for different hydrologic conditions. Simulated surface water deliveries reported by WMA are disaggregated to district-level deliveries, using existing contract entitlements.

Potential changes in groundwater quality, land subsidence, and drainage will be expressed qualitatively based on a review of known groundwater quality, land subsidence and drainage issues, and estimated changes in groundwater conditions (groundwater levels) associated with the Proposed Action.

5.1.3 Output Description

Output from the analysis using the Schmidt tool and mass balance tool is discussed.

Schmidt Tool

Output from the regional groundwater tool for the Friant Service Area using the Schmidt approach will be summarized in two tables. The first table identifies the change in groundwater levels in feet per year by Friant districts using the Schmidt method. The second table identifies groundwater pumping by Friant Districts using the Schmidt method. Not all of the 28 Friant Division Contractors are represented in the output tables because historical information was not available for each of the contractors from Schmidt (2005b). Groundwater conditions for 15 contractors are represented in the output tables in Attachment 3 – Groundwater Modeling. The remaining 13 Friant contractors are not represented in the output tables in the attachment, Groundwater Modeling – Schmidt Method.

6.0 Air Quality Modeling

Project-generated, reactive organic gases (ROG), nitrous oxides (NO_X), PM_{10}, and $PM_{2.5}$ were modeled using the URBEMIS 2007 Version 9.2.4 computer program. This modeling was based on the assumption that invasive plant surveys and removal would begin in spring and fall 2011, respectively, and on default URBEMIS model settings. Survey crews would consist of two to three workers and would create approximately one trip per day per surveying crew. The survey period is unknown at this time but could last several months (3 months is assumed for modeling purposes). Vegetation-removal crews would consist of six to seven workers with one heavy piece of equipment per crew (i.e., bobcat or backhoe). Other crew members would use hand tools, chainsaws, and weed whackers. Vegetation removal would result in approximately one haul truck trip per day per crew to move vegetation to an as-yet-undetermined waste or composting facility. Vegetation-removal activities are expected to last approximately 3 months and could occur for up to 3 consecutive years (2011–2013). The trip generation rates input into the URBEMIS model are representative of the Proposed Action, and would result in approximately eight associated daily vehicle round trips per day (seven employees, one haul truck). A maximum of 10 crews is expected for vegetation removal, and would remove approximately 1 acre of vegetation per day for all crews.

Some increased recreation could result from additional water flow (i.e., canoeing, kayaking, and fishing) and could create additional vehicle trips in and downstream from the Restoration Area. These trips are assumed to already exist; however, instead of traveling to other areas in the San Joaquin River watershed, it is assumed that recreationists would be attracted to the newly watered river reaches. Because criteria pollutant emissions are regional pollutants, and trips to the Restoration Area would be diversions from other parts of the region (the San Joaquin Valley Air Basin), no net increase in criteria air pollutants in the region would occur. In addition, any new emissions from increased recreation activities would be similar to operational actions. Air Quality modeling results are presented in the attachment, Air Quality Modeling – URBEMIS.

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7.0 References

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Attachment 1

Water Operations Modeling Output – CalSim

Modeling

SAN JOAQUIN RIVER
RESTORATION PROGRAM

June 2009

Table 1: Monthly Averages of Simulated End-of-Month Millerton Lake storage (TAF) - Restoration All Years

Month	Average of All Years		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	418	371	-47 (-11%)
Apr	444	382	-62 (-14%)
May	452	414	-38 (-9%)
Jun	446	425	-21 (-5%)
Jul	348	332	-16 (-5%)
Aug	245	233	-12 (-5%)
Sep	230	216	-15 (-6%)
Oct	241	216	-25 (-10%)
Nov	280	237	-43 (-15%)
Dec	325	287	-37 (-12%)
Jan	369	342	-26 (-7%)
Feb	379	359	-21 (-5%)

Source: CALSIM II Modeling (Node S18)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 2: Monthly Averages of Simulated End-of-Month Millerton Lake storage (TAF) - Restoration Wet

Month	Restoration Year Type - Wet		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	398	396	-3 (-1%)
Apr	383	368	-15 (-4%)
May	414	392	-23 (-5%)
Jun	522	520	-3 (0%)
Jul	506	501	-5 (-1%)
Aug	414	398	-15 (-4%)
Sep	361	330	-31 (-9%)
Oct	352	306	-46 (-13%)
Nov	378	314	-64 (-17%)
Dec	401	341	-60 (-15%)
Jan	430	390	-40 (-9%)
Feb	425	395	-30 (-7%)

Source: CALSIM II Modeling (Node S18)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 3: Monthly Averages of Simulated End-of-Month Millerton Lake storage (TAF) - Restoration Normal-Wet

Month	Restoration Year Type - Normal-Wet		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	463	428	-35 (-8%)
Apr	475	412	-63 (-13%)
May	484	461	-22 (-5%)
Jun	496	495	-1 (0%)
Jul	392	382	-10 (-3%)
Aug	257	240	-18 (-7%)
Sep	228	204	-25 (-11%)
Oct	257	224	-33 (-13%)
Nov	322	270	-51 (-16%)
Dec	373	334	-38 (-10%)
Jan	404	382	-22 (-5%)
Feb	412	393	-20 (-5%)

Source: CALSIM II Modeling (Node S18)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 4: Monthly Averages of Simulated End-of-Month Millerton Lake storage (TAF) - Restoration Normal-Dry

Month	Restoration Year Type - Normal-Dry		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	417	349	-68 (-16%)
Apr	466	378	-89 (-19%)
May	467	413	-55 (-12%)
Jun	421	380	-42 (-10%)
Jul	286	262	-24 (-9%)
Aug	181	173	-8 (-4%)
Sep	185	182	-3 (-2%)
Oct	196	184	-12 (-6%)
Nov	235	204	-32 (-13%)
Dec	290	261	-29 (-10%)
Jan	340	313	-27 (-8%)
Feb	360	339	-21 (-6%)

Source: CALSIM II Modeling (Node S18)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 5: Monthly Averages of Simulated End-of-Month Millerton Lake storage (TAF) - Restoration Dry

Month	Restoration Year Type - Dry		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	391	300	-91 (-23%)
Apr	449	371	-77 (-17%)
May	447	386	-61 (-14%)
Jun	362	317	-44 (-12%)
Jul	241	210	-31 (-13%)
Aug	166	161	-5 (-3%)
Sep	177	177	0 (0%)
Oct	179	167	-12 (-7%)
Nov	199	168	-31 (-16%)
Dec	239	209	-30 (-12%)
Jan	311	291	-20 (-6%)
Feb	311	302	-9 (-3%)

Source: CALSIM II Modeling (Node S18)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 6: Monthly Averages of Simulated End-of-Month Millerton Lake storage (TAF) - Restoration Critical High

Month	Restoration Year Type - Critical High		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	354	302	-52 (-15%)
Apr	394	343	-51 (-13%)
May	387	340	-47 (-12%)
Jun	290	257	-34 (-12%)
Jul	184	167	-17 (-9%)
Aug	147	141	-6 (-4%)
Sep	172	167	-5 (-3%)
Oct	169	159	-11 (-6%)
Nov	176	154	-22 (-13%)
Dec	210	187	-22 (-11%)
Jan	247	225	-22 (-9%)
Feb	307	279	-28 (-9%)

Source: CALSIM II Modeling (Node S18)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 7: Monthly Averages of Simulated End-of-Month Millerton Lake storage (TAF) - Restoration Critical Low

Month	Restoration Year Type - Critical Low		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	221	224	3 (2%)
Apr	242	246	3 (1%)
May	215	218	3 (1%)
Jun	182	185	2 (1%)
Jul	142	143	1 (1%)
Aug	131	131	0 (0%)
Sep	152	151	0 (0%)
Oct	151	139	-12 (-8%)
Nov	152	131	-21 (-14%)
Dec	229	208	-21 (-9%)
Jan	387	367	-21 (-5%)
Feb	395	393	-3 (-1%)

Source: CALSIM II Modeling (Node S18)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 8: Monthly Averages of Simulated Friant-Kern Canal Diversions (cfs) - Restoration All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,064	906	-157 (-15%)
Apr	1,751	1,477	-273 (-16%)
May	2,215	2,051	-165 (-7%)
Jun	3,056	2,861	-195 (-6%)
Jul	2,998	2,869	-129 (-4%)
Aug	2,562	2,416	-146 (-6%)
Sep	1,486	1,415	-72 (-5%)
Oct	648	661	13 (2%)
Nov	221	233	12 (6%)
Dec	206	212	6 (3%)
Jan	371	363	-8 (-2%)
Feb	824	847	23 (3%)

Source: CALSIM II Modeling (Node D18A)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 9: Monthly Averages of Simulated Friant-Kern Canal Diversions (cfs) - Restoration Wet

Month	Restoration Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,275	1,607	333 (26%)
Apr	1,830	2,200	370 (20%)
May	2,282	2,937	655 (29%)
Jun	3,998	4,196	198 (5%)
Jul	4,130	4,111	-19 (0%)
Aug	3,472	3,497	26 (1%)
Sep	2,236	2,306	70 (3%)
Oct	1,309	1,410	101 (8%)
Nov	534	586	53 (10%)
Dec	392	402	10 (3%)
Jan	807	704	-103 (-13%)
Feb	1,374	1,360	-13 (-1%)

Source: CALSIM II Modeling (Node D18A)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 10: Monthly Averages of Simulated Friant-Kern Canal Diversions (cfs) - Restoration Normal-Wet

Month	Restoration Year Type - Normal-Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,379	1,080	-299 (-22%)
Apr	2,502	1,956	-546 (-22%)
May	3,066	2,827	-239 (-8%)
Jun	3,887	3,573	-314 (-8%)
Jul	3,310	3,305	-5 (0%)
Aug	2,900	2,896	-4 (0%)
Sep	1,625	1,620	-5 (0%)
Oct	555	557	1 (0%)
Nov	149	149	0 (0%)
Dec	270	156	-113 (-42%)
Jan	424	410	-14 (-3%)
Feb	853	921	69 (8%)

Source: CALSIM II Modeling (Node D18A)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 11: Monthly Averages of Simulated Friant-Kern Canal Diversions (cfs) - Restoration Normal-Dry

Month	Restoration Year Type - Normal-Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	928	627	-301 (-32%)
Apr	1,557	1,155	-402 (-26%)
May	2,115	1,568	-547 (-26%)
Jun	2,508	2,220	-287 (-11%)
Jul	2,665	2,373	-292 (-11%)
Aug	2,352	2,075	-276 (-12%)
Sep	1,300	1,130	-170 (-13%)
Oct	468	434	-34 (-7%)
Nov	134	134	1 (0%)
Dec	130	280	149 (115%)
Jan	165	201	36 (22%)
Feb	674	643	-31 (-5%)

Source: CALSIM II Modeling (Node D18A)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 12: Monthly Averages of Simulated Friant-Kern Canal Diversions (cfs) - Restoration Dry

Month	Restoration Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	688	429	-259 (-38%)
Apr	1,030	629	-401 (-39%)
May	1,244	863	-381 (-31%)
Jun	1,939	1,632	-307 (-16%)
Jul	2,128	1,941	-187 (-9%)
Aug	1,757	1,327	-431 (-25%)
Sep	963	754	-209 (-22%)
Oct	424	463	39 (9%)
Nov	147	186	40 (27%)
Dec	54	29	-25 (-47%)
Jan	240	282	42 (17%)
Feb	597	624	26 (4%)

Source: CALSIM II Modeling (Node D18A)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 13: Monthly Averages of Simulated Friant-Kern Canal Diversions (cfs) - Restoration Critical High

Month	Restoration Year Type - Critical High		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	411	307	-104 (-25%)
Apr	442	387	-55 (-12%)
May	625	545	-80 (-13%)
Jun	1,348	1,166	-182 (-14%)
Jul	1,683	1,454	-229 (-14%)
Aug	1,019	887	-132 (-13%)
Sep	600	527	-73 (-12%)
Oct	443	390	-53 (-12%)
Nov	192	140	-52 (-27%)
Dec	16	16	0 (0%)
Jan	16	16	0 (0%)
Feb	197	175	-22 (-11%)

Source: CALSIM II Modeling (Node D18A)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 14: Monthly Averages of Simulated Friant-Kern Canal Diversions (cfs) - Restoration Critical Low

Month	Restoration Year Type - Critical Low		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	171	173	2 (1%)
Apr	218	222	3 (1%)
May	301	305	4 (1%)
Jun	607	617	10 (2%)
Jul	751	763	13 (2%)
Aug	459	477	18 (4%)
Sep	303	307	4 (1%)
Oct	228	231	3 (1%)
Nov	118	0	-118 (-100%)
Dec	16	16	0 (0%)
Jan	16	16	0 (0%)
Feb	117	965	848 (723%)

Source: CALSIM II Modeling (Node D18A)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 15: Monthly Averages of Simulated Madera Canal Diversions (cfs) - Restoration All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	79	83	4 (5%)
Apr	229	171	-57 (-25%)
May	645	561	-84 (-13%)
Jun	943	883	-60 (-6%)
Jul	1,026	980	-46 (-4%)
Aug	839	797	-42 (-5%)
Sep	294	281	-13 (-4%)
Oct	40	41	1 (3%)
Nov	8	11	3 (43%)
Dec	15	25	11 (73%)
Jan	31	40	10 (32%)
Feb	30	61	31 (103%)

Source: CALSIM II Modeling (Node D18B)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 16: Monthly Averages of Simulated Madera Canal Diversions (cfs) - Restoration Wet

Month	Restoration Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	77	221	144 (186%)
Apr	274	322	48 (18%)
May	1,128	1,128	0 (0%)
Jun	1,232	1,223	-9 (-1%)
Jul	1,232	1,231	-1 (0%)
Aug	1,166	1,190	24 (2%)
Sep	626	677	51 (8%)
Oct	130	152	22 (17%)
Nov	30	47	18 (59%)
Dec	33	75	42 (126%)
Jan	35	37	3 (7%)
Feb	32	48	16 (49%)

Source: CALSIM II Modeling (Node D18B)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 17: Monthly Averages of Simulated Madera Canal Diversions (cfs) - Restoration Normal-Wet

Month	Restoration Year Type - Normal-Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	138	130	-7 (-5%)
Apr	481	352	-129 (-27%)
May	855	743	-112 (-13%)
Jun	1,067	1,034	-32 (-3%)
Jul	1,083	1,117	34 (3%)
Aug	943	953	10 (1%)
Sep	352	337	-15 (-4%)
Oct	40	38	-2 (-5%)
Nov	5	5	0 (5%)
Dec	10	17	7 (73%)
Jan	52	72	20 (38%)
Feb	31	75	44 (145%)

Source: CALSIM II Modeling (Node D18B)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 18: Monthly Averages of Simulated Madera Canal Diversions (cfs) - Restoration Normal-Dry

Month	Restoration Year Type - Normal-Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	61	2	-60 (-98%)
Apr	88	3	-85 (-96%)
May	421	272	-148 (-35%)
Jun	878	786	-92 (-11%)
Jul	1,058	954	-104 (-10%)
Aug	766	659	-107 (-14%)
Sep	161	105	-55 (-34%)
Oct	8	0	-8 (-100%)
Nov	1	0	-1 (-100%)
Dec	18	19	1 (8%)
Jan	16	19	3 (20%)
Feb	40	67	27 (66%)

Source: CALSIM II Modeling (Node D18B)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 19: Monthly Averages of Simulated Madera Canal Diversions (cfs) - Restoration Dry

Month	Restoration Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	25	0	-25 (-100%)
Apr	21	2	-18 (-89%)
May	223	183	-41 (-18%)
Jun	659	533	-126 (-19%)
Jul	801	648	-153 (-19%)
Aug	554	449	-105 (-19%)
Sep	87	69	-18 (-21%)
Oct	0	0	0 (0%)
Nov	0	0	0 (0%)
Dec	0	0	0 (0%)
Jan	23	38	16 (70%)
Feb	14	26	12 (85%)

Source: CALSIM II Modeling (Node D18B)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 20: Monthly Averages of Simulated Madera Canal Diversions (cfs) - Restoration Critical High

Month	Restoration Year Type - Critical High		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	10	0	-10 (-100%)
Apr	0	0	0 (0%)
May	152	134	-17 (-12%)
Jun	434	378	-56 (-13%)
Jul	529	461	-68 (-13%)
Aug	367	301	-65 (-18%)
Sep	55	66	12 (21%)
Oct	0	0	0 (0%)
Nov	0	0	0 (0%)
Dec	0	0	0 (0%)
Jan	0	0	0 (0%)
Feb	0	0	0 (0%)

Source: CALSIM II Modeling (Node D18B)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 21: Monthly Averages of Simulated Madera Canal Diversions (cfs) - Restoration Critical Low

Month	Restoration Year Type - Critical Low		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	0	0	0 (0%)
Apr	0	0	0 (0%)
May	81	82	1 (1%)
Jun	206	209	3 (1%)
Jul	253	257	4 (1%)
Aug	49	49	0 (0%)
Sep	156	159	3 (2%)
Oct	0	0	0 (0%)
Nov	0	0	0 (0%)
Dec	0	0	0 (0%)
Jan	0	0	0 (0%)
Feb	40	415	375 (938%)

Source: CALSIM II Modeling (Node D18B)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 22: Monthly Averages of Simulated Merced River Inflow To San Joaquin River (cfs) - San Joaquin Valley All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	834	835	1 (0%)
Apr	746	689	-57 (-8%)
May	892	920	27 (3%)
Jun	924	929	4 (0%)
Jul	701	702	1 (0%)
Aug	473	474	1 (0%)
Sep	271	279	9 (3%)
Oct	453	458	5 (1%)
Nov	437	437	0 (0%)
Dec	595	591	-4 (-1%)
Jan	900	903	3 (0%)
Feb	1,093	1,096	3 (0%)

Source: CALSIM II Modeling (Node C566)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 23: Monthly Averages of Simulated Merced River Inflow To San Joaquin River (cfs) - San Joaquin Valley Wet

Month	San Joaquin Valley Index Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,849	1,853	3 (0%)
Apr	1,124	1,078	-46 (-4%)
May	2,003	2,017	14 (1%)
Jun	2,619	2,631	13 (0%)
Jul	2,004	2,001	-3 (0%)
Aug	1,186	1,188	2 (0%)
Sep	650	668	18 (3%)
Oct	664	665	1 (0%)
Nov	557	557	0 (0%)
Dec	886	886	0 (0%)
Jan	1,474	1,474	0 (0%)
Feb	1,531	1,531	0 (0%)

Source: CALSIM II Modeling (Node C566)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 24: Monthly Averages of Simulated Merced River Inflow To San Joaquin River (cfs) - San Joaquin Valley Above Normal

Month	San Joaquin Valley Index Year Type - Above Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	609	609	0 (0%)
Apr	676	478	-198 (-29%)
May	700	777	77 (11%)
Jun	294	296	2 (1%)
Jul	262	272	10 (4%)
Aug	376	377	1 (0%)
Sep	245	262	17 (7%)
Oct	514	536	23 (4%)
Nov	438	438	0 (0%)
Dec	606	606	0 (0%)
Jan	893	900	8 (1%)
Feb	1,206	1,214	8 (1%)

Source: CALSIM II Modeling (Node C566)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 25: Monthly Averages of Simulated Merced River Inflow To San Joaquin River (cfs) - San Joaquin Valley Below Normal

Month	San Joaquin Valley Index Year Type - Below Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	389	389	0 (0%)
Apr	728	700	-28 (-4%)
May	409	455	46 (11%)
Jun	280	280	0 (0%)
Jul	172	172	0 (0%)
Aug	128	128	0 (0%)
Sep	76	76	0 (0%)
Oct	335	335	0 (0%)
Nov	394	394	0 (0%)
Dec	542	517	-25 (-5%)
Jan	522	522	0 (0%)
Feb	724	724	0 (0%)

Source: CALSIM II Modeling (Node C566)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 26: Monthly Averages of Simulated Merced River Inflow To San Joaquin River (cfs) - San Joaquin Valley Dry

Month	San Joaquin Valley Index Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	343	343	0 (0%)
Apr	633	649	16 (2%)
May	389	398	9 (2%)
Jun	184	184	0 (0%)
Jul	126	126	0 (0%)
Aug	115	115	0 (0%)
Sep	63	63	0 (0%)
Oct	311	311	0 (0%)
Nov	385	385	0 (0%)
Dec	385	385	0 (0%)
Jan	788	798	9 (1%)
Feb	1,294	1,304	9 (1%)

Source: CALSIM II Modeling (Node C566)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 27: Monthly Averages of Simulated Merced River Inflow To San Joaquin River (cfs) - San Joaquin Valley Critical

Month	San Joaquin Valley Index Year Type - Critical		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	295	295	0 (0%)
Apr	354	342	-12 (-3%)
May	220	218	-2 (-1%)
Jun	139	139	0 (0%)
Jul	83	83	0 (0%)
Aug	74	74	0 (0%)
Sep	54	54	0 (0%)
Oct	277	277	0 (0%)
Nov	333	333	0 (0%)
Dec	357	357	0 (0%)
Jan	419	419	0 (0%)
Feb	430	430	0 (0%)

Source: CALSIM II Modeling (Node C566)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 28: Monthly Averages of Simulated San Joaquin River Below Merced River (cfs) - San Joaquin Valley All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	2,543	3,115	572 (22%)
Apr	2,114	2,619	505 (24%)
May	2,069	2,092	23 (1%)
Jun	1,623	1,698	75 (5%)
Jul	941	948	7 (1%)
Aug	537	544	7 (1%)
Sep	720	752	32 (4%)
Oct	632	704	72 (11%)
Nov	1,062	1,241	179 (17%)
Dec	1,506	1,400	-106 (-7%)
Jan	2,283	2,156	-127 (-6%)
Feb	3,154	2,982	-172 (-5%)

Source: CALSIM II Modeling (Node C620)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 29: Monthly Averages of Simulated San Joaquin River Below Merced River (cfs) - San Joaquin Valley Wet

Month	San Joaquin Valley Index Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	6,202	6,416	214 (3%)
Apr	5,004	5,328	324 (6%)
May	5,359	5,258	-100 (-2%)
Jun	4,722	4,879	157 (3%)
Jul	2,771	2,773	2 (0%)
Aug	1,279	1,287	8 (1%)
Sep	1,132	1,174	42 (4%)
Oct	867	938	71 (8%)
Nov	1,462	1,595	133 (9%)
Dec	2,313	2,160	-154 (-7%)
Jan	3,830	3,627	-203 (-5%)
Feb	4,070	3,877	-194 (-5%)

Source: CALSIM II Modeling (Node C620)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 30: Monthly Averages of Simulated San Joaquin River Below Merced River (cfs) - San Joaquin Valley Above Normal

Month	San Joaquin Valley Index Year Type - Above Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,643	2,377	734 (45%)
Apr	1,355	2,298	943 (70%)
May	1,139	1,263	125 (11%)
Jun	498	544	46 (9%)
Jul	320	336	16 (5%)
Aug	449	456	7 (2%)
Sep	700	742	42 (6%)
Oct	709	800	91 (13%)
Nov	980	1,186	205 (21%)
Dec	1,189	1,189	0 (0%)
Jan	1,872	1,737	-134 (-7%)
Feb	3,013	2,785	-228 (-8%)

Source: CALSIM II Modeling (Node C620)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 31: Monthly Averages of Simulated San Joaquin River Below Merced River (cfs) - San Joaquin Valley Below Normal

Month	San Joaquin Valley Index Year Type - Below Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	989	1,721	732 (74%)
Apr	1,081	1,807	725 (67%)
May	749	842	93 (12%)
Jun	440	483	44 (10%)
Jul	215	221	6 (3%)
Aug	198	204	6 (3%)
Sep	533	558	24 (5%)
Oct	504	571	67 (13%)
Nov	954	1,155	201 (21%)
Dec	1,431	1,157	-274 (-19%)
Jan	1,111	1,041	-69 (-6%)
Feb	1,904	1,873	-31 (-2%)

Source: CALSIM II Modeling (Node C620)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 32: Monthly Averages of Simulated San Joaquin River Below Merced River (cfs) - San Joaquin Valley Dry

Month	San Joaquin Valley Index Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	793	1,525	732 (92%)
Apr	874	1,429	555 (64%)
May	637	692	55 (9%)
Jun	283	327	44 (15%)
Jul	151	157	6 (4%)
Aug	180	186	6 (3%)
Sep	521	546	24 (5%)
Oct	481	554	73 (15%)
Nov	899	1,117	218 (24%)
Dec	1,369	1,251	-118 (-9%)
Jan	2,497	2,308	-190 (-8%)
Feb	4,548	4,252	-296 (-7%)

Source: CALSIM II Modeling (Node C620)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 33: Monthly Averages of Simulated San Joaquin River Below Merced River (cfs) - San Joaquin Valley Critical

Month	San Joaquin Valley Index Year Type - Critical		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	640	1,327	686 (107%)
Apr	385	505	120 (31%)
May	301	326	25 (8%)
Jun	150	182	32 (21%)
Jul	49	54	5 (11%)
Aug	80	85	5 (7%)
Sep	437	454	17 (4%)
Oct	417	476	59 (14%)
Nov	759	931	172 (23%)
Dec	799	799	0 (0%)
Jan	1,104	1,104	-1 (0%)
Feb	1,734	1,643	-91 (-5%)

Source: CALSIM II Modeling (Node C620)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 34: Monthly Averages of Simulated San Joaquin River Below Tuolumne River (cfs) - San Joaquin Valley All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	4,679	5,256	577 (12%)
Apr	4,223	4,684	460 (11%)
May	4,003	4,026	23 (1%)
Jun	3,089	3,170	82 (3%)
Jul	2,079	2,087	7 (0%)
Aug	1,080	1,087	7 (1%)
Sep	1,289	1,321	32 (2%)
Oct	1,326	1,398	72 (5%)
Nov	1,648	1,829	181 (11%)
Dec	2,336	2,234	-102 (-4%)
Jan	3,549	3,422	-127 (-4%)
Feb	4,739	4,572	-167 (-4%)

Source: CALSIM II Modeling (Node C630)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 35: Monthly Averages of Simulated San Joaquin River Below Tuolumne River (cfs) - San Joaquin Valley Wet

Month	San Joaquin Valley Index Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	10,726	10,943	217 (2%)
Apr	8,884	9,173	289 (3%)
May	8,973	8,848	-124 (-1%)
Jun	8,647	8,832	186 (2%)
Jul	5,689	5,691	3 (0%)
Aug	2,068	2,076	8 (0%)
Sep	1,965	2,007	42 (2%)
Oct	1,886	1,957	71 (4%)
Nov	2,413	2,545	133 (6%)
Dec	3,761	3,607	-154 (-4%)
Jan	6,146	5,943	-203 (-3%)
Feb	6,598	6,413	-186 (-3%)

Source: CALSIM II Modeling (Node C630)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 36: Monthly Averages of Simulated San Joaquin River Below Tuolumne River (cfs) - San Joaquin Valley Above Normal

Month	San Joaquin Valley Index Year Type - Above Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	4,043	4,785	743 (18%)
Apr	3,661	4,488	827 (23%)
May	3,031	3,165	133 (4%)
Jun	1,207	1,244	37 (3%)
Jul	922	938	16 (2%)
Aug	1,079	1,087	8 (1%)
Sep	1,350	1,391	42 (3%)
Oct	1,481	1,572	91 (6%)
Nov	1,579	1,791	212 (13%)
Dec	2,029	2,043	14 (1%)
Jan	2,902	2,761	-141 (-5%)
Feb	4,409	4,175	-235 (-5%)

Source: CALSIM II Modeling (Node C630)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 37: Monthly Averages of Simulated San Joaquin River Below Tuolumne River (cfs) - San Joaquin Valley Below Normal

Month	San Joaquin Valley Index Year Type - Below Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,845	2,594	748 (41%)
Apr	2,692	3,386	694 (26%)
May	2,240	2,348	109 (5%)
Jun	905	949	44 (5%)
Jul	641	648	7 (1%)
Aug	652	659	7 (1%)
Sep	996	1,020	25 (2%)
Oct	1,117	1,184	67 (6%)
Nov	1,353	1,555	201 (15%)
Dec	2,172	1,906	-266 (-12%)
Jan	1,900	1,831	-69 (-4%)
Feb	2,783	2,755	-28 (-1%)

Source: CALSIM II Modeling (Node C630)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 38: Monthly Averages of Simulated San Joaquin River Below Tuolumne River (cfs) - San Joaquin Valley Dry

Month	San Joaquin Valley Index Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,567	2,296	728 (46%)
Apr	1,907	2,424	516 (27%)
May	1,654	1,732	78 (5%)
Jun	680	724	44 (6%)
Jul	526	533	7 (1%)
Aug	603	609	6 (1%)
Sep	967	991	25 (3%)
Oct	1,001	1,073	73 (7%)
Nov	1,287	1,505	218 (17%)
Dec	1,767	1,649	-118 (-7%)
Jan	3,664	3,484	-180 (-5%)
Feb	6,743	6,464	-279 (-4%)

Source: CALSIM II Modeling (Node C630)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 39: Monthly Averages of Simulated San Joaquin River Below Tuolumne River (cfs) - San Joaquin Valley Critical

Month	San Joaquin Valley Index Year Type - Critical		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,077	1,764	686 (64%)
Apr	922	1,036	114 (12%)
May	861	883	22 (3%)
Jun	365	397	32 (9%)
Jul	255	260	5 (2%)
Aug	336	342	5 (2%)
Sep	717	735	17 (2%)
Oct	742	801	59 (8%)
Nov	1,088	1,260	172 (16%)
Dec	1,111	1,111	0 (0%)
Jan	1,483	1,482	-1 (0%)
Feb	2,141	2,050	-91 (-4%)

Source: CALSIM II Modeling (Node C630)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 40: Monthly Averages of Simulated End-of-Month New Melones Reservoir storage (TAF) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	1,618	1,643	25 (2%)
Apr	1,615	1,640	25 (2%)
May	1,654	1,678	24 (1%)
Jun	1,668	1,691	23 (1%)
Jul	1,600	1,623	23 (1%)
Aug	1,516	1,539	23 (1%)
Sep	1,471	1,492	22 (1%)
Oct	1,445	1,466	21 (1%)
Nov	1,450	1,470	21 (1%)
Dec	1,476	1,495	20 (1%)
Jan	1,524	1,544	20 (1%)
Feb	1,560	1,580	20 (1%)

Source: CALSIM II Modeling (Node S10)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 41: Monthly Averages of Simulated End-of-Month New Melones Reservoir storage (TAF) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	1,907	1,917	10 (1%)
Apr	1,949	1,960	10 (1%)
May	2,066	2,076	10 (0%)
Jun	2,122	2,132	10 (0%)
Jul	2,049	2,058	9 (0%)
Aug	1,937	1,946	9 (0%)
Sep	1,866	1,873	8 (0%)
Oct	1,837	1,845	7 (0%)
Nov	1,839	1,846	7 (0%)
Dec	1,851	1,857	6 (0%)
Jan	1,876	1,882	6 (0%)
Feb	1,881	1,888	6 (0%)

Source: CALSIM II Modeling (Node S10)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 42: Monthly Averages of Simulated End-of-Month New Melones Reservoir storage (TAF) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	1,655	1,670	15 (1%)
Apr	1,656	1,671	15 (1%)
May	1,728	1,742	14 (1%)
Jun	1,760	1,772	12 (1%)
Jul	1,693	1,704	11 (1%)
Aug	1,612	1,623	11 (1%)
Sep	1,573	1,584	11 (1%)
Oct	1,529	1,536	7 (0%)
Nov	1,533	1,540	7 (0%)
Dec	1,558	1,565	7 (0%)
Jan	1,606	1,612	7 (0%)
Feb	1,651	1,659	8 (0%)

Source: CALSIM II Modeling (Node S10)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 43: Monthly Averages of Simulated End-of-Month New Melones Reservoir storage (TAF) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	1,563	1,597	34 (2%)
Apr	1,558	1,591	33 (2%)
May	1,617	1,648	30 (2%)
Jun	1,631	1,662	31 (2%)
Jul	1,561	1,592	31 (2%)
Aug	1,481	1,511	31 (2%)
Sep	1,445	1,474	30 (2%)
Oct	1,429	1,458	29 (2%)
Nov	1,450	1,479	28 (2%)
Dec	1,494	1,519	26 (2%)
Jan	1,573	1,598	25 (2%)
Feb	1,628	1,653	25 (2%)

Source: CALSIM II Modeling (Node S10)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 44: Monthly Averages of Simulated End-of-Month New Melones Reservoir storage (TAF) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	1,564	1,590	26 (2%)
Apr	1,530	1,557	27 (2%)
May	1,493	1,519	25 (2%)
Jun	1,468	1,493	25 (2%)
Jul	1,403	1,427	25 (2%)
Aug	1,334	1,359	24 (2%)
Sep	1,302	1,326	25 (2%)
Oct	1,284	1,309	24 (2%)
Nov	1,288	1,312	24 (2%)
Dec	1,330	1,354	24 (2%)
Jan	1,392	1,416	24 (2%)
Feb	1,448	1,473	25 (2%)

Source: CALSIM II Modeling (Node S10)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 45: Monthly Averages of Simulated End-of-Month New Melones Reservoir storage (TAF) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	1,098	1,153	55 (5%)
Apr	1,042	1,097	55 (5%)
May	973	1,027	54 (6%)
Jun	932	984	52 (6%)
Jul	877	928	52 (6%)
Aug	822	873	51 (6%)
Sep	795	846	51 (6%)
Oct	774	824	50 (7%)
Nov	766	816	50 (7%)
Dec	777	827	50 (6%)
Jan	822	872	49 (6%)
Feb	861	911	50 (6%)

Source: CALSIM II Modeling (Node S10)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 46: Monthly Averages of Simulated Stanislaus River Inflow to San Joaquin River (cfs) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	835	753	-81 (-10%)
Apr	1,200	1,197	-3 (0%)
May	1,148	1,168	20 (2%)
Jun	969	977	8 (1%)
Jul	606	611	4 (1%)
Aug	581	581	1 (0%)
Sep	624	631	7 (1%)
Oct	711	714	3 (0%)
Nov	519	525	7 (1%)
Dec	587	599	13 (2%)
Jan	669	671	2 (0%)
Feb	839	831	-8 (-1%)

Source: CALSIM II Modeling (Node C528)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 47: Monthly Averages of Simulated Stanislaus River Inflow to San Joaquin River (cfs) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,581	1,593	12 (1%)
Apr	1,710	1,708	-2 (0%)
May	1,624	1,634	10 (1%)
Jun	1,960	1,960	-1 (0%)
Jul	1,102	1,113	12 (1%)
Aug	1,002	1,003	0 (0%)
Sep	1,116	1,137	21 (2%)
Oct	1,001	1,005	4 (0%)
Nov	758	770	12 (2%)
Dec	962	973	12 (1%)
Jan	1,315	1,315	0 (0%)
Feb	1,444	1,439	-5 (0%)

Source: CALSIM II Modeling (Node C528)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 48: Monthly Averages of Simulated Stanislaus River Inflow to San Joaquin River (cfs) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	541	521	-20 (-4%)
Apr	1,335	1,333	-2 (0%)
May	1,241	1,259	18 (1%)
Jun	774	803	29 (4%)
Jul	417	417	0 (0%)
Aug	417	417	0 (0%)
Sep	443	444	1 (0%)
Oct	664	665	1 (0%)
Nov	467	470	3 (1%)
Dec	454	456	3 (1%)
Jan	394	396	2 (0%)
Feb	415	399	-16 (-4%)

Source: CALSIM II Modeling (Node C528)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 49: Monthly Averages of Simulated Stanislaus River Inflow to San Joaquin River (cfs) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	490	423	-68 (-14%)
Apr	1,151	1,175	24 (2%)
May	1,118	1,157	39 (3%)
Jun	675	660	-15 (-2%)
Jul	433	433	0 (0%)
Aug	413	413	0 (0%)
Sep	420	420	0 (0%)
Oct	642	646	4 (1%)
Nov	429	441	12 (3%)
Dec	516	562	46 (9%)
Jan	503	509	5 (1%)
Feb	714	709	-4 (-1%)

Source: CALSIM II Modeling (Node C528)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 50: Monthly Averages of Simulated Stanislaus River Inflow to San Joaquin River (cfs) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	436	307	-129 (-30%)
Apr	852	828	-25 (-3%)
May	812	832	21 (3%)
Jun	345	359	13 (4%)
Jul	349	350	1 (0%)
Aug	373	373	0 (0%)
Sep	381	381	0 (0%)
Oct	546	548	2 (0%)
Nov	389	388	0 (0%)
Dec	361	361	-1 (0%)
Jan	326	328	2 (1%)
Feb	746	741	-6 (-1%)

Source: CALSIM II Modeling (Node C528)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 51: Monthly Averages of Simulated Stanislaus River Inflow to San Joaquin River (cfs) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	510	221	-289 (-57%)
Apr	537	531	-7 (-1%)
May	563	583	20 (4%)
Jun	294	322	28 (10%)
Jul	312	312	1 (0%)
Aug	341	343	2 (1%)
Sep	340	340	0 (0%)
Oct	461	464	4 (1%)
Nov	349	355	6 (2%)
Dec	328	334	6 (2%)
Jan	253	255	2 (1%)
Feb	235	226	-9 (-4%)

Source: CALSIM II Modeling (Node C528)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 52: Monthly Averages of Simulated San Joaquin River Flow Upstream of Vernalis (cfs) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	6,343	6,838	495 (8%)
Apr	6,101	6,559	457 (7%)
May	6,076	6,120	43 (1%)
Jun	4,696	4,786	90 (2%)
Jul	3,349	3,360	11 (0%)
Aug	2,198	2,205	8 (0%)
Sep	2,412	2,451	39 (2%)
Oct	2,498	2,574	75 (3%)
Nov	2,556	2,744	188 (7%)
Dec	3,366	3,276	-89 (-3%)
Jan	4,793	4,669	-125 (-3%)
Feb	6,130	5,955	-175 (-3%)

Source: CALSIM II Modeling (Node C637)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 53: Monthly Averages of Simulated San Joaquin River Flow Upstream of Vernalis (cfs) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	12,393	12,784	391 (3%)
Apr	10,673	11,124	451 (4%)
May	11,031	10,930	-101 (-1%)
Jun	9,636	9,617	-19 (0%)
Jul	6,842	6,856	15 (0%)
Aug	3,430	3,438	8 (0%)
Sep	3,477	3,539	62 (2%)
Oct	3,374	3,458	84 (2%)
Nov	3,589	3,740	151 (4%)
Dec	4,842	4,712	-130 (-3%)
Jan	7,509	7,330	-179 (-2%)
Feb	7,307	7,181	-126 (-2%)

Source: CALSIM II Modeling (Node C637)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 54: Monthly Averages of Simulated San Joaquin River Flow Upstream of Vernalis (cfs) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	5,804	6,314	510 (9%)
Apr	5,975	6,540	565 (9%)
May	5,403	5,695	292 (5%)
Jun	5,006	5,470	464 (9%)
Jul	2,871	2,877	7 (0%)
Aug	2,093	2,101	8 (0%)
Sep	2,338	2,371	33 (1%)
Oct	2,501	2,571	70 (3%)
Nov	2,390	2,603	213 (9%)
Dec	2,773	2,775	2 (0%)
Jan	3,566	3,523	-43 (-1%)
Feb	4,990	4,979	-11 (0%)

Source: CALSIM II Modeling (Node C637)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 55: Monthly Averages of Simulated San Joaquin River Flow Upstream of Vernalis (cfs) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	4,560	5,196	636 (14%)
Apr	5,290	5,950	660 (12%)
May	5,097	5,124	26 (1%)
Jun	2,387	2,431	44 (2%)
Jul	1,848	1,865	18 (1%)
Aug	1,911	1,918	6 (0%)
Sep	2,122	2,160	38 (2%)
Oct	2,403	2,483	80 (3%)
Nov	2,249	2,463	214 (10%)
Dec	3,831	3,646	-185 (-5%)
Jan	4,897	4,590	-308 (-6%)
Feb	8,368	7,930	-438 (-5%)

Source: CALSIM II Modeling (Node C637)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 56: Monthly Averages of Simulated San Joaquin River Flow Upstream of Vernalis (cfs) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	2,392	2,992	600 (25%)
Apr	3,099	3,558	459 (15%)
May	2,964	3,059	95 (3%)
Jun	1,547	1,603	56 (4%)
Jul	1,356	1,365	9 (1%)
Aug	1,434	1,441	8 (1%)
Sep	1,811	1,835	24 (1%)
Oct	1,956	2,022	66 (3%)
Nov	1,997	2,190	193 (10%)
Dec	2,356	2,270	-86 (-4%)
Jan	3,346	3,299	-47 (-1%)
Feb	5,716	5,535	-181 (-3%)

Source: CALSIM II Modeling (Node C637)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 57: Monthly Averages of Simulated San Joaquin River Flow Upstream of Vernalis (cfs) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,781	2,164	382 (21%)
Apr	1,774	1,896	122 (7%)
May	1,825	1,874	49 (3%)
Jun	1,096	1,154	57 (5%)
Jul	999	1,003	4 (0%)
Aug	1,114	1,120	6 (1%)
Sep	1,418	1,435	16 (1%)
Oct	1,523	1,593	70 (5%)
Nov	1,684	1,884	200 (12%)
Dec	1,732	1,739	6 (0%)
Jan	2,187	2,188	1 (0%)
Feb	2,731	2,589	-142 (-5%)

Source: CALSIM II Modeling (Node C637)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 58: Monthly Averages of Simulated San Joaquin River Inflows to Delta (cfs) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	6,324	6,819	495 (8%)
Apr	6,054	6,511	457 (8%)
May	6,010	6,054	43 (1%)
Jun	4,628	4,719	90 (2%)
Jul	3,255	3,266	11 (0%)
Aug	2,113	2,121	8 (0%)
Sep	2,366	2,405	39 (2%)
Oct	2,484	2,560	75 (3%)
Nov	2,555	2,743	188 (7%)
Dec	3,366	3,277	-89 (-3%)
Jan	4,794	4,669	-125 (-3%)
Feb	6,125	5,950	-175 (-3%)

Source: CALSIM II Modeling (Node C644)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 59: Monthly Averages of Simulated San Joaquin River Inflows to Delta (cfs) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	12,374	12,766	391 (3%)
Apr	10,629	11,080	451 (4%)
May	10,969	10,868	-101 (-1%)
Jun	9,573	9,554	-19 (0%)
Jul	6,754	6,769	15 (0%)
Aug	3,350	3,359	9 (0%)
Sep	3,433	3,496	62 (2%)
Oct	3,360	3,444	84 (3%)
Nov	3,588	3,739	151 (4%)
Dec	4,842	4,712	-130 (-3%)
Jan	7,509	7,330	-179 (-2%)
Feb	7,303	7,177	-126 (-2%)

Source: CALSIM II Modeling (Node C644)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 60: Monthly Averages of Simulated San Joaquin River Inflows to Delta (cfs) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	5,784	6,295	510 (9%)
Apr	5,929	6,494	564 (10%)
May	5,339	5,631	292 (5%)
Jun	4,941	5,405	464 (9%)
Jul	2,780	2,787	7 (0%)
Aug	2,010	2,019	8 (0%)
Sep	2,294	2,327	33 (1%)
Oct	2,488	2,558	70 (3%)
Nov	2,389	2,602	213 (9%)
Dec	2,773	2,776	2 (0%)
Jan	3,566	3,523	-43 (-1%)
Feb	4,985	4,973	-11 (0%)

Source: CALSIM II Modeling (Node C644)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 61: Monthly Averages of Simulated San Joaquin River Inflows to Delta (cfs) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	4,541	5,177	636 (14%)
Apr	5,242	5,902	659 (13%)
May	5,031	5,058	26 (1%)
Jun	2,319	2,364	44 (2%)
Jul	1,753	1,771	18 (1%)
Aug	1,826	1,833	6 (0%)
Sep	2,077	2,115	38 (2%)
Oct	2,389	2,469	80 (3%)
Nov	2,247	2,462	214 (10%)
Dec	3,831	3,646	-185 (-5%)
Jan	4,898	4,590	-308 (-6%)
Feb	8,363	7,925	-438 (-5%)

Source: CALSIM II Modeling (Node C644)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 62: Monthly Averages of Simulated San Joaquin River Inflows to Delta (cfs) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	2,372	2,972	600 (25%)
Apr	3,050	3,508	458 (15%)
May	2,895	2,990	96 (3%)
Jun	1,477	1,534	57 (4%)
Jul	1,258	1,267	10 (1%)
Aug	1,346	1,354	8 (1%)
Sep	1,763	1,787	24 (1%)
Oct	1,941	2,008	66 (3%)
Nov	1,996	2,189	193 (10%)
Dec	2,356	2,270	-86 (-4%)
Jan	3,346	3,299	-47 (-1%)
Feb	5,711	5,530	-181 (-3%)

Source: CALSIM II Modeling (Node C644)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 63: Monthly Averages of Simulated San Joaquin River Inflows to Delta (cfs) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	1,760	2,143	382 (22%)
Apr	1,722	1,844	122 (7%)
May	1,752	1,802	49 (3%)
Jun	1,022	1,080	57 (6%)
Jul	896	900	4 (0%)
Aug	1,022	1,028	6 (1%)
Sep	1,368	1,384	16 (1%)
Oct	1,509	1,579	70 (5%)
Nov	1,683	1,883	200 (12%)
Dec	1,732	1,739	6 (0%)
Jan	2,187	2,188	1 (0%)
Feb	2,725	2,583	-142 (-5%)

Source: CALSIM II Modeling (Node C644)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 64: Monthly Averages of Simulated Delta Outflow (cfs) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	41,682	41,894	212 (1%)
Apr	26,811	26,942	131 (0%)
May	20,246	20,270	24 (0%)
Jun	13,225	13,230	5 (0%)
Jul	8,597	8,589	-8 (0%)
Aug	4,469	4,446	-23 (-1%)
Sep	5,223	5,239	16 (0%)
Oct	5,037	5,079	42 (1%)
Nov	8,791	8,907	116 (1%)
Dec	21,660	21,583	-76 (0%)
Jan	39,507	39,370	-136 (0%)
Feb	47,982	47,574	-408 (-1%)

Source: CALSIM II Modeling (Node C406)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 65: Monthly Averages of Simulated Delta Outflow (cfs) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	78,004	78,024	20 (0%)
Apr	49,563	49,575	11 (0%)
May	37,209	37,097	-113 (0%)
Jun	23,603	23,466	-137 (-1%)
Jul	11,838	11,818	-20 (0%)
Aug	5,098	5,100	1 (0%)
Sep	9,240	9,318	78 (1%)
Oct	6,043	6,145	102 (2%)
Nov	12,138	12,217	78 (1%)
Dec	27,490	27,498	8 (0%)
Jan	50,326	50,185	-142 (0%)
Feb	51,275	50,883	-392 (-1%)

Source: CALSIM II Modeling (Node C406)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 66: Monthly Averages of Simulated Delta Outflow (cfs) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	51,075	51,434	359 (1%)
Apr	27,142	27,309	167 (1%)
May	21,704	21,975	271 (1%)
Jun	12,896	13,240	344 (3%)
Jul	10,031	10,030	-1 (0%)
Aug	4,000	4,000	0 (0%)
Sep	3,943	3,931	-12 (0%)
Oct	4,818	4,846	28 (1%)
Nov	8,725	8,902	178 (2%)
Dec	19,510	19,472	-38 (0%)
Jan	36,293	36,205	-89 (0%)
Feb	44,623	44,525	-98 (0%)

Source: CALSIM II Modeling (Node C406)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 67: Monthly Averages of Simulated Delta Outflow (cfs) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	22,940	23,140	200 (1%)
Apr	18,496	18,833	337 (2%)
May	14,082	14,130	48 (0%)
Jun	8,930	8,953	22 (0%)
Jul	8,140	8,152	13 (0%)
Aug	4,172	4,184	11 (0%)
Sep	3,513	3,491	-22 (-1%)
Oct	5,844	5,828	-16 (0%)
Nov	9,312	9,526	214 (2%)
Dec	25,847	25,597	-249 (-1%)
Jan	40,322	39,948	-374 (-1%)
Feb	57,803	56,484	-1319 (-2%)

Source: CALSIM II Modeling (Node C406)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 68: Monthly Averages of Simulated Delta Outflow (cfs) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	18,145	18,599	454 (3%)
Apr	12,288	12,494	206 (2%)
May	9,634	9,663	29 (0%)
Jun	6,790	6,785	-5 (0%)
Jul	6,157	6,131	-26 (0%)
Aug	4,191	4,143	-48 (-1%)
Sep	3,085	3,069	-15 (0%)
Oct	4,185	4,192	7 (0%)
Nov	6,565	6,615	50 (1%)
Dec	21,591	21,550	-41 (0%)
Jan	33,555	33,506	-49 (0%)
Feb	53,575	53,350	-225 (0%)

Source: CALSIM II Modeling (Node C406)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 69: Monthly Averages of Simulated Delta Outflow (cfs) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	10,759	10,892	132 (1%)
Apr	8,669	8,672	4 (0%)
May	5,141	5,182	42 (1%)
Jun	5,729	5,696	-33 (-1%)
Jul	4,332	4,345	13 (0%)
Aug	4,334	4,236	-98 (-2%)
Sep	3,000	3,000	0 (0%)
Oct	3,411	3,462	51 (1%)
Nov	4,335	4,448	113 (3%)
Dec	6,396	6,245	-151 (-2%)
Jan	27,255	27,223	-31 (0%)
Feb	24,357	24,368	11 (0%)

Source: CALSIM II Modeling (Node C406)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 70: Monthly Averages of Simulated Exports Through Banks and Jones Pumping Plants (cfs) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	7,950	8,253	302 (4%)
Apr	5,278	5,549	271 (5%)
May	5,098	5,125	27 (1%)
Jun	6,250	6,257	8 (0%)
Jul	8,927	8,956	29 (0%)
Aug	8,765	8,752	-13 (0%)
Sep	9,055	9,054	0 (0%)
Oct	8,546	8,617	71 (1%)
Nov	8,863	8,985	122 (1%)
Dec	9,987	10,053	66 (1%)
Jan	10,563	10,577	14 (0%)
Feb	9,460	9,635	175 (2%)

Source: CALSIM II Modeling (Node D418 + D419)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 71: Monthly Averages of Simulated Exports Through Banks and Jones Pumping Plants (cfs) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	9,243	9,687	444 (5%)
Apr	7,598	7,950	352 (5%)
May	7,416	7,429	13 (0%)
Jun	8,189	8,179	-10 (0%)
Jul	10,124	10,157	33 (0%)
Aug	10,945	10,876	-69 (-1%)
Sep	10,893	10,901	8 (0%)
Oct	10,487	10,529	42 (0%)
Nov	10,668	10,665	-4 (0%)
Dec	11,042	11,126	85 (1%)
Jan	11,016	11,026	10 (0%)
Feb	10,295	10,501	206 (2%)

Source: CALSIM II Modeling (Node D418 + D419)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 72: Monthly Averages of Simulated Exports Through Banks and Jones Pumping Plants (cfs) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	10,059	10,205	146 (1%)
Apr	6,462	6,825	363 (6%)
May	5,605	5,653	48 (1%)
Jun	7,190	7,243	53 (1%)
Jul	8,710	8,702	-8 (0%)
Aug	10,850	10,817	-34 (0%)
Sep	10,845	10,823	-22 (0%)
Oct	10,316	10,438	121 (1%)
Nov	9,695	9,925	230 (2%)
Dec	10,754	10,794	41 (0%)
Jan	11,533	11,608	75 (1%)
Feb	10,811	10,866	56 (1%)

Source: CALSIM II Modeling (Node D418 + D419)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 73: Monthly Averages of Simulated Exports Through Banks and Jones Pumping Plants (cfs) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	7,832	8,212	380 (5%)
Apr	5,419	5,751	333 (6%)
May	5,040	5,082	42 (1%)
Jun	6,563	6,597	35 (1%)
Jul	9,615	9,664	49 (1%)
Aug	9,428	9,498	70 (1%)
Sep	9,736	9,735	-1 (0%)
Oct	9,131	9,216	86 (1%)
Nov	9,407	9,567	160 (2%)
Dec	10,229	10,316	86 (1%)
Jan	10,077	10,221	144 (1%)
Feb	9,156	9,589	433 (5%)

Source: CALSIM II Modeling (Node D418 + D419)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 74: Monthly Averages of Simulated Exports Through Banks and Jones Pumping Plants (cfs) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	7,119	7,344	225 (3%)
Apr	3,277	3,472	195 (6%)
May	3,530	3,554	24 (1%)
Jun	4,682	4,699	17 (0%)
Jul	9,335	9,308	-27 (0%)
Aug	7,413	7,527	114 (2%)
Sep	7,541	7,588	47 (1%)
Oct	6,579	6,605	26 (0%)
Nov	8,218	8,302	84 (1%)
Dec	9,255	9,238	-17 (0%)
Jan	10,577	10,524	-53 (0%)
Feb	8,795	8,927	132 (1%)

Source: CALSIM II Modeling (Node D418 + D419)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 75: Monthly Averages of Simulated Exports Through Banks and Jones Pumping Plants (cfs) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	4,423	4,600	177 (4%)
Apr	1,902	1,949	47 (2%)
May	1,989	2,014	25 (1%)
Jun	3,093	3,050	-43 (-1%)
Jul	5,134	5,252	118 (2%)
Aug	3,212	3,055	-157 (-5%)
Sep	4,756	4,691	-64 (-1%)
Oct	4,840	4,968	128 (3%)
Nov	4,452	4,739	287 (6%)
Dec	7,749	7,904	155 (2%)
Jan	9,159	9,064	-95 (-1%)
Feb	7,655	7,655	0 (0%)

Source: CALSIM II Modeling (Node D418 + D419)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 76: Monthly Averages of Simulated Old & Middle River Flow (cfs) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	-4,248	-4,300	-51 (1%)
Apr	-4,802	-5,021	-219 (5%)
May	-4,980	-5,002	-22 (0%)
Jun	-5,195	-5,166	29 (-1%)
Jul	-8,178	-8,201	-23 (0%)
Aug	-8,082	-8,067	15 (0%)
Sep	-8,425	-8,415	10 (0%)
Oct	-7,777	-7,824	-47 (1%)
Nov	-7,948	-8,014	-66 (1%)
Dec	-7,570	-7,681	-111 (1%)
Jan	-7,055	-7,130	-74 (1%)
Feb	-5,491	-5,759	-267 (5%)

Source: CALSIM II Modeling (Node OMFLOW)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 77: Monthly Averages of Simulated Old & Middle River Flow (cfs) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	-2,127	-2,365	-238 (11%)
Apr	-6,488	-6,783	-295 (5%)
May	-6,733	-6,754	-20 (0%)
Jun	-5,006	-5,004	2 (0%)
Jul	-7,875	-7,900	-25 (0%)
Aug	-9,655	-9,587	68 (-1%)
Sep	-9,888	-9,879	9 (0%)
Oct	-9,375	-9,392	-17 (0%)
Nov	-9,348	-9,306	43 (0%)
Dec	-7,691	-7,859	-168 (2%)
Jan	-5,898	-5,999	-101 (2%)
Feb	-5,575	-5,856	-282 (5%)

Source: CALSIM II Modeling (Node OMFLOW)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 78: Monthly Averages of Simulated Old & Middle River Flow (cfs) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	-6,594	-6,492	102 (-2%)
Apr	-5,896	-6,193	-296 (5%)
May	-5,487	-5,509	-22 (0%)
Jun	-6,022	-5,884	138 (-2%)
Jul	-8,186	-8,176	10 (0%)
Aug	-10,101	-10,066	35 (0%)
Sep	-10,100	-10,071	29 (0%)
Oct	-9,398	-9,494	-96 (1%)
Nov	-8,767	-8,928	-161 (2%)
Dec	-8,596	-8,631	-36 (0%)
Jan	-8,637	-8,725	-88 (1%)
Feb	-7,347	-7,403	-56 (1%)

Source: CALSIM II Modeling (Node OMFLOW)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 79: Monthly Averages of Simulated Old & Middle River Flow (cfs) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	-5,179	-5,232	-52 (1%)
Apr	-5,045	-5,306	-261 (5%)
May	-5,040	-5,077	-37 (1%)
Jun	-6,488	-6,503	-15 (0%)
Jul	-9,484	-9,523	-39 (0%)
Aug	-8,838	-8,901	-63 (1%)
Sep	-9,113	-9,102	11 (0%)
Oct	-8,318	-8,378	-60 (1%)
Nov	-8,532	-8,626	-95 (1%)
Dec	-7,645	-7,809	-164 (2%)
Jan	-6,676	-6,950	-274 (4%)
Feb	-3,989	-4,636	-647 (16%)

Source: CALSIM II Modeling (Node OMFLOW)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 80: Monthly Averages of Simulated Old & Middle River Flow (cfs) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	-5,542	-5,470	73 (-1%)
Apr	-3,214	-3,361	-147 (5%)
May	-3,792	-3,807	-15 (0%)
Jun	-5,024	-5,017	7 (0%)
Jul	-9,343	-9,314	29 (0%)
Aug	-7,047	-7,151	-104 (1%)
Sep	-7,130	-7,168	-38 (1%)
Oct	-6,083	-6,091	-8 (0%)
Nov	-7,506	-7,535	-29 (0%)
Dec	-7,435	-7,459	-24 (0%)
Jan	-7,895	-7,872	23 (0%)
Feb	-5,181	-5,418	-237 (5%)

Source: CALSIM II Modeling (Node OMFLOW)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 81: Monthly Averages of Simulated Old & Middle River Flow (cfs) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar	-3,472	-3,457	15 (0%)
Apr	-2,156	-2,191	-35 (2%)
May	-2,385	-2,404	-19 (1%)
Jun	-3,526	-3,463	63 (-2%)
Jul	-5,555	-5,664	-109 (2%)
Aug	-3,327	-3,176	150 (-5%)
Sep	-4,720	-4,656	65 (-1%)
Oct	-4,600	-4,703	-103 (2%)
Nov	-4,081	-4,299	-218 (5%)
Dec	-6,396	-6,535	-138 (2%)
Jan	-7,165	-7,078	87 (-1%)
Feb	-5,674	-5,741	-66 (1%)

Source: CALSIM II Modeling (Node OMFLOW)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 82: Monthly Averages of Simulated Previous Month X2 Position (km) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (km)	Proposed Action (km)	Change from No-Action (km)
Mar	66	66	0 (0%)
Apr	65	65	0 (0%)
May	68	68	0 (0%)
Jun	71	71	0 (0%)
Jul	75	75	0 (0%)
Aug	78	78	0 (0%)
Sep	84	84	0 (0%)
Oct	85	85	0 (0%)
Nov	86	85	0 (0%)
Dec	83	83	0 (0%)
Jan	78	78	0 (0%)
Feb	73	73	0 (0%)

Source: CALSIM II Modeling (Node X2_PRV)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 83: Monthly Averages of Simulated Previous Month X2 Position (km) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (km)	Proposed Action (km)	Change from No-Action (km)
Mar	56	56	0 (0%)
Apr	56	56	0 (0%)
May	59	59	0 (0%)
Jun	62	62	0 (0%)
Jul	67	67	0 (0%)
Aug	73	73	0 (0%)
Sep	81	81	0 (0%)
Oct	80	80	0 (0%)
Nov	82	82	0 (0%)
Dec	80	80	0 (0%)
Jan	75	75	0 (0%)
Feb	70	70	0 (0%)

Source: CALSIM II Modeling (Node X2_PRV)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 84: Monthly Averages of Simulated Previous Month X2 Position (km) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (km)	Proposed Action (km)	Change from No-Action (km)
Mar	62	62	0 (0%)
Apr	60	60	0 (0%)
May	65	64	0 (0%)
Jun	68	67	0 (0%)
Jul	73	73	0 (0%)
Aug	76	75	0 (0%)
Sep	83	83	0 (0%)
Oct	85	85	0 (0%)
Nov	85	85	0 (0%)
Dec	84	84	0 (0%)
Jan	77	77	0 (0%)
Feb	72	72	0 (0%)

Source: CALSIM II Modeling (Node X2_PRV)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 85: Monthly Averages of Simulated Previous Month X2 Position (km) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (km)	Proposed Action (km)	Change from No-Action (km)
Mar	68	68	0 (0%)
Apr	68	68	0 (0%)
May	70	70	0 (0%)
Jun	72	72	0 (0%)
Jul	76	76	0 (0%)
Aug	78	78	0 (0%)
Sep	84	84	0 (0%)
Oct	87	87	0 (0%)
Nov	86	86	0 (0%)
Dec	83	83	0 (0%)
Jan	76	76	0 (0%)
Feb	73	73	0 (0%)

Source: CALSIM II Modeling (Node X2_PRV)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 86: Monthly Averages of Simulated Previous Month X2 Position (km) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (km)	Proposed Action (km)	Change from No-Action (km)
Mar	73	74	0 (0%)
Apr	72	72	0 (0%)
May	74	74	0 (0%)
Jun	76	76	0 (0%)
Jul	80	80	0 (0%)
Aug	81	82	0 (0%)
Sep	85	85	0 (0%)
Oct	89	89	0 (0%)
Nov	87	87	0 (0%)
Dec	85	85	0 (0%)
Jan	78	78	0 (0%)
Feb	75	75	0 (0%)

Source: CALSIM II Modeling (Node X2_PRV)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 87: Monthly Averages of Simulated Previous Month X2 Position (km) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (km)	Proposed Action (km)	Change from No-Action (km)
Mar	78	78	0 (0%)
Apr	77	77	0 (0%)
May	78	78	0 (0%)
Jun	82	82	0 (0%)
Jul	83	83	0 (0%)
Aug	85	85	0 (0%)
Sep	86	86	0 (0%)
Oct	89	89	0 (0%)
Nov	89	89	0 (0%)
Dec	87	87	0 (0%)
Jan	84	84	0 (0%)
Feb	77	77	0 (0%)

Source: CALSIM II Modeling (Node X2_PRV)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 88: Monthly Averages of Simulated Electrical Conductivity at Mendota Pool (umhos/cm) - Restoration All Years

Month	Average of All Years		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	501	529	28 (6%)
Apr	460	484	25 (5%)
May	426	463	36 (8%)
Jun	414	437	23 (6%)
Jul	392	392	0 (0%)
Aug	441	441	0 (0%)
Sep	497	497	0 (0%)
Oct	517	519	2 (0%)
Nov	551	552	1 (0%)
Dec	593	596	3 (1%)
Jan	498	527	29 (6%)
Feb	470	505	35 (7%)

Source: CALSIM II Modeling (Node EC_607_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 89: Monthly Averages of Simulated Electrical Conductivity at Mendota Pool (umhos/cm) - Restoration Wet

Month	Restoration Year Type - Wet		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	153	251	98 (64%)
Apr	132	221	89 (67%)
May	114	211	97 (85%)
Jun	143	235	92 (64%)
Jul	236	237	1 (0%)
Aug	358	358	0 (0%)
Sep	383	383	0 (0%)
Oct	386	397	11 (3%)
Nov	439	439	0 (0%)
Dec	457	457	0 (0%)
Jan	384	433	48 (13%)
Feb	416	425	9 (2%)

Source: CALSIM II Modeling (Node EC_607_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 90: Monthly Averages of Simulated Electrical Conductivity at Mendota Pool (umhos/cm) - Restoration Normal-Wet

Month	Restoration Year Type - Normal-Wet		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	471	500	28 (6%)
Apr	398	421	24 (6%)
May	351	407	56 (16%)
Jun	390	408	18 (5%)
Jul	350	350	0 (0%)
Aug	376	376	0 (0%)
Sep	427	427	0 (0%)
Oct	473	473	0 (0%)
Nov	528	528	0 (0%)
Dec	533	541	8 (2%)
Jan	398	432	34 (9%)
Feb	428	463	35 (8%)

Source: CALSIM II Modeling (Node EC_607_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 91: Monthly Averages of Simulated Electrical Conductivity at Mendota Pool (umhos/cm) - Restoration Normal-Dry

Month	Restoration Year Type - Normal-Dry		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	601	602	1 (0%)
Apr	541	541	0 (0%)
May	508	509	1 (0%)
Jun	464	464	0 (0%)
Jul	388	388	0 (0%)
Aug	451	451	0 (0%)
Sep	535	535	0 (0%)
Oct	555	555	0 (0%)
Nov	564	568	4 (1%)
Dec	598	600	1 (0%)
Jan	581	582	1 (0%)
Feb	492	526	34 (7%)

Source: CALSIM II Modeling (Node EC_607_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 92: Monthly Averages of Simulated Electrical Conductivity at Mendota Pool (umhos/cm) - Restoration Dry

Month	Restoration Year Type - Dry		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	711	711	0 (0%)
Apr	713	714	1 (0%)
May	680	680	0 (0%)
Jun	603	603	0 (0%)
Jul	568	568	0 (0%)
Aug	580	580	0 (0%)
Sep	643	643	0 (0%)
Oct	639	639	0 (0%)
Nov	654	654	0 (0%)
Dec	777	777	0 (0%)
Jan	600	657	58 (10%)
Feb	534	621	88 (16%)

Source: CALSIM II Modeling (Node EC_607_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 93: Monthly Averages of Simulated Electrical Conductivity at Mendota Pool (umhos/cm) - Restoration Critical High

Month	Restoration Year Type - Critical High		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	766	766	0 (0%)
Apr	805	805	0 (0%)
May	782	782	0 (0%)
Jun	685	684	0 (0%)
Jul	676	676	0 (0%)
Aug	641	641	0 (0%)
Sep	677	677	0 (0%)
Oct	667	667	0 (0%)
Nov	700	700	0 (0%)
Dec	851	851	0 (0%)
Jan	719	719	0 (0%)
Feb	717	717	0 (0%)

Source: CALSIM II Modeling (Node EC_607_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 94: Monthly Averages of Simulated Electrical Conductivity at Mendota Pool (umhos/cm) - Restoration Critical Low

Month	Restoration Year Type - Critical Low		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	814	814	0 (0%)
Apr	889	889	0 (0%)
May	882	882	0 (0%)
Jun	766	766	0 (0%)
Jul	785	785	0 (0%)
Aug	693	693	0 (0%)
Sep	699	699	0 (0%)
Oct	690	690	0 (0%)
Nov	742	742	0 (0%)
Dec	924	924	0 (0%)
Jan	732	732	0 (0%)
Feb	115	118	3 (3%)

Source: CALSIM II Modeling (Node EC_607_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 95: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River below Sack Dam (umhos/cm) - Restoration All Years

Month	Average of All Years		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	501	199	-302 (-60%)
Apr	460	472	12 (3%)
May	426	394	-32 (-7%)
Jun	414	378	-36 (-9%)
Jul	392	380	-12 (-3%)
Aug	441	427	-14 (-3%)
Sep	497	463	-34 (-7%)
Oct	517	436	-81 (-16%)
Nov	551	306	-245 (-44%)
Dec	593	596	3 (1%)
Jan	498	527	29 (6%)
Feb	470	340	-130 (-28%)

Source: CALSIM II Modeling (Node EC_608_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 96: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River below Sack Dam (umhos/cm) - Restoration Wet

Month	Restoration Year Type - Wet		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	153	134	-19 (-12%)
Apr	132	108	-24 (-18%)
May	114	102	-12 (-11%)
Jun	143	101	-43 (-30%)
Jul	236	231	-5 (-2%)
Aug	358	347	-11 (-3%)
Sep	383	357	-26 (-7%)
Oct	386	336	-51 (-13%)
Nov	439	243	-196 (-45%)
Dec	457	457	0 (0%)
Jan	384	433	48 (13%)
Feb	416	269	-147 (-35%)

Source: CALSIM II Modeling (Node EC_608_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 97: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River below Sack Dam (umhos/cm) - Restoration Normal-Wet

Month	Restoration Year Type - Normal-Wet		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	471	187	-284 (-60%)
Apr	398	118	-280 (-70%)
May	351	360	10 (3%)
Jun	390	372	-19 (-5%)
Jul	350	339	-11 (-3%)
Aug	376	364	-12 (-3%)
Sep	427	397	-30 (-7%)
Oct	473	404	-69 (-15%)
Nov	528	307	-221 (-42%)
Dec	533	541	8 (2%)
Jan	398	432	34 (9%)
Feb	428	338	-90 (-21%)

Source: CALSIM II Modeling (Node EC_608_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 98: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River below Sack Dam (umhos/cm) - Restoration Normal-Dry

Month	Restoration Year Type - Normal-Dry		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	601	208	-393 (-65%)
Apr	541	982	441 (82%)
May	508	445	-63 (-12%)
Jun	464	420	-44 (-9%)
Jul	388	374	-13 (-3%)
Aug	451	435	-16 (-4%)
Sep	535	494	-41 (-8%)
Oct	555	458	-97 (-17%)
Nov	564	293	-271 (-48%)
Dec	598	600	1 (0%)
Jan	581	582	1 (0%)
Feb	492	328	-164 (-33%)

Source: CALSIM II Modeling (Node EC_608_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 99: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River below Sack Dam (umhos/cm) - Restoration Dry

Month	Restoration Year Type - Dry		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	711	227	-483 (-68%)
Apr	713	528	-185 (-26%)
May	680	586	-94 (-14%)
Jun	603	539	-64 (-11%)
Jul	568	546	-22 (-4%)
Aug	580	557	-23 (-4%)
Sep	643	590	-53 (-8%)
Oct	639	538	-102 (-16%)
Nov	654	368	-287 (-44%)
Dec	777	777	0 (0%)
Jan	600	657	58 (10%)
Feb	534	415	-118 (-22%)

Source: CALSIM II Modeling (Node EC_608_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 100: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River below Sack Dam (umhos/cm) - Restoration Critical High

Month	Restoration Year Type - Critical High		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	766	232	-534 (-70%)
Apr	805	805	0 (0%)
May	782	782	0 (0%)
Jun	685	684	0 (0%)
Jul	676	676	0 (0%)
Aug	641	641	0 (0%)
Sep	677	677	0 (0%)
Oct	667	566	-101 (-15%)
Nov	700	424	-276 (-39%)
Dec	851	851	0 (0%)
Jan	719	719	0 (0%)
Feb	717	535	-182 (-25%)

Source: CALSIM II Modeling (Node EC_608_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 101: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River below Sack Dam (umhos/cm) - Restoration Critical Low

Month	Restoration Year Type - Critical Low		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	814	814	0 (0%)
Apr	889	889	0 (0%)
May	882	882	0 (0%)
Jun	766	766	0 (0%)
Jul	785	785	0 (0%)
Aug	693	693	0 (0%)
Sep	699	699	0 (0%)
Oct	690	539	-151 (-22%)
Nov	742	388	-354 (-48%)
Dec	924	924	0 (0%)
Jan	732	732	0 (0%)
Feb	115	116	0 (0%)

Source: CALSIM II Modeling (Node EC_608_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 102: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Merced River Confluence (umhos/cm) - Restoration All Years

Month	Average of All Years		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	1,037	745	-291 (-28%)
Apr	878	655	-223 (-25%)
May	945	887	-58 (-6%)
Jun	1,061	1,007	-55 (-5%)
Jul	1,147	1,135	-13 (-1%)
Aug	954	944	-10 (-1%)
Sep	1,052	1,024	-28 (-3%)
Oct	699	668	-31 (-4%)
Nov	882	779	-103 (-12%)
Dec	943	956	13 (1%)
Jan	868	884	16 (2%)
Feb	891	878	-13 (-1%)

Source: CALSIM II Modeling (Node EC_620_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 103: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Merced River Confluence (umhos/cm) - Restoration Wet

Month	Restoration Year Type - Wet		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	741	697	-44 (-6%)
Apr	581	467	-114 (-20%)
May	534	429	-105 (-20%)
Jun	467	375	-92 (-20%)
Jul	449	447	-1 (0%)
Aug	444	437	-7 (-2%)
Sep	715	682	-33 (-5%)
Oct	559	538	-22 (-4%)
Nov	844	751	-93 (-11%)
Dec	939	944	5 (1%)
Jan	785	804	18 (2%)
Feb	803	779	-24 (-3%)

Source: CALSIM II Modeling (Node EC_620_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 104: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Merced River Confluence (umhos/cm) - Restoration Normal-Wet

Month	Restoration Year Type - Normal-Wet		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	939	712	-227 (-24%)
Apr	863	551	-312 (-36%)
May	844	793	-51 (-6%)
Jun	1,028	995	-32 (-3%)
Jul	1,086	1,069	-17 (-2%)
Aug	789	781	-8 (-1%)
Sep	972	942	-31 (-3%)
Oct	629	599	-30 (-5%)
Nov	856	763	-94 (-11%)
Dec	874	879	5 (1%)
Jan	818	840	21 (3%)
Feb	808	802	-6 (-1%)

Source: CALSIM II Modeling (Node EC_620_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 105: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Merced River Confluence (umhos/cm) - Restoration Normal-Dry

Month	Restoration Year Type - Normal-Dry		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	1,144	751	-393 (-34%)
Apr	952	622	-331 (-35%)
May	1,137	1,082	-54 (-5%)
Jun	1,251	1,195	-56 (-4%)
Jul	1,402	1,387	-14 (-1%)
Aug	1,195	1,181	-13 (-1%)
Sep	1,221	1,193	-28 (-2%)
Oct	784	744	-40 (-5%)
Nov	901	782	-119 (-13%)
Dec	980	1,015	35 (4%)
Jan	927	935	9 (1%)
Feb	946	918	-28 (-3%)

Source: CALSIM II Modeling (Node EC_620_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 106: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Merced River Confluence (umhos/cm) - Restoration Dry

Month	Restoration Year Type - Dry		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	1,267	780	-487 (-38%)
Apr	1,021	958	-63 (-6%)
May	1,206	1,166	-40 (-3%)
Jun	1,385	1,313	-72 (-5%)
Jul	1,541	1,520	-21 (-1%)
Aug	1,317	1,298	-19 (-1%)
Sep	1,246	1,220	-25 (-2%)
Oct	827	794	-33 (-4%)
Nov	925	819	-107 (-12%)
Dec	997	997	0 (0%)
Jan	935	958	24 (3%)
Feb	1,036	1,039	2 (0%)

Source: CALSIM II Modeling (Node EC_620_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 107: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Merced River Confluence (umhos/cm) - Restoration Critical High

Month	Restoration Year Type - Critical High		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	1,354	800	-554 (-41%)
Apr	1,268	1,268	1 (0%)
May	1,271	1,273	1 (0%)
Jun	1,477	1,477	0 (0%)
Jul	1,532	1,533	0 (0%)
Aug	1,373	1,373	0 (0%)
Sep	1,235	1,235	0 (0%)
Oct	790	762	-28 (-4%)
Nov	922	828	-94 (-10%)
Dec	994	994	0 (0%)
Jan	919	919	0 (0%)
Feb	1,040	1,024	-16 (-2%)

Source: CALSIM II Modeling (Node EC_620_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 108: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Merced River Confluence (umhos/cm) - Restoration Critical Low

Month	Restoration Year Type - Critical Low		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	1,603	1,603	0 (0%)
Apr	957	958	1 (0%)
May	1,006	1,003	-3 (0%)
Jun	1,309	1,309	0 (0%)
Jul	1,476	1,476	0 (0%)
Aug	1,423	1,423	0 (0%)
Sep	1,314	1,314	0 (0%)
Oct	788	753	-35 (-4%)
Nov	963	860	-103 (-11%)
Dec	1,034	1,034	0 (0%)
Jan	1,027	1,027	0 (0%)
Feb	731	910	179 (24%)

Source: CALSIM II Modeling (Node EC_620_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Restoration Year Type

Key:

WY = Water Year

Table 109: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Tuolumne River Confluence (umhos/cm) - San Joaquin Valley All Years

Month	Average of All Years		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	858	688	-170 (-20%)
Apr	609	526	-82 (-14%)
May	665	654	-12 (-2%)
Jun	886	869	-17 (-2%)
Jul	944	943	-1 (0%)
Aug	854	853	-1 (0%)
Sep	819	811	-8 (-1%)
Oct	732	714	-19 (-3%)
Nov	773	710	-63 (-8%)
Dec	915	921	5 (1%)
Jan	838	844	6 (1%)
Feb	826	815	-11 (-1%)

Source: CALSIM II Modeling (Node EC_630_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 110: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Tuolumne River Confluence (umhos/cm) - San Joaquin Valley Wet

Month	San Joaquin Valley Index Year Type - Wet		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	498	477	-21 (-4%)
Apr	384	356	-29 (-7%)
May	406	386	-20 (-5%)
Jun	445	412	-33 (-7%)
Jul	518	518	0 (0%)
Aug	532	531	-1 (0%)
Sep	610	600	-10 (-2%)
Oct	571	561	-11 (-2%)
Nov	673	628	-45 (-7%)
Dec	818	821	3 (0%)
Jan	705	714	8 (1%)
Feb	652	642	-10 (-2%)

Source: CALSIM II Modeling (Node EC_630_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 111: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Tuolumne River Confluence (umhos/cm) - San Joaquin Valley Above

Month	San Joaquin Valley Index Year Type - Above Normal		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	666	558	-108 (-16%)
Apr	522	433	-90 (-17%)
May	624	611	-12 (-2%)
Jun	895	889	-6 (-1%)
Jul	933	931	-2 (0%)
Aug	748	747	-1 (0%)
Sep	750	741	-9 (-1%)
Oct	648	631	-17 (-3%)
Nov	727	669	-58 (-8%)
Dec	866	865	-1 (0%)
Jan	819	824	5 (1%)
Feb	795	784	-11 (-1%)

Source: CALSIM II Modeling (Node EC_630_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 112: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Tuolumne River Confluence (umhos/cm) - San Joaquin Valley Below

Month	San Joaquin Valley Index Year Type - Below Normal		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	1,023	786	-237 (-23%)
Apr	630	471	-159 (-25%)
May	708	700	-8 (-1%)
Jun	999	986	-13 (-1%)
Jul	1,052	1,050	-2 (0%)
Aug	945	944	-2 (0%)
Sep	894	887	-7 (-1%)
Oct	765	748	-17 (-2%)
Nov	814	745	-68 (-8%)
Dec	936	948	13 (1%)
Jan	897	901	4 (0%)
Feb	934	905	-29 (-3%)

Source: CALSIM II Modeling (Node EC_630_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 113: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Tuolumne River Confluence (umhos/cm) - San Joaquin Valley Dry

Month	San Joaquin Valley Index Year Type - Dry		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	1,080	823	-257 (-24%)
Apr	721	575	-146 (-20%)
May	778	767	-12 (-1%)
Jun	1,068	1,057	-11 (-1%)
Jul	1,097	1,097	0 (0%)
Aug	983	981	-1 (0%)
Sep	916	909	-7 (-1%)
Oct	829	807	-22 (-3%)
Nov	830	752	-77 (-9%)
Dec	981	998	17 (2%)
Jan	876	887	11 (1%)
Feb	789	773	-16 (-2%)

Source: CALSIM II Modeling (Node EC_630_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 114: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Tuolumne River Confluence (umhos/cm) - San Joaquin Valley Critical

Month	San Joaquin Valley Index Year Type - Critical		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	1,274	945	-330 (-26%)
Apr	923	880	-43 (-5%)
May	970	970	0 (0%)
Jun	1,299	1,288	-11 (-1%)
Jul	1,380	1,380	1 (0%)
Aug	1,266	1,264	-1 (0%)
Sep	1,064	1,058	-6 (-1%)
Oct	961	931	-30 (-3%)
Nov	895	818	-77 (-9%)
Dec	1,046	1,046	0 (0%)
Jan	981	981	0 (0%)
Feb	1,068	1,075	6 (1%)

Source: CALSIM II Modeling (Node EC_630_FINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 115: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - San Joaquin Valley All Years

Month	Average of All Years		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	703	643	-60 (-8%)
Apr	443	418	-25 (-6%)
May	447	442	-5 (-1%)
Jun	567	563	-3 (-1%)
Jul	613	615	1 (0%)
Aug	565	565	0 (0%)
Sep	543	542	-1 (0%)
Oct	578	573	-5 (-1%)
Nov	599	570	-28 (-5%)
Dec	755	756	1 (0%)
Jan	728	732	3 (0%)
Feb	727	724	-4 (0%)

Source: CALSIM II Modeling (Node VERNWQFINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 116: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - San Joaquin Valley Wet

Month	San Joaquin Valley Index Year Type - Wet		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	401	391	-10 (-3%)
Apr	309	300	-9 (-3%)
May	302	297	-5 (-2%)
Jun	385	371	-14 (-4%)
Jul	480	480	0 (0%)
Aug	426	426	0 (0%)
Sep	427	423	-4 (-1%)
Oct	477	473	-4 (-1%)
Nov	502	483	-19 (-4%)
Dec	664	663	-1 (0%)
Jan	612	617	5 (1%)
Feb	568	564	-4 (-1%)

Source: CALSIM II Modeling (Node VERNWQFINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 117: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - San Joaquin Valley Above Normal

Month	San Joaquin Valley Index Year Type - Above Normal		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	537	490	-46 (-9%)
Apr	392	359	-33 (-8%)
May	383	379	-4 (-1%)
Jun	548	551	4 (1%)
Jul	646	646	1 (0%)
Aug	564	564	0 (0%)
Sep	534	533	-1 (0%)
Oct	546	539	-6 (-1%)
Nov	580	549	-30 (-5%)
Dec	752	747	-5 (-1%)
Jan	714	718	4 (1%)
Feb	708	706	-3 (0%)

Source: CALSIM II Modeling (Node VERNWQFINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 118: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - San Joaquin Valley Below Normal

Month	San Joaquin Valley Index Year Type - Below Normal		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	882	760	-122 (-14%)
Apr	452	396	-56 (-12%)
May	465	460	-5 (-1%)
Jun	632	634	2 (0%)
Jul	661	662	1 (0%)
Aug	619	620	1 (0%)
Sep	590	590	0 (0%)
Oct	602	597	-5 (-1%)
Nov	635	604	-31 (-5%)
Dec	766	769	4 (0%)
Jan	771	771	0 (0%)
Feb	833	826	-7 (-1%)

Source: CALSIM II Modeling (Node VERNWQFINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 119: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - San Joaquin Valley Dry

Month	San Joaquin Valley Index Year Type - Dry		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	926	820	-106 (-11%)
Apr	519	474	-45 (-9%)
May	536	535	-1 (0%)
Jun	694	696	2 (0%)
Jul	686	687	1 (0%)
Aug	635	636	1 (0%)
Sep	596	597	1 (0%)
Oct	628	624	-4 (-1%)
Nov	646	612	-34 (-5%)
Dec	799	810	11 (1%)
Jan	740	749	9 (1%)
Feb	668	670	2 (0%)

Source: CALSIM II Modeling (Node VERNWQFINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 120: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - San Joaquin Valley Critical

Month	San Joaquin Valley Index Year Type - Critical		
	No-Action Alternative (umhos/cm)	Proposed Action (umhos/cm)	Change from No-Action (umhos/cm)
Mar	995	936	-58 (-6%)
Apr	626	624	-2 (0%)
May	642	634	-8 (-1%)
Jun	702	699	-3 (0%)
Jul	684	687	3 (0%)
Aug	671	672	1 (0%)
Sep	646	649	2 (0%)
Oct	704	698	-6 (-1%)
Nov	698	664	-35 (-5%)
Dec	851	849	-2 (0%)
Jan	876	875	-1 (0%)
Feb	955	950	-6 (-1%)

Source: CALSIM II Modeling (Node VERNWQFINAL)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the San Joaquin Valley Index Year Type

Key:

WY = Water Year

Table 121: Monthly Averages of Simulated San Luis Storage (TAF) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	1,940	1,947	7 (0%)
Apr	1,846	1,868	22 (1%)
May	1,621	1,633	12 (1%)
Jun	1,257	1,257	0 (0%)
Jul	981	977	-4 (0%)
Aug	750	741	-9 (-1%)
Sep	771	761	-9 (-1%)
Oct	885	876	-8 (-1%)
Nov	1,104	1,102	-2 (0%)
Dec	1,419	1,417	-2 (0%)
Jan	1,732	1,723	-9 (-1%)
Feb	1,834	1,830	-4 (0%)

Source: CALSIM II Modeling (Node S11+S12)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key:

WY = Water Year

Table 122: Monthly Averages of Simulated San Luis Storage (TAF) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	2,028	2,028	0 (0%)
Apr	1,998	2,010	12 (1%)
May	1,849	1,844	-4 (0%)
Jun	1,517	1,496	-21 (-1%)
Jul	1,197	1,170	-27 (-2%)
Aug	969	936	-33 (-3%)
Sep	1,025	992	-33 (-3%)
Oct	1,180	1,148	-32 (-3%)
Nov	1,410	1,380	-31 (-2%)
Dec	1,676	1,644	-31 (-2%)
Jan	1,881	1,844	-36 (-2%)
Feb	1,943	1,918	-25 (-1%)

Source: CALSIM II Modeling (Node S11+S12)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 123: Monthly Averages of Simulated San Luis Storage (TAF) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	2,010	2,007	-3 (0%)
Apr	1,937	1,958	21 (1%)
May	1,685	1,693	8 (0%)
Jun	1,282	1,268	-13 (-1%)
Jul	887	871	-17 (-2%)
Aug	680	661	-19 (-3%)
Sep	712	694	-18 (-3%)
Oct	833	822	-11 (-1%)
Nov	1,039	1,042	3 (0%)
Dec	1,342	1,348	5 (0%)
Jan	1,693	1,692	-1 (0%)
Feb	1,869	1,863	-5 (0%)

Source: CALSIM II Modeling (Node S11+S12)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 124: Monthly Averages of Simulated San Luis Storage (TAF) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	1,955	1,950	-5 (0%)
Apr	1,859	1,876	17 (1%)
May	1,604	1,610	7 (0%)
Jun	1,211	1,212	1 (0%)
Jul	942	938	-3 (0%)
Aug	706	706	0 (0%)
Sep	736	733	-3 (0%)
Oct	854	849	-5 (-1%)
Nov	1,090	1,088	-2 (0%)
Dec	1,405	1,407	2 (0%)
Jan	1,689	1,690	0 (0%)
Feb	1,767	1,781	14 (1%)

Source: CALSIM II Modeling (Node S11+S12)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 125: Monthly Averages of Simulated San Luis Storage (TAF) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	1,930	1,953	23 (1%)
Apr	1,761	1,802	41 (2%)
May	1,476	1,513	37 (3%)
Jun	1,075	1,104	30 (3%)
Jul	899	916	17 (2%)
Aug	670	685	15 (2%)
Sep	664	678	14 (2%)
Oct	730	743	13 (2%)
Nov	985	1,002	17 (2%)
Dec	1,334	1,346	12 (1%)
Jan	1,701	1,704	2 (0%)
Feb	1,799	1,802	3 (0%)

Source: CALSIM II Modeling (Node S11+S12)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 126: Monthly Averages of Simulated San Luis Storage (TAF) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (TAF)	Proposed Action (TAF)	Change from No-Action (TAF)
Mar	1,678	1,698	21 (1%)
Apr	1,539	1,561	22 (1%)
May	1,297	1,319	21 (2%)
Jun	992	1,009	17 (2%)
Jul	775	799	24 (3%)
Aug	516	523	7 (1%)
Sep	481	487	6 (1%)
Oct	565	575	10 (2%)
Nov	703	727	24 (3%)
Dec	1,083	1,113	29 (3%)
Jan	1,544	1,556	13 (1%)
Feb	1,693	1,707	13 (1%)

Source: CALSIM II Modeling (Node S11+S12)

Notes:

Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key:

WY = Water Year

Table 128: Simulated End-of-Month Millerton Lake storage (TAF) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								226	265	338	421	439
1922	Normal-Wet	404	249	259	524	505	346	301	323	373	439	439	439
1923	Normal-Wet	478	524	523	472	370	237	217	249	294	321	348	348
1924	Critical High	394	430	421	309	198	152	170	164	182	212	245	316
1925	Normal-Dry	341	429	485	449	335	218	201	233	271	305	335	368
1926	Normal-Dry	413	523	524	449	272	153	158	171	229	291	346	439
1927	Normal-Wet	479	492	519	524	438	292	256	286	383	436	439	439
1928	Normal-Dry	478	524	523	438	264	164	165	156	170	191	214	220
1929	Dry	244	261	316	279	214	148	172	168	176	190	213	237
1930	Dry	267	332	311	303	218	148	173	174	189	205	227	240
1931	Critical High	255	302	311	239	165	134	160	157	156	219	290	290
1932	Normal-Wet	479	457	420	471	422	267	224	246	289	316	355	358
1933	Normal-Dry	399	425	335	364	288	194	201	209	225	271	326	349
1934	Dry	435	523	493	365	227	174	182	177	195	237	310	381
1935	Normal-Wet	398	447	483	524	404	262	233	262	313	344	395	395
1936	Normal-Wet	479	520	524	496	375	239	209	227	269	316	363	439
1937	Normal-Wet	479	461	524	524	422	268	229	258	306	428	439	329
1938	Wet	352	329	363	524	524	446	368	351	375	396	439	425
1939	Dry	478	524	509	389	249	153	167	192	207	222	353	353
1940	Normal-Wet	479	502	524	515	369	224	197	216	258	358	439	439
1941	Wet	479	426	479	524	523	386	321	339	384	438	439	439
1942	Normal-Wet	438	459	424	524	501	349	297	321	394	439	412	439
1943	Normal-Wet	479	524	524	491	374	241	213	231	277	310	352	352
1944	Normal-Dry	425	416	444	417	324	222	208	226	293	359	413	439
1945	Normal-Wet	479	456	461	466	404	265	231	289	390	439	439	439
1946	Normal-Wet	478	523	524	494	356	219	199	234	325	422	439	439
1947	Normal-Dry	478	519	523	417	256	159	170	178	198	218	242	242
1948	Normal-Dry	233	284	334	370	279	174	183	210	235	263	293	310
1949	Normal-Dry	329	405	481	464	293	183	188	211	239	268	321	394
1950	Normal-Dry	416	521	523	480	321	191	189	217	377	381	439	439
1951	Normal-Wet	478	524	491	438	324	221	207	218	244	320	439	439
1952	Wet	347	358	473	524	523	420	364	368	394	439	439	439
1953	Normal-Dry	478	501	430	367	318	221	209	214	236	262	303	338
1954	Normal-Dry	393	500	523	468	316	188	169	191	225	268	320	356
1955	Normal-Dry	387	391	391	414	283	193	198	206	225	351	351	351
1956	Wet	479	476	433	524	498	383	342	380	428	439	439	439
1957	Normal-Dry	473	456	428	470	360	235	213	234	267	321	373	362
1958	Wet	291	307	487	524	504	382	345	366	398	424	439	439
1959	Normal-Dry	478	523	500	401	249	139	174	186	196	210	232	232
1960	Dry	305	399	426	358	228	175	186	170	186	225	252	272
1961	Critical High	288	348	341	275	176	154	172	171	180	209	239	403
1962	Normal-Wet	419	471	478	482	397	251	218	247	292	316	367	439
1963	Normal-Wet	478	459	420	455	400	263	234	264	355	410	439	439
1964	Dry	478	484	469	399	255	178	185	178	213	348	439	439
1965	Normal-Wet	462	498	491	456	388	307	277	298	420	439	439	439
1966	Normal-Dry	478	523	523	425	252	147	157	154	185	405	439	439
1967	Wet	339	329	359	524	524	448	372	320	329	351	390	390
1968	Dry	476	523	518	413	271	172	179	181	221	276	351	268
1969	Wet	166	133	393	524	524	448	362	336	358	396	439	439
1970	Normal-Dry	479	494	480	462	332	224	207	213	254	337	417	439
1971	Normal-Dry	466	487	455	418	311	217	209	229	265	332	383	383
1972	Normal-Dry	478	480	471	402	243	149	185	191	224	276	358	439
1973	Normal-Wet	404	380	524	524	399	257	225	263	376	439	439	439
1974	Normal-Wet	479	524	524	524	407	278	246	277	330	376	426	439
1975	Normal-Wet	479	379	372	488	383	237	214	270	335	374	405	405
1976	Critical High	478	496	474	338	197	148	185	185	186	198	216	219
1977	Critical Low	221	242	215	182	142	131	152	151	152	229	387	395
1978	Wet	401	329	347	524	524	438	447	412	429	439	439	439
1979	Normal-Wet	479	506	524	504	359	226	204	237	297	340	380	380
1980	Wet	479	463	511	524	524	423	363	380	414	439	439	439
1981	Normal-Dry	478	523	523	438	264	166	176	180	252	322	439	394
1982	Wet	356	505	524	524	524	463	463	439	432	418	412	308
1983	Wet	370	207	131	524	524	519	465	425	437	407	439	439
1984	Normal-Wet	479	523	523	467	334	224	215	246	318	373	423	439
1985	Normal-Dry	478	523	522	419	255	150	169	181	221	294	388	393
1986	Wet	479	502	489	524	457	317	282	321	362	388	428	439
1987	Dry	478	523	523	411	269	169	174	181	206	235	295	295
1988	Dry	366	422	407	332	233	162	172	171	184	208	235	259
1989	Normal-Dry	328	453	461	376	252	165	175	191	215	237	267	287
1990	Dry	328	421	402	315	213	171	181	169	169	184	201	203
1991	Normal-Dry	258	289	294	312	232	152	179	186	210	237	266	266
1992	Dry	360	452	469	345	241	165	170	173	191	227	412	429
1993	Wet	456	376	460	524	519	374	312	326	358	385	423	439
1994	Dry	478	518	521	430	274	172	180	210	255	308	439	353
1995	Wet	426	351	303	524	524	493	394	311	308	338	404	404
1996	Normal-Wet	479	524	524	524	416	283	253	278	398	429	351	422
1997	Wet	479	524	524	500	362	225	206	232	286	335	439	439
1998	Wet	479	520	353	524	524	457	372	326	348	382	439	439
1999	Normal-Wet	478	511	523	500	355	227	206	226	257	284	366	366
2000	Normal-Wet	479	522	524	509	353	221	201	231	279	308	347	364
2001	Normal-Dry	452	496	523	431	260	162	171	169	192	257	326	364
2002	Normal-Dry	394	507	523	463	306	184	180	179	245	297	364	408
2003	Normal-Wet	434	444	464	506	347	229	207					
	Average	418	444	452	446	348	245	230	241	280	325	369	379
	Wet	398	383	414	522	506	414	361	352	378	401	430	425
	Normal-Wet	463	475	484	496	392	257	228	257	322	373	404	412
	Normal-Dry	417	466	467	421	286	181	185	196	235	290	340	360
	Dry	391	449	447	362	241	166	177	179	199	239	311	311
	Critical High	354	394	387	290	184	147	172	169	176	210	247	307
	Critical Low	221	242	215	182	142	131	152	151	152	229	387	395
	Dry and Critical	372	424	419	334	222	159	174	175	191	231	300	315

Table 129: Simulated End-of-Month Millerton Lake storage (TAF) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								215	233	306	389	439
1922	Normal-Wet	318	179	285	524	489	312	253	263	292	386	439	439
1923	Normal-Wet	439	437	506	458	364	237	214	248	293	321	348	348
1924	Critical High	344	380	376	276	182	145	165	150	149	179	212	270
1925	Normal-Dry	248	308	378	369	289	193	183	208	227	261	292	323
1926	Normal-Dry	322	428	523	452	287	173	176	178	217	279	334	439
1927	Normal-Wet	451	452	523	524	419	257	209	226	302	355	400	400
1928	Normal-Dry	456	479	523	442	278	183	181	162	155	177	200	194
1929	Dry	169	197	276	251	183	148	179	154	136	152	179	192
1930	Dry	174	251	255	263	181	146	179	171	180	199	223	239
1931	Critical High	203	250	264	205	148	131	155	144	131	194	265	265
1932	Normal-Wet	406	381	407	514	450	280	225	235	257	285	323	311
1933	Normal-Dry	305	303	227	283	241	170	183	184	180	227	283	305
1934	Dry	342	429	403	298	195	159	170	160	161	203	276	336
1935	Normal-Wet	299	341	459	523	385	226	185	201	232	262	313	313
1936	Normal-Wet	479	522	523	515	385	240	200	206	228	275	322	439
1937	Normal-Wet	444	387	490	524	404	234	181	198	225	424	439	282
1938	Wet	307	341	347	524	524	430	339	308	311	331	373	343
1939	Dry	399	523	506	389	255	163	174	188	183	199	330	330
1940	Normal-Wet	479	496	523	523	362	204	165	171	193	293	417	439
1941	Wet	479	452	452	524	524	375	300	306	330	425	438	439
1942	Normal-Wet	462	409	380	514	476	304	238	248	301	357	412	439
1943	Normal-Wet	479	524	523	508	383	241	204	210	236	269	311	311
1944	Normal-Dry	329	304	360	348	266	184	187	200	247	315	369	439
1945	Normal-Wet	454	433	504	518	438	281	234	278	359	439	438	439
1946	Normal-Wet	451	471	523	491	353	215	190	214	285	382	439	439
1947	Normal-Dry	465	472	523	418	266	170	178	175	175	196	220	220
1948	Normal-Dry	151	166	228	293	236	159	174	193	199	228	258	265
1949	Normal-Dry	238	285	374	384	251	167	179	195	203	233	286	349
1950	Normal-Dry	324	394	457	434	297	183	184	204	359	381	438	439
1951	Normal-Wet	452	443	435	388	278	188	188	194	200	277	428	428
1952	Wet	320	272	440	524	514	391	318	309	313	359	438	439
1953	Normal-Dry	440	442	393	331	279	191	190	190	192	219	260	293
1954	Normal-Dry	301	379	495	450	317	200	181	193	208	251	304	328
1955	Normal-Dry	311	285	297	344	242	171	182	182	181	351	351	351
1956	Wet	478	506	475	524	493	365	302	314	336	362	403	425
1957	Normal-Dry	418	384	380	426	318	209	201	217	230	285	337	405
1958	Wet	285	259	393	524	499	361	290	281	287	307	358	405
1959	Normal-Dry	474	521	495	399	253	147	178	180	170	184	206	206
1960	Dry	218	307	338	293	196	161	174	166	183	222	249	272
1961	Critical High	236	296	295	242	159	147	167	157	147	177	206	357
1962	Normal-Wet	322	360	427	491	405	256	217	235	260	285	335	439
1963	Normal-Wet	448	405	408	473	410	266	228	246	317	372	414	414
1964	Dry	396	407	400	346	228	168	178	163	177	314	438	439
1965	Normal-Wet	411	364	378	400	335	260	228	240	342	429	438	439
1966	Normal-Dry	477	523	523	424	258	153	159	147	158	377	438	439
1967	Wet	356	283	266	524	524	450	359	285	272	294	332	332
1968	Dry	355	422	450	366	225	169	188	167	179	238	351	331
1969	Wet	246	172	346	524	524	432	333	293	294	331	438	439
1970	Normal-Dry	478	470	474	449	311	208	200	199	221	304	384	415
1971	Normal-Dry	401	404	397	367	263	183	190	204	220	288	339	339
1972	Normal-Dry	413	385	386	338	210	137	178	175	189	242	324	414
1973	Normal-Wet	405	374	457	523	380	221	176	201	294	397	439	439
1974	Normal-Wet	478	433	505	523	387	242	197	215	247	293	343	377
1975	Normal-Wet	403	312	382	523	400	237	201	256	320	358	389	389
1976	Critical High	425	443	427	303	180	141	181	183	188	200	218	223
1977	Critical Low	224	246	218	185	143	131	151	139	131	208	367	393
1978	Wet	386	357	340	524	524	440	433	378	375	396	439	439
1979	Normal-Wet	479	508	523	523	362	215	181	201	241	284	380	380
1980	Wet	479	480	501	524	524	424	342	303	304	325	361	335
1981	Normal-Dry	364	390	449	385	243	166	180	176	228	299	420	420
1982	Wet	391	465	490	524	524	444	428	437	432	418	412	409
1983	Wet	409	217	131	524	524	507	441	387	437	407	439	439
1984	Normal-Wet	478	471	515	461	333	226	213	234	287	341	392	403
1985	Normal-Dry	407	475	522	421	267	165	181	183	203	276	371	393
1986	Wet	479	509	475	524	439	282	235	260	281	307	346	347
1987	Dry	374	446	482	383	236	174	187	171	168	200	264	264
1988	Dry	276	344	355	295	197	160	178	157	144	171	200	214
1989	Normal-Dry	236	339	379	316	203	159	180	176	173	199	231	242
1990	Dry	234	324	310	246	180	155	168	153	134	150	167	158
1991	Normal-Dry	167	177	216	256	183	147	186	171	168	198	231	231
1992	Dry	266	371	414	305	204	163	176	159	151	189	377	439
1993	Wet	479	401	523	524	509	353	281	283	294	322	359	361
1994	Dry	394	433	444	374	244	162	174	196	221	274	438	412
1995	Wet	360	236	279	524	524	481	367	271	247	276	341	341
1996	Normal-Wet	420	399	523	522	396	246	204	216	315	429	351	422
1997	Wet	478	523	522	459	327	195	173	189	223	272	382	439
1998	Wet	402	418	285	524	524	444	345	285	285	319	382	390
1999	Normal-Wet	416	393	448	467	322	208	200	214	225	253	336	336
2000	Normal-Wet	464	491	523	523	353	208	177	195	223	252	291	292
2001	Normal-Dry	334	352	459	386	245	165	178	167	171	236	306	333
2002	Normal-Dry	315	399	443	404	277	175	175	167	213	265	333	367
2003	Normal-Wet	353	312	363	425	282	188	185					
	Average	371	382	414	425	332	233	216	215	236	287	342	359
	Wet	396	368	392	520	501	398	330	306	314	341	390	395
	Normal-Wet	428	412	461	495	382	240	204	222	268	333	381	392
	Normal-Dry	349	378	413	380	262	173	182	184	204	261	313	339
	Dry	300	371	386	317	210	161	177	167	168	209	291	302
	Critical High	302	343	340	257	167	141	167	159	154	187	225	279
	Critical Low	224	246	218	185	143	131	151	139	131	208	367	393
	Dry and Critical	296	357	365	295	196	154	173	163	163	204	280	302

Table 130: Simulated Friant-Kern Canal Diversions (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								81	67	16	16	1,236
1922	Normal-Wet	2,177	3,130	3,664	4,441	3,724	3,261	1,823	637	163	510	1,257	1,521
1923	Normal-Wet	1,057	2,287	3,225	3,234	3,399	2,978	1,667	587	154	100	100	100
1924	Critical High	339	427	603	1,297	1,618	982	579	428	187	16	16	228
1925	Normal-Dry	743	1,503	1,887	2,683	2,821	2,474	1,392	498	139	86	86	651
1926	Normal-Dry	719	1,813	2,982	2,313	2,493	2,195	1,207	438	129	76	76	962
1927	Normal-Wet	1,301	2,909	3,286	4,397	3,360	2,944	1,649	581	153	100	702	702
1928	Normal-Dry	1,495	1,745	2,651	2,501	2,695	2,372	1,301	468	134	81	81	465
1929	Dry	484	878	1,215	1,768	1,858	1,684	912	343	112	60	60	326
1930	Dry	489	887	1,227	1,787	1,877	1,701	921	346	113	60	60	329
1931	Critical High	255	323	452	952	1,184	731	441	328	152	16	16	16
1932	Normal-Wet	1,129	3,044	3,439	4,396	3,522	3,085	1,726	606	158	104	104	810
1933	Normal-Dry	725	1,465	1,839	2,616	2,751	2,413	1,359	487	137	84	84	635
1934	Dry	436	589	774	1,689	2,112	1,267	736	542	226	16	16	291
1935	Normal-Wet	868	2,895	3,340	4,219	3,173	2,781	1,560	552	148	95	95	95
1936	Normal-Wet	1,936	1,670	3,356	3,499	3,201	2,805	1,573	556	149	95	95	390
1937	Normal-Wet	508	1,386	1,953	4,189	3,142	2,754	1,545	547	147	1,186	1,294	1,924
1938	Wet	326	797	1,304	4,256	4,477	3,382	2,212	1,511	489	425	433	1,619
1939	Dry	1,364	2,365	1,468	2,137	2,245	2,031	1,092	401	122	70	69	69
1940	Normal-Wet	1,851	2,799	3,207	3,615	2,947	2,584	1,452	517	142	89	694	590
1941	Wet	2,220	3,224	1,947	4,448	4,111	3,380	2,086	850	266	787	1,408	2,087
1942	Normal-Wet	2,159	3,117	3,645	4,439	3,693	3,234	1,808	632	162	265	102	2,049
1943	Normal-Wet	465	1,494	3,399	3,543	3,274	2,869	1,608	568	151	97	97	97
1944	Normal-Dry	783	1,584	1,989	2,830	2,975	2,608	1,465	521	143	90	90	578
1945	Normal-Wet	1,378	3,086	3,551	4,431	3,622	3,172	1,774	625	160	1,300	1,306	1,202
1946	Normal-Wet	1,191	2,552	3,283	2,895	3,044	2,668	1,498	532	145	91	691	1,276
1947	Normal-Dry	1,206	1,372	2,497	2,320	2,500	2,201	1,210	439	129	76	76	76
1948	Normal-Dry	620	1,130	1,568	2,288	2,402	2,173	1,165	425	126	73	73	416
1949	Normal-Dry	693	1,398	1,756	2,495	2,688	2,366	1,298	467	134	81	81	464
1950	Normal-Dry	761	1,540	2,594	2,640	2,776	2,435	1,370	491	133	1,285	1,285	1,841
1951	Normal-Wet	1,004	1,603	1,989	2,828	2,973	2,606	1,464	521	143	90	541	541
1952	Wet	720	1,366	1,746	4,450	3,881	3,411	2,105	857	268	228	1,410	1,314
1953	Normal-Dry	850	1,590	1,996	2,840	2,986	2,618	1,471	523	143	90	90	688
1954	Normal-Dry	737	1,490	2,960	2,480	2,673	2,353	1,291	465	133	80	80	461
1955	Normal-Dry	705	1,423	1,788	2,542	2,673	2,345	1,321	475	135	80	70	70
1956	Wet	2,216	3,214	3,203	4,449	3,838	3,361	1,877	654	166	412	776	1,454
1957	Normal-Dry	838	1,697	2,131	3,032	3,187	2,793	1,567	554	149	95	95	1,934
1958	Wet	935	1,640	1,898	4,450	3,857	3,377	1,886	657	166	112	721	1,844
1959	Normal-Dry	1,761	1,810	1,550	2,258	2,371	2,145	1,150	420	126	73	73	73
1960	Dry	468	587	836	1,833	2,293	1,371	794	584	240	16	16	314
1961	Critical High	350	441	623	1,345	1,679	1,017	599	443	192	16	16	236
1962	Normal-Wet	913	2,839	3,186	4,180	3,402	2,980	1,669	587	154	101	101	1,983
1963	Normal-Wet	1,313	2,897	3,230	4,106	3,724	3,262	1,823	637	163	109	295	295
1964	Dry	727	1,301	1,633	2,320	2,501	2,202	1,211	439	129	76	1,276	1,632
1965	Normal-Wet	1,017	2,017	2,777	4,445	3,844	3,366	1,880	655	166	1,063	1,164	1,216
1966	Normal-Dry	1,357	2,635	2,619	2,429	2,617	2,304	1,265	457	132	70	860	1,652
1967	Wet	2,449	1,131	1,580	4,246	4,485	3,677	2,556	1,744	558	491	491	491
1968	Dry	599	1,132	1,507	2,196	2,306	2,087	1,120	410	124	71	70	390
1969	Wet	650	541	1,248	3,043	4,483	3,478	2,273	1,553	502	437	1,637	1,976
1970	Normal-Dry	1,798	1,640	2,060	2,929	3,079	2,699	1,515	538	146	92	92	1,016
1971	Normal-Dry	799	1,617	2,030	2,889	3,037	2,662	1,495	531	145	91	91	91
1972	Normal-Dry	1,056	1,333	1,673	2,377	2,561	2,256	1,239	448	130	77	77	741
1973	Normal-Wet	2,055	2,867	1,997	4,157	3,108	2,724	1,529	542	147	666	1,293	1,418
1974	Normal-Wet	2,089	2,935	3,402	4,320	3,279	2,873	1,610	568	151	97	97	1,320
1975	Normal-Wet	1,427	2,953	3,419	4,348	3,309	2,899	1,625	573	152	98	98	98
1976	Critical High	700	578	822	1,799	2,251	1,347	780	574	237	16	16	309
1977	Critical Low	171	218	301	607	751	459	303	228	118	16	16	117
1978	Wet	860	1,159	1,905	4,372	4,489	3,771	2,463	1,681	540	655	1,673	2,237
1979	Normal-Wet	2,053	2,862	3,294	3,822	3,095	2,713	1,523	540	146	93	80	80
1980	Wet	909	2,340	2,928	4,461	4,486	3,566	2,199	894	277	355	911	1,378
1981	Normal-Dry	1,241	1,577	2,435	2,509	2,703	2,379	1,305	470	134	81	141	1,666
1982	Wet	2,321	541	2,952	4,286	4,073	3,415	2,233	2,726	1,694	360	127	811
1983	Wet	91	972	1,505	2,386	4,471	3,917	2,908	1,983	1,829	528	1,760	1,760
1984	Normal-Wet	2,013	2,238	2,927	3,236	3,400	2,979	1,668	587	154	101	101	910
1985	Normal-Dry	902	2,232	2,380	2,400	2,586	2,277	1,250	452	131	78	78	390
1986	Wet	465	3,064	3,572	4,434	3,569	3,126	1,749	613	159	105	105	902
1987	Dry	1,085	1,204	1,525	2,091	2,196	1,988	1,069	394	121	68	68	68
1988	Dry	489	886	1,226	1,784	1,875	1,699	920	345	113	60	60	328
1989	Normal-Dry	537	975	1,350	1,965	2,064	1,869	1,008	374	118	65	65	360
1990	Dry	419	526	746	1,627	2,034	1,221	711	524	220	16	16	281
1991	Normal-Dry	568	1,033	1,432	2,087	2,192	1,984	1,067	393	121	68	68	68
1992	Dry	486	881	1,218	1,769	1,859	1,685	912	343	112	60	60	1,526
1993	Wet	2,204	3,189	3,744	4,448	3,766	3,381	2,087	850	266	208	208	894
1994	Dry	1,210	1,121	1,554	2,265	2,378	2,152	1,154	421	126	73	1,112	1,612
1995	Wet	1,050	2,646	2,054	4,112	4,471	3,922	2,912	1,985	629	560	560	560
1996	Normal-Wet	843	2,966	3,437	4,377	3,339	2,926	1,639	578	153	91	91	674
1997	Wet	2,062	2,883	3,323	3,516	3,144	2,756	1,546	548	148	94	175	390
1998	Wet	916	581	1,603	2,613	4,484	3,625	2,692	1,837	586	518	518	2,262
1999	Normal-Wet	1,218	1,682	2,377	3,563	3,142	2,754	1,545	547	147	94	94	94
2000	Normal-Wet	1,713	2,716	3,252	3,619	3,024	2,651	1,489	529	144	91	91	697
2001	Normal-Dry	710	1,434	2,684	2,414	2,601	2,290	1,257	454	131	78	78	449
2002	Normal-Dry	664	1,338	1,913	2,346	2,528	2,226	1,223	443	130	77	77	437
2003	Normal-Wet	793	1,604	2,014	2,864	3,011	2,640	1,483					
	Average	1,064	1,751	2,215	3,056	2,998	2,562	1,486	648	221	206	371	824
	Wet	1,275	1,830	2,282	3,998	4,130	3,472	2,236	1,309	534	392	807	1,374
	Normal-Wet	1,379	2,502	3,066	3,887	3,310	2,900	1,625	555	149	270	424	853
	Normal-Dry	928	1,557	2,115	2,508	2,665	2,352	1,300	468	134	130	165	674
	Dry	688	1,030	1,244	1,939	2,128	1,757	963	424	147	54	240	597
	Critical High	411	442	625	1,348	1,683	1,019	600	443	192	16	16	197
	Critical Low	171	218	301	607	751	459	303	228	118	16	16	117
	Dry and Critical	593	844	1,043	1,722	1,942	1,507	838	417	156	43	174	475

Table 131: Simulated Friant-Kern Canal Diversions (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								81	67	16	16	790
1922	Normal-Wet	2,544	3,224	3,512	4,622	3,850	3,371	1,883	656	166	112	587	1,361
1923	Normal-Wet	848	1,718	2,157	3,070	3,226	2,827	1,585	560	150	96	96	96
1924	Critical High	296	373	525	1,119	1,395	853	508	377	169	16	16	200
1925	Normal-Dry	626	1,141	1,583	2,309	2,424	2,193	1,175	428	127	74	74	420
1926	Normal-Dry	603	1,097	1,695	2,184	2,294	2,076	1,114	408	124	71	71	573
1927	Normal-Wet	930	1,828	2,516	4,601	3,486	3,054	1,709	600	157	103	103	103
1928	Normal-Dry	663	1,337	1,906	2,346	2,528	2,226	1,223	443	130	77	77	437
1929	Dry	394	496	704	1,532	1,915	1,153	673	497	210	16	16	266
1930	Dry	386	486	690	1,500	1,874	1,129	660	488	207	16	16	261
1931	Critical High	210	267	372	768	954	598	368	275	0	16	16	16
1932	Normal-Wet	946	1,896	2,413	3,436	3,610	3,162	1,768	619	160	106	106	830
1933	Normal-Dry	607	1,106	1,533	2,238	2,349	2,126	1,140	417	125	72	72	407
1934	Dry	334	421	594	1,277	1,593	967	571	423	185	16	16	225
1935	Normal-Wet	871	1,747	2,211	3,861	3,294	2,887	1,618	571	151	98	98	98
1936	Normal-Wet	1,214	1,723	4,407	3,069	3,226	2,827	1,585	560	150	96	96	1,237
1937	Normal-Wet	1,108	2,178	2,826	4,414	3,268	2,863	1,605	567	151	97	1,651	3,918
1938	Wet	873	1,562	2,125	4,405	4,483	3,479	2,274	1,554	502	437	437	1,666
1939	Dry	551	1,162	1,365	1,986	2,086	1,889	1,018	377	118	66	66	66
1940	Normal-Wet	856	1,652	3,758	3,345	3,031	2,657	1,492	530	145	91	91	1,455
1941	Wet	1,625	2,938	2,966	4,460	3,967	3,432	2,118	862	269	211	2,088	2,077
1942	Normal-Wet	995	3,151	3,458	4,313	3,819	3,344	1,868	651	165	111	637	2,344
1943	Normal-Wet	1,095	1,746	4,306	3,135	3,295	2,887	1,618	571	152	98	98	98
1944	Normal-Dry	659	1,328	1,668	2,372	2,556	2,250	1,236	448	130	77	77	1,237
1945	Normal-Wet	981	1,940	2,477	4,141	3,747	3,281	1,834	640	163	996	1,647	980
1946	Normal-Wet	816	1,653	2,935	2,813	2,957	2,593	1,457	519	143	89	141	1,075
1947	Normal-Dry	613	1,116	1,712	2,226	2,338	2,115	1,135	415	125	72	72	72
1948	Normal-Dry	503	912	1,264	1,842	1,936	1,754	948	355	114	62	62	339
1949	Normal-Dry	576	1,047	1,452	2,116	2,222	2,011	1,081	398	122	69	69	386
1950	Normal-Dry	646	1,299	1,630	2,316	2,495	2,198	1,208	439	122	4,607	2,475	2,006
1951	Normal-Wet	681	1,372	1,723	2,448	2,638	2,322	1,274	460	132	79	79	79
1952	Wet	1,646	2,235	2,699	4,458	3,917	3,517	2,169	882	274	216	587	1,099
1953	Normal-Dry	699	1,411	1,771	2,519	2,714	2,389	1,310	471	134	81	81	468
1954	Normal-Dry	620	1,130	1,567	2,284	2,398	2,170	1,163	424	126	73	73	415
1955	Normal-Dry	599	1,090	1,512	2,205	2,315	2,095	1,124	411	124	605	381	381
1956	Wet	1,766	1,668	3,101	4,450	3,801	3,413	2,106	858	268	210	210	895
1957	Normal-Dry	740	1,495	1,877	2,670	2,807	2,462	1,385	496	139	85	85	648
1958	Wet	1,861	2,118	2,823	4,255	3,819	3,429	2,116	861	269	211	211	900
1959	Normal-Dry	578	1,052	1,456	2,120	2,226	2,015	1,083	398	122	69	69	69
1960	Dry	370	465	660	1,429	1,785	1,078	632	467	200	16	16	249
1961	Critical High	306	386	543	1,163	1,450	885	526	390	173	16	16	207
1962	Normal-Wet	877	1,778	2,233	3,179	3,341	2,928	1,640	578	153	99	99	2,095
1963	Normal-Wet	976	1,981	2,490	3,547	3,727	3,264	1,824	637	163	109	109	109
1964	Dry	557	1,013	1,402	2,043	2,146	1,943	1,046	386	120	67	1,897	2,118
1965	Normal-Wet	967	1,964	2,467	3,514	3,692	3,233	1,807	632	162	108	1,179	997
1966	Normal-Dry	694	1,886	2,488	2,353	2,470	2,235	1,197	435	128	70	544	1,753
1967	Wet	2,841	2,313	2,478	4,394	4,478	3,524	2,618	1,786	571	503	503	503
1968	Dry	479	600	855	1,876	2,348	1,403	811	597	245	16	552	886
1969	Wet	1,173	1,151	2,063	4,381	4,489	3,574	2,336	1,595	514	449	1,182	1,754
1970	Normal-Dry	1,157	1,507	1,892	2,690	2,829	2,480	1,396	499	139	86	86	653
1971	Normal-Dry	695	1,402	1,761	2,503	2,697	2,374	1,302	469	134	81	81	81
1972	Normal-Dry	559	1,017	1,408	2,051	2,154	1,950	1,050	387	120	67	67	375
1973	Normal-Wet	880	1,721	3,178	3,995	3,234	2,834	1,589	561	150	96	1,899	1,253
1974	Normal-Wet	1,673	2,965	3,310	4,596	3,405	2,983	1,670	588	154	101	101	783
1975	Normal-Wet	920	1,806	2,293	4,036	3,434	3,009	1,685	592	155	101	101	101
1976	Critical High	415	521	740	1,612	2,015	1,211	705	520	218	16	16	279
1977	Critical Low	173	222	305	617	763	477	307	231	0	16	16	965
1978	Wet	1,485	1,923	2,748	4,395	4,483	3,633	2,525	1,724	552	486	1,275	1,930
1979	Normal-Wet	1,591	1,715	3,980	3,382	3,189	2,795	1,568	554	149	95	627	627
1980	Wet	1,433	2,404	3,041	4,404	4,482	3,460	2,262	1,545	499	434	434	1,657
1981	Normal-Dry	597	1,086	1,505	2,193	2,303	2,084	1,119	410	124	71	71	2,436
1982	Wet	2,769	1,605	4,355	4,407	3,936	3,511	2,295	2,949	2,676	693	319	1,198
1983	Wet	492	1,615	2,191	2,887	4,476	3,998	2,968	2,023	1,178	1,075	2,506	2,506
1984	Normal-Wet	1,221	1,738	2,183	3,105	3,263	2,859	1,603	566	151	97	97	751
1985	Normal-Dry	624	1,137	1,583	2,293	2,407	2,178	1,167	425	126	74	74	1,237
1986	Wet	1,048	3,181	4,339	4,439	3,694	3,235	1,809	632	162	108	108	849
1987	Dry	471	590	840	1,840	2,302	1,376	797	586	241	16	16	16
1988	Dry	389	489	694	1,507	1,883	1,135	663	490	208	16	16	262
1989	Normal-Dry	409	514	730	1,590	1,987	1,195	696	514	216	16	16	275
1990	Dry	316	399	562	1,205	1,503	915	543	402	178	16	16	214
1991	Normal-Dry	440	553	787	1,724	2,156	1,292	750	552	230	16	16	16
1992	Dry	384	483	684	1,483	1,852	1,117	654	482	205	16	16	862
1993	Wet	1,176	3,262	2,990	4,623	3,805	3,416	2,108	858	268	211	211	896
1994	Dry	522	946	1,310	1,907	2,003	1,814	979	365	116	63	740	2,057
1995	Wet	1,975	4,018	2,645	4,392	4,476	3,998	2,968	2,023	641	571	571	571
1996	Normal-Wet	1,768	2,917	3,243	4,420	3,465	3,035	1,699	597	156	627	403	1,122
1997	Wet	2,014	1,868	3,988	2,848	2,994	2,624	1,474	524	144	90	90	1,237
1998	Wet	1,541	1,345	2,446	3,940	4,474	3,710	2,755	1,879	598	530	530	2,026
1999	Normal-Wet	735	1,486	1,865	2,652	2,789	2,446	1,377	493	138	85	85	85
2000	Normal-Wet	853	1,684	3,079	3,266	3,094	2,712	1,522	540	146	93	93	713
2001	Normal-Dry	577	1,049	1,455	2,118	2,224	2,013	1,082	398	122	69	69	387
2002	Normal-Dry	553	1,005	1,392	2,026	2,128	1,927	1,037	383	119	67	67	371
2003	Normal-Wet	655	1,320	1,658	2,355	2,538	2,235	1,228					
	Average	906	1,477	2,051	2,861	2,869	2,416	1,415	662	233	212	363	847
	Wet	1,607	2,200	2,937	4,196	4,111	3,497	2,306	1,410	586	402	704	1,360
	Normal-Wet	1,080	1,956	2,827	3,573	3,305	2,896	1,620	557	149	152	410	924
	Normal-Dry	627	1,155	1,568	2,220	2,373	2,075	1,130	434	134	280	201	643
	Dry	429	629	863	1,632	1,941	1,327	754	463	186	29	282	624
	Critical High	307	387	545	1,166	1,454	887	527	390	140	16	16	175
	Critical Low	173	222	305	617	763	477	307	231	0	16	16	965
	Dry and Critical	385	548	756	1,463	1,757	1,173	674	432	164	25	204	538

Table 132: Simulated Madera Canal Diversions (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								0	0	0	0	15
1922	Normal-Wet	0	516	989	1,250	1,250	1,093	411	50	5	4	12	7
1923	Normal-Wet	161	443	855	960	1,121	973	364	47	16	0	0	0
1924	Critical High	0	0	147	418	510	354	52	0	0	0	0	0
1925	Normal-Dry	0	0	340	1,038	1,250	876	142	0	0	0	0	0
1926	Normal-Dry	0	60	527	846	1,028	709	114	0	0	0	0	22
1927	Normal-Wet	169	544	857	1,176	1,105	959	358	41	2	0	6	6
1928	Normal-Dry	229	41	465	944	1,146	790	128	0	0	0	0	0
1929	Dry	0	0	205	604	735	508	79	0	0	0	0	0
1930	Dry	0	0	207	610	743	513	80	0	0	0	0	0
1931	Critical High	0	0	114	312	381	266	37	0	0	0	0	0
1932	Normal-Wet	155	573	903	1,178	1,172	1,017	381	47	16	0	0	0
1933	Normal-Dry	0	0	329	1,003	1,218	839	136	0	0	0	0	0
1934	Dry	0	7	185	538	655	454	70	0	0	0	0	0
1935	Normal-Wet	68	124	885	1,150	1,029	892	332	40	1	0	0	0
1936	Normal-Wet	110	537	922	966	1,040	902	336	34	12	0	0	57
1937	Normal-Wet	78	530	861	1,142	1,016	881	328	40	0	11	27	0
1938	Wet	0	235	1,162	1,250	1,250	1,140	636	70	31	0	0	0
1939	Dry	116	209	244	731	888	613	97	0	0	0	0	0
1940	Normal-Wet	153	508	845	936	936	811	300	36	0	0	6	84
1941	Wet	17	24	1,079	1,250	1,250	1,139	429	35	15	6	58	17
1942	Normal-Wet	198	588	960	1,250	1,242	1,079	405	49	5	1	178	47
1943	Normal-Wet	148	566	934	987	1,070	928	346	42	5	0	0	0
1944	Normal-Dry	110	304	584	810	947	821	304	37	0	0	0	247
1945	Normal-Wet	159	585	935	1,211	1,213	1,053	395	48	5	13	22	25
1946	Normal-Wet	181	472	859	834	976	845	314	38	0	0	6	39
1947	Normal-Dry	84	0	431	850	1,032	712	114	0	0	0	0	0
1948	Normal-Dry	0	0	266	803	975	673	107	0	0	0	0	0
1949	Normal-Dry	0	0	310	941	1,142	787	127	0	0	0	0	0
1950	Normal-Dry	0	0	461	1,016	1,233	850	138	0	16	236	78	68
1951	Normal-Wet	148	307	584	810	947	820	304	37	0	0	4	4
1952	Wet	3	282	1,074	1,250	1,250	1,151	434	59	10	0	30	24
1953	Normal-Dry	122	306	587	814	952	825	305	37	0	0	0	0
1954	Normal-Dry	0	0	518	933	1,133	781	126	0	0	0	0	0
1955	Normal-Dry	0	0	317	965	1,171	807	131	0	0	192	291	291
1956	Wet	298	603	1,011	1,250	1,250	1,163	439	58	16	3	7	57
1957	Normal-Dry	121	334	639	885	1,035	897	334	40	1	0	0	40
1958	Wet	68	7	1,096	1,250	1,250	1,175	443	59	16	0	6	46
1959	Normal-Dry	179	107	262	788	957	660	105	0	0	0	0	0
1960	Dry	0	0	198	583	709	490	76	0	0	0	0	0
1961	Critical High	0	0	151	433	528	366	55	0	0	0	0	0
1962	Normal-Wet	98	537	851	1,126	1,132	982	367	48	16	0	0	101
1963	Normal-Wet	203	558	894	1,169	1,250	1,093	411	43	6	1	2	2
1964	Dry	13	0	281	850	1,032	712	114	0	0	0	77	89
1965	Normal-Wet	157	420	941	1,250	1,250	1,167	440	58	5	10	11	14
1966	Normal-Dry	206	184	456	906	1,100	759	122	0	0	0	8	51
1967	Wet	233	17	1,250	1,250	1,250	1,250	842	262	15	11	9	9
1968	Dry	0	7	252	756	919	634	101	0	0	0	184	0
1969	Wet	7	325	1,177	1,250	1,250	1,179	659	70	19	0	39	13
1970	Normal-Dry	137	319	611	847	990	858	319	39	0	0	0	29
1971	Normal-Dry	114	313	600	832	973	843	313	38	0	0	0	0
1972	Normal-Dry	63	0	291	879	1,068	736	118	0	0	0	0	12
1973	Normal-Wet	65	517	858	1,128	1,002	869	323	33	1	7	84	29
1974	Normal-Wet	260	523	867	1,171	1,072	930	347	42	5	0	0	24
1975	Normal-Wet	64	549	873	1,128	1,084	941	351	42	7	0	0	0
1976	Critical High	38	0	195	572	696	482	75	0	0	0	0	0
1977	Critical Low	0	0	81	206	253	49	156	0	0	0	0	40
1978	Wet	0	10	1,250	1,250	1,250	1,250	764	177	10	2	22	5
1979	Normal-Wet	45	525	873	999	997	864	321	39	0	0	223	223
1980	Wet	81	731	1,080	1,250	1,250	1,215	459	59	21	1	7	40
1981	Normal-Dry	82	18	428	948	1,150	793	128	0	0	0	0	40
1982	Wet	10	65	1,199	1,250	1,250	1,153	644	242	100	218	248	0
1983	Wet	0	45	1,250	1,250	1,250	1,250	1,013	203	117	239	79	79
1984	Normal-Wet	284	435	807	961	1,122	974	364	47	5	0	0	19
1985	Normal-Dry	28	127	414	891	1,082	746	120	0	0	0	0	167
1986	Wet	109	512	931	1,250	1,191	1,034	388	47	16	0	0	11
1987	Dry	80	24	253	712	866	598	95	0	0	0	0	0
1988	Dry	0	0	206	610	741	513	80	0	0	0	0	0
1989	Normal-Dry	0	0	225	670	814	563	88	0	0	0	0	0
1990	Dry	0	0	178	519	632	438	67	0	0	0	0	0
1991	Normal-Dry	0	0	238	710	863	596	94	0	0	0	0	0
1992	Dry	0	0	205	605	735	508	79	0	0	0	0	40
1993	Wet	68	549	1,011	1,250	1,250	1,178	445	66	10	0	0	0
1994	Dry	95	0	263	791	961	663	106	0	0	0	11	40
1995	Wet	0	334	1,250	1,250	1,250	1,250	1,143	434	27	10	8	8
1996	Normal-Wet	202	533	919	1,153	1,097	952	355	39	2	191	715	66
1997	Wet	329	544	976	957	1,017	882	328	40	0	0	0	139
1998	Wet	11	96	1,250	1,250	1,250	1,250	958	204	56	43	43	65
1999	Normal-Wet	186	330	678	965	1,016	881	328	40	0	0	0	0
2000	Normal-Wet	40	498	840	951	968	839	311	8	10	4	3	3
2001	Normal-Dry	0	0	467	898	1,091	752	121	0	0	0	0	0
2002	Normal-Dry	0	0	331	863	1,048	723	116	0	0	0	0	0
2003	Normal-Wet	112	310	594	823	962	834	309					
	Average	79	229	645	943	1,026	839	294	40	8	15	31	30
	Wet	77	274	1,128	1,232	1,232	1,166	626	130	30	33	35	32
	Normal-Wet	138	481	855	1,067	1,083	943	352	40	5	10	52	31
	Normal-Dry	61	88	421	878	1,058	766	161	8	1	18	16	40
	Dry	25	21	223	659	801	554	87	0	0	0	23	14
	Critical High	10	0	152	434	529	367	55	0	0	0	0	0
	Critical Low	0	0	81	206	253	49	156	0	0	0	0	40
	Dry and Critical	20	15	198	579	705	480	83	0	0	0	16	12

Table 133: Simulated Madera Canal Diversions (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								0	0	0	0	0
1922	Normal-Wet	0	516	981	1,250	1,250	1,171	442	59	5	0	0	0
1923	Normal-Wet	123	340	649	899	1,050	911	339	41	7	0	0	0
1924	Critical High	0	0	130	363	444	308	45	0	0	0	0	0
1925	Normal-Dry	0	0	270	813	988	681	109	0	0	0	0	0
1926	Normal-Dry	0	0	284	750	912	629	100	0	0	0	0	5
1927	Normal-Wet	130	370	746	1,250	1,157	1,004	376	44	6	0	0	0
1928	Normal-Dry	0	0	330	863	1,048	723	116	0	0	0	0	0
1929	Dry	0	0	169	490	597	414	63	0	0	0	0	0
1930	Dry	0	0	166	480	585	405	61	0	0	0	0	0
1931	Critical High	0	0	96	256	313	143	107	0	0	0	0	0
1932	Normal-Wet	136	388	748	1,036	1,210	1,050	394	48	16	0	0	0
1933	Normal-Dry	0	0	258	777	944	652	104	0	0	0	0	0
1934	Dry	0	0	145	412	502	349	52	0	0	0	0	0
1935	Normal-Wet	68	124	715	1,106	1,078	935	349	42	1	0	0	0
1936	Normal-Wet	126	351	877	899	1,050	911	339	35	12	0	0	386
1937	Normal-Wet	240	541	882	1,151	1,067	926	345	42	5	0	0	375
1938	Wet	231	235	1,193	1,250	1,250	1,179	659	70	31	0	0	0
1939	Dry	0	27	228	677	823	568	89	0	0	0	0	0
1940	Normal-Wet	116	322	820	907	970	841	312	38	0	0	0	439
1941	Wet	155	24	1,060	1,250	1,250	1,160	437	35	15	0	0	0
1942	Normal-Wet	83	594	955	1,236	1,250	1,177	444	61	5	0	429	11
1943	Normal-Wet	490	545	893	923	1,079	936	349	42	5	0	0	0
1944	Normal-Dry	0	0	289	877	1,064	734	118	0	0	0	0	485
1945	Normal-Wet	117	402	777	1,186	1,250	1,119	421	54	5	0	0	14
1946	Normal-Wet	117	322	761	804	940	815	301	36	0	0	0	29
1947	Normal-Dry	0	0	289	771	937	647	103	0	0	0	0	0
1948	Normal-Dry	0	0	212	629	765	529	83	0	0	0	0	0
1949	Normal-Dry	0	0	241	720	875	604	96	0	0	0	0	0
1950	Normal-Dry	0	0	281	848	1,029	710	114	0	0	0	0	40
1951	Normal-Wet	0	0	302	916	1,112	767	124	0	0	0	0	0
1952	Wet	381	480	1,084	1,250	1,250	1,250	499	82	10	0	0	12
1953	Normal-Dry	0	0	313	953	1,157	797	129	0	0	0	0	0
1954	Normal-Dry	0	0	266	801	972	671	107	0	0	0	0	0
1955	Normal-Dry	0	0	253	760	924	638	101	0	0	462	452	452
1956	Wet	235	433	1,004	1,250	1,250	1,201	453	68	21	0	0	0
1957	Normal-Dry	0	0	338	1,031	1,250	863	140	0	0	0	0	0
1958	Wet	446	204	1,081	1,250	1,250	1,250	651	162	21	0	0	0
1959	Normal-Dry	0	0	241	721	877	605	96	0	0	0	0	0
1960	Dry	0	0	159	459	559	387	58	0	0	0	0	0
1961	Critical High	0	0	134	377	460	320	47	0	0	0	0	0
1962	Normal-Wet	94	359	683	947	1,106	960	359	44	7	0	0	39
1963	Normal-Wet	149	410	777	1,076	1,250	1,095	412	44	6	1	1	1
1964	Dry	0	0	233	696	846	584	92	0	0	0	0	40
1965	Normal-Wet	147	405	768	1,064	1,242	1,078	405	49	5	0	0	4
1966	Normal-Dry	0	81	428	835	1,015	700	112	0	0	0	0	39
1967	Wet	233	135	1,250	1,250	1,250	1,250	895	390	15	11	9	9
1968	Dry	0	0	202	596	725	501	78	0	0	0	462	215
1969	Wet	7	325	1,208	1,250	1,250	1,218	681	70	19	0	0	1
1970	Normal-Dry	37	0	341	1,042	1,250	883	144	0	0	0	0	0
1971	Normal-Dry	0	0	311	945	1,147	791	128	0	0	0	0	0
1972	Normal-Dry	0	0	234	698	849	586	93	0	0	0	0	0
1973	Normal-Wet	26	349	856	1,076	1,054	914	341	35	3	1	1	15
1974	Normal-Wet	195	555	867	1,196	1,124	975	365	47	8	0	0	0
1975	Normal-Wet	53	370	714	1,118	1,136	986	369	47	16	0	0	0
1976	Critical High	0	0	177	515	627	434	66	0	0	0	0	0
1977	Critical Low	0	0	82	209	257	49	159	0	0	0	0	415
1978	Wet	231	10	1,250	1,250	1,250	1,250	817	257	15	11	37	116
1979	Normal-Wet	122	339	853	944	1,035	898	334	40	1	0	501	501
1980	Wet	249	747	1,107	1,250	1,250	1,171	654	117	21	0	0	0
1981	Normal-Dry	0	0	252	755	917	633	101	0	0	0	0	40
1982	Wet	10	449	1,250	1,250	1,250	1,250	708	183	35	547	394	0
1983	Wet	0	45	1,250	1,250	1,250	1,250	1,013	203	446	577	112	112
1984	Normal-Wet	186	345	659	912	1,066	924	345	42	1	0	0	0
1985	Normal-Dry	0	0	269	805	978	675	108	0	0	0	0	543
1986	Wet	329	517	960	1,250	1,243	1,079	406	49	16	0	0	0
1987	Dry	0	0	199	585	712	492	76	0	0	0	0	0
1988	Dry	0	0	167	483	588	407	62	0	0	0	0	0
1989	Normal-Dry	0	0	175	508	619	428	65	0	0	0	0	0
1990	Dry	0	0	138	390	476	330	48	0	0	0	0	0
1991	Normal-Dry	0	0	187	549	668	462	71	0	0	0	0	0
1992	Dry	0	0	165	475	579	401	61	0	0	0	0	18
1993	Wet	152	548	986	1,250	1,250	1,203	454	68	10	0	0	0
1994	Dry	0	0	219	650	791	546	86	0	0	0	0	40
1995	Wet	378	531	1,250	1,250	1,250	1,250	1,190	434	29	11	9	9
1996	Normal-Wet	516	519	864	1,171	1,148	997	373	41	6	418	876	105
1997	Wet	267	367	864	817	955	828	307	37	0	0	0	445
1998	Wet	231	96	1,250	1,250	1,250	1,250	1,010	204	58	45	36	58
1999	Normal-Wet	0	0	335	1,022	1,240	855	139	0	0	0	0	0
2000	Normal-Wet	23	339	811	906	996	864	321	8	10	4	3	3
2001	Normal-Dry	0	0	241	721	876	605	96	0	0	0	0	0
2002	Normal-Dry	0	0	232	690	839	579	91	0	0	0	0	0
2003	Normal-Wet	0	0	287	868	1,054	727	117					
	Average	83	171	561	883	980	797	281	41	11	25	41	61
	Wet	221	322	1,128	1,223	1,231	1,190	677	152	47	75	37	48
	Normal-Wet	130	352	743	1,034	1,117	953	337	38	5	17	72	77
	Normal-Dry	2	3	272	786	954	659	105	0	0	19	19	67
	Dry	0	2	183	533	648	449	69	0	0	0	38	26
	Critical High	0	0	134	378	461	301	66	0	0	0	0	0
	Critical Low	0	0	82	209	257	49	159	0	0	0	0	415
	Dry and Critical	0	2	165	477	581	391	74	0	0	0	27	43

Table 134: Simulated Merced River Inflow To San Joaquin River (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								292	368	486	482	879
1922	Wet	748	28	1,251	3,357	1,387	867	453	469	304	962	1,270	1,017
1923	Above Normal	261	305	586	582	159	762	598	593	385	382	396	396
1924	Critical	273	272	201	29	51	36	49	282	419	425	428	689
1925	Below Normal	421	922	533	214	116	77	54	266	354	375	375	336
1926	Dry	271	514	401	61	51	37	51	274	322	313	381	441
1927	Above Normal	280	589	267	166	136	84	89	426	352	389	361	361
1928	Below Normal	341	898	426	271	179	88	80	296	387	387	408	435
1929	Critical	328	654	113	129	49	54	92	276	367	359	361	375
1930	Critical	303	558	244	31	35	35	93	276	385	372	382	408
1931	Critical	292	86	98	82	86	40	75	266	363	475	469	469
1932	Above Normal	383	432	20	94	109	57	58	310	386	383	426	371
1933	Dry	337	512	214	78	60	41	30	298	383	405	466	469
1934	Critical	311	437	231	113	84	35	29	282	389	409	580	428
1935	Above Normal	587	698	364	230	182	100	55	368	410	385	428	428
1936	Above Normal	665	811	1,468	132	134	820	441	707	424	417	416	4,208
1937	Wet	1,251	311	2,281	562	597	812	446	442	401	2,035	1,341	4,928
1938	Wet	4,767	1,521	3,341	4,530	2,238	1,159	596	833	397	383	443	509
1939	Dry	453	849	488	135	67	73	68	331	424	418	573	573
1940	Above Normal	280	419	1,409	236	145	240	416	459	427	1,286	1,340	3,119
1941	Wet	1,858	842	3,103	2,347	1,749	1,069	508	718	447	1,183	1,528	1,720
1942	Wet	517	522	1,180	2,978	1,651	1,021	509	494	549	783	2,172	1,974
1943	Wet	3,163	910	1,070	435	510	941	490	475	459	436	414	414
1944	Below Normal	345	926	320	391	172	136	88	357	489	446	441	2,769
1945	Above Normal	834	677	561	170	934	937	421	840	640	1,862	1,067	829
1946	Above Normal	469	689	597	303	170	129	81	592	532	963	621	869
1947	Dry	323	205	122	147	65	80	76	319	397	398	388	388
1948	Below Normal	313	594	125	197	182	100	97	348	404	386	402	394
1949	Below Normal	359	518	218	263	121	121	70	326	394	394	428	403
1950	Below Normal	390	650	321	329	162	130	77	329	402	2,100	1,733	1,641
1951	Above Normal	454	703	213	308	186	116	63	347	417	460	1,941	1,941
1952	Wet	1,922	1,245	3,703	3,081	1,943	1,231	621	450	428	334	1,080	727
1953	Below Normal	358	729	537	190	140	126	55	360	405	403	406	439
1954	Below Normal	277	423	252	277	167	131	81	314	392	409	537	442
1955	Dry	338	358	327	146	120	113	55	311	386	133	3,245	3,245
1956	Wet	498	793	1,195	2,336	1,954	1,152	610	580	422	409	411	406
1957	Below Normal	364	694	520	332	195	154	81	424	381	405	481	721
1958	Wet	1,286	2,986	3,555	2,730	1,720	1,123	675	483	395	382	395	564
1959	Dry	335	875	547	172	107	116	94	307	374	383	397	397
1960	Critical	343	635	325	164	101	127	49	286	365	387	372	395
1961	Critical	321	166	200	143	70	55	40	264	341	359	360	681
1962	Below Normal	975	755	346	446	253	182	78	346	362	376	376	410
1963	Above Normal	467	882	758	454	277	194	158	411	397	398	404	404
1964	Dry	320	569	292	197	163	114	77	346	356	528	1,780	497
1965	Wet	355	527	773	444	285	1,448	634	474	866	812	1,055	724
1966	Below Normal	346	885	611	257	206	165	79	293	366	400	408	424
1967	Wet	746	1,756	2,666	4,147	4,063	1,494	797	747	411	330	382	382
1968	Dry	358	936	605	249	196	177	130	275	431	434	903	4,093
1969	Wet	1,534	2,098	5,555	4,141	2,433	1,233	711	825	320	444	2,940	1,265
1970	Above Normal	917	986	657	329	256	222	150	383	375	359	425	384
1971	Below Normal	331	907	661	314	256	188	102	359	386	423	270	270
1972	Dry	263	726	472	281	240	222	18	309	412	432	474	889
1973	Above Normal	652	373	1,106	476	600	1,038	574	815	776	1,095	1,690	870
1974	Wet	1,126	666	1,563	594	841	1,054	586	667	350	409	307	2,026
1975	Wet	1,073	793	680	2,074	1,163	1,062	533	1,107	357	362	392	392
1976	Critical	291	502	477	255	175	205	136	354	311	322	373	253
1977	Critical	234	531	311	173	106	81	44	268	282	350	516	824
1978	Wet	582	219	566	4,016	2,613	1,294	1,369	509	579	441	1,541	1,932
1979	Above Normal	1,485	901	973	355	262	731	443	698	374	392	3,976	3,976
1980	Wet	1,490	621	961	1,997	2,284	1,248	583	629	398	444	479	452
1981	Dry	479	945	596	240	168	168	97	401	405	414	484	1,795
1982	Wet	2,297	4,921	3,385	1,922	2,249	1,390	1,170	1,344	1,754	2,298	3,657	4,416
1983	Wet	6,069	1,408	2,947	7,343	5,943	2,444	1,100	1,196	1,802	3,551	1,903	1,903
1984	Above Normal	512	782	591	328	291	277	217	537	338	334	488	759
1985	Dry	371	607	382	274	236	206	100	405	395	408	380	3,446
1986	Wet	4,143	921	1,748	1,415	946	1,113	737	558	416	418	381	380
1987	Critical	393	508	354	183	130	135	87	356	340	375	377	377
1988	Critical	246	297	300	201	97	92	52	256	274	322	304	310
1989	Critical	339	165	41	142	68	62	67	305	303	327	310	346
1990	Critical	205	110	181	146	72	68	26	248	258	274	292	205
1991	Critical	359	200	168	146	91	54	10	270	289	297	291	291
1992	Critical	298	201	139	139	76	55	11	206	313	350	684	449
1993	Wet	438	18	63	1,693	1,492	1,085	640	739	369	334	315	381
1994	Critical	186	337	131	142	43	54	2	239	327	317	611	386
1995	Wet	3,584	1,035	3,031	5,130	4,891	1,700	509	474	379	365	844	844
1996	Wet	1,633	817	1,696	290	374	903	480	613	845	3,494	9,912	2,144
1997	Wet	1,191	782	686	240	149	114	84	369	336	356	1,396	5,205
1998	Wet	2,115	1,235	1,064	5,045	4,614	1,499	759	741	382	296	820	2,026
1999	Above Normal	362	765	779	292	174	196	100	285	345	318	325	325
2000	Above Normal	1,137	807	851	242	175	112	59	668	496	392	389	391
2001	Dry	365	617	394	244	74	84	25	239	403	390	449	307
2002	Dry	249	517	219	172	90	61	2	227	316	353	327	287
2003	Below Normal	241	568	449	160	80	66	41					
	Average	834	746	892	924	701	473	271	453	437	595	900	1,093
	Wet	1,849	1,124	2,003	2,619	2,004	1,186	650	664	557	886	1,474	1,531
	Above Normal	609	676	700	294	262	376	245	514	438	606	893	1,206
	Below Normal	389	728	409	280	172	128	76	335	394	542	522	724
	Dry	343	633	389	184	126	115	63	311	385	385	788	1,294
	Critical	295	354	220	139	83	74	54	277	333	357	419	430
	Dry and Critical	317	479	296	159	102	92	58	292	356	370	585	818

Table 135: Simulated Merced River Inflow To San Joaquin River (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								292	368	486	482	879
1922	Wet	748	28	1,251	3,357	1,387	867	453	469	304	962	1,270	1,017
1923	Above Normal	261	209	679	582	159	762	598	593	385	382	396	396
1924	Critical	273	265	195	29	54	36	49	282	419	425	428	689
1925	Below Normal	421	813	602	214	116	77	54	266	354	375	375	336
1926	Dry	271	476	373	61	51	37	51	274	322	313	381	441
1927	Above Normal	280	169	439	166	136	84	89	426	352	389	361	361
1928	Below Normal	341	867	456	271	179	88	80	296	387	387	408	435
1929	Critical	328	618	148	129	49	54	92	276	367	359	361	375
1930	Critical	303	558	168	31	35	35	93	276	385	372	382	408
1931	Critical	292	89	98	82	86	41	75	266	363	475	469	469
1932	Above Normal	383	456	106	94	109	57	58	310	386	383	426	371
1933	Dry	337	469	256	78	60	41	30	298	383	405	466	469
1934	Critical	311	389	279	113	78	29	29	282	389	409	580	428
1935	Above Normal	587	344	515	230	182	100	55	368	410	385	428	428
1936	Above Normal	665	811	1,312	132	289	820	441	707	424	417	416	4,208
1937	Wet	1,251	311	2,281	562	597	812	446	442	401	2,035	1,341	4,928
1938	Wet	4,767	1,521	3,341	4,530	2,238	1,159	596	833	397	383	443	509
1939	Dry	453	849	488	135	67	73	68	331	424	418	573	573
1940	Above Normal	280	419	1,387	236	145	262	416	459	427	1,286	1,340	3,119
1941	Wet	1,858	842	3,103	2,347	1,749	1,069	508	718	447	1,183	1,528	1,720
1942	Wet	517	522	1,180	2,978	1,651	1,021	509	494	549	783	2,172	1,974
1943	Wet	3,163	910	1,154	435	427	941	490	475	459	436	414	414
1944	Below Normal	345	895	350	391	172	136	88	357	489	446	441	2,769
1945	Above Normal	834	450	565	392	934	937	421	840	640	1,862	1,067	829
1946	Above Normal	469	483	490	303	170	129	267	713	532	963	621	869
1947	Dry	323	622	290	147	65	80	76	319	397	398	388	388
1948	Below Normal	313	514	203	197	182	100	97	348	404	386	402	394
1949	Below Normal	359	479	190	263	121	121	70	326	394	394	428	403
1950	Below Normal	390	650	187	329	162	130	77	329	402	1,777	1,733	1,641
1951	Above Normal	454	282	486	308	186	116	63	347	417	460	2,071	2,071
1952	Wet	1,922	1,245	3,703	3,081	1,943	1,231	621	450	428	334	1,080	727
1953	Below Normal	358	698	567	190	140	126	55	360	405	403	406	439
1954	Below Normal	277	392	252	277	167	131	81	314	392	409	537	442
1955	Dry	338	303	285	146	120	113	55	311	386	133	3,365	3,365
1956	Wet	498	582	1,354	2,383	1,954	1,152	610	580	422	409	411	406
1957	Below Normal	364	674	501	332	195	154	81	424	381	405	481	721
1958	Wet	1,322	2,986	3,555	2,730	1,720	1,123	675	483	395	382	395	564
1959	Dry	335	875	547	172	107	116	94	307	374	383	397	397
1960	Critical	343	635	273	164	101	127	49	286	365	387	372	395
1961	Critical	321	166	200	143	70	55	40	264	341	359	360	681
1962	Below Normal	975	788	640	446	253	182	78	346	362	376	376	410
1963	Above Normal	467	540	787	454	277	194	158	411	397	398	404	404
1964	Dry	320	533	327	197	163	114	77	346	356	528	1,780	497
1965	Wet	355	527	751	444	291	1,448	634	474	866	812	1,055	724
1966	Below Normal	346	885	611	257	206	165	79	293	366	400	408	424
1967	Wet	746	1,756	2,666	4,147	4,063	1,494	797	747	411	330	382	382
1968	Dry	358	927	614	249	196	177	130	275	431	434	903	4,093
1969	Wet	1,534	2,098	5,555	4,141	2,433	1,233	711	825	320	444	2,940	1,265
1970	Above Normal	917	986	657	329	256	222	150	383	375	359	425	384
1971	Below Normal	331	876	690	314	256	188	102	359	386	423	270	270
1972	Dry	263	726	374	281	240	222	18	309	412	432	474	889
1973	Above Normal	652	435	1,326	286	600	1,038	574	815	776	1,095	1,690	870
1974	Wet	1,126	325	2,091	390	841	1,054	586	667	350	409	307	2,026
1975	Wet	1,073	423	776	2,343	1,163	1,062	533	1,107	357	362	392	392
1976	Critical	291	509	483	255	175	205	136	354	311	322	373	253
1977	Critical	234	528	313	173	106	81	44	268	282	350	516	824
1978	Wet	582	219	566	4,016	2,613	1,294	1,369	509	579	441	1,541	1,932
1979	Above Normal	1,485	531	1,330	355	262	731	443	698	374	392	3,976	3,976
1980	Wet	1,490	752	617	2,222	2,284	1,248	583	629	398	444	479	452
1981	Dry	479	945	596	240	168	168	97	401	405	414	484	1,795
1982	Wet	2,297	4,921	3,385	1,922	2,249	1,390	1,170	1,344	1,754	2,298	3,657	4,416
1983	Wet	6,069	1,408	2,947	7,343	5,943	2,444	1,100	1,196	1,802	3,551	1,903	1,903
1984	Above Normal	512	362	748	328	291	277	217	779	338	334	488	759
1985	Dry	371	577	412	274	236	206	100	405	395	408	380	3,446
1986	Wet	4,143	921	1,748	1,415	946	1,113	737	558	416	418	381	380
1987	Critical	393	476	385	183	130	135	87	356	340	375	377	377
1988	Critical	246	264	279	201	97	92	52	256	274	322	304	310
1989	Critical	339	165	41	142	68	62	67	305	303	327	310	346
1990	Critical	205	110	181	146	72	68	26	248	258	274	292	205
1991	Critical	359	200	168	146	91	54	10	270	289	297	291	291
1992	Critical	298	201	139	139	76	55	11	206	313	350	684	449
1993	Wet	438	44	63	1,667	1,492	1,085	640	739	369	334	315	381
1994	Critical	186	293	131	142	41	54	2	239	327	317	611	386
1995	Wet	3,626	1,035	3,031	5,130	4,891	1,700	509	474	379	365	844	844
1996	Wet	1,633	673	1,834	290	374	903	480	613	845	3,494	9,912	2,144
1997	Wet	1,191	589	385	240	149	157	512	389	336	356	1,396	5,205
1998	Wet	2,115	1,235	1,064	5,045	4,614	1,499	759	741	382	296	820	2,026
1999	Above Normal	362	554	682	292	174	196	100	285	345	318	325	325
2000	Above Normal	1,137	614	923	242	175	112	150	692	496	392	389	391
2001	Dry	365	617	394	244	74	84	25	239	403	390	449	307
2002	Dry	249	517	219	172	90	61	2	227	316	353	327	287
2003	Below Normal	241	568	664	160	80	66	41					
	Average	835	689	920	929	702	474	279	458	437	591	903	1,096
	Wet	1,853	1,078	2,017	2,631	2,001	1,188	668	665	557	886	1,474	1,531
	Above Normal	609	478	777	296	272	377	262	536	438	606	900	1,214
	Below Normal	389	700	455	280	172	128	76	335	394	515	522	724
	Dry	343	649	398	184	126	115	63	311	385	385	798	1,304
	Critical	295	342	218	139	83	74	54	277	333	357	419	430
	Dry and Critical	317	479	299	159	102	92	58	292	356	370	589	822

Table 136: Simulated San Joaquin River Below Merced River (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								441	841	1,434	1,138	3,788
1922	Wet	2,374	1,797	1,978	3,581	1,478	953	909	652	1,099	2,081	2,428	2,095
1923	Above Normal	793	1,355	1,116	873	282	848	1,116	767	850	820	727	727
1924	Critical	473	304	221	0	0	26	345	416	837	779	703	1,822
1925	Below Normal	1,037	1,534	1,013	466	156	145	508	440	815	813	706	1,165
1926	Dry	601	1,260	749	164	71	103	505	432	1,094	914	826	2,722
1927	Above Normal	1,167	1,363	760	411	208	168	543	670	1,237	941	887	887
1928	Below Normal	1,263	1,511	716	375	201	155	535	444	891	826	740	1,103
1929	Critical	758	812	389	263	67	94	534	424	786	748	773	1,098
1930	Critical	817	624	427	85	9	52	533	425	872	777	713	998
1931	Critical	418	0	99	33	0	0	356	363	730	1,597	1,249	1,249
1932	Above Normal	1,062	799	451	319	138	72	366	407	718	721	783	930
1933	Dry	754	685	451	234	40	56	337	404	701	760	773	1,145
1934	Critical	614	422	258	69	0	0	329	397	806	813	1,538	1,337
1935	Above Normal	1,696	2,292	1,139	605	287	185	509	569	914	807	889	889
1936	Above Normal	1,641	1,839	2,010	435	205	903	905	908	949	904	1,584	11,086
1937	Wet	4,312	3,527	5,510	918	699	895	917	616	1,102	3,701	3,049	14,961
1938	Wet	16,487	9,581	11,997	10,574	2,494	1,296	1,095	1,074	1,163	870	839	1,284
1939	Dry	1,078	1,276	841	254	103	139	603	537	891	840	2,199	2,199
1940	Above Normal	1,559	1,090	1,867	425	200	307	871	634	900	2,363	2,314	9,321
1941	Wet	4,162	2,379	4,218	2,808	1,922	1,189	998	911	1,137	2,205	3,243	3,230
1942	Wet	1,583	1,318	1,761	3,302	1,791	1,108	965	669	1,352	1,287	6,336	3,257
1943	Wet	8,338	2,283	1,721	624	566	1,025	945	650	1,115	858	778	778
1944	Below Normal	1,177	1,318	668	561	210	202	542	542	1,127	933	821	7,211
1945	Above Normal	2,628	1,383	982	433	1,005	1,005	885	1,051	1,222	2,609	1,512	1,512
1946	Above Normal	1,142	1,213	963	457	207	195	535	775	1,155	1,580	1,001	1,566
1947	Dry	591	302	274	240	85	146	530	514	874	804	686	686
1948	Below Normal	699	1,229	546	387	240	169	552	524	839	792	717	1,007
1949	Below Normal	1,125	668	512	416	157	187	524	475	870	800	873	1,427
1950	Below Normal	843	958	627	448	198	196	568	524	1,730	7,180	4,046	2,702
1951	Above Normal	1,202	964	572	429	225	184	518	524	921	1,256	4,311	4,311
1952	Wet	6,640	3,846	9,015	5,948	2,097	1,318	1,103	615	1,137	935	1,851	1,430
1953	Below Normal	696	1,019	835	392	196	201	510	518	893	825	803	1,168
1954	Below Normal	926	722	535	421	206	198	535	463	869	863	1,015	1,120
1955	Dry	726	557	667	282	157	178	518	459	867	6,318	9,938	9,938
1956	Wet	1,649	1,288	1,682	2,526	2,012	1,222	1,084	754	1,015	831	743	1,056
1957	Below Normal	777	938	981	503	235	222	545	627	849	860	910	2,019
1958	Wet	5,167	7,789	5,198	4,470	1,847	1,229	1,157	649	849	805	759	1,488
1959	Dry	712	1,083	756	242	128	183	640	456	812	789	728	728
1960	Critical	655	762	556	225	99	164	497	434	869	825	703	982
1961	Critical	607	159	268	157	38	65	468	413	811	781	691	3,752
1962	Below Normal	2,056	1,026	664	634	307	248	532	530	814	781	919	1,878
1963	Above Normal	1,159	1,976	1,408	693	366	279	631	631	1,126	869	800	800
1964	Dry	606	724	578	329	199	179	531	549	944	1,747	4,054	1,414
1965	Wet	968	1,615	1,214	666	357	1,558	1,105	639	1,868	1,478	1,646	1,569
1966	Below Normal	793	1,139	882	344	244	232	533	441	870	1,552	1,146	1,413
1967	Wet	2,458	7,848	7,280	7,791	6,072	1,599	1,271	912	914	785	746	746
1968	Dry	779	1,133	865	335	218	250	585	452	935	1,002	7,797	17,836
1969	Wet	11,821	12,326	14,836	13,575	3,068	1,337	1,203	1,050	1,057	931	5,725	2,290
1970	Above Normal	2,016	1,297	960	484	295	290	604	551	896	1,042	968	1,070
1971	Below Normal	814	1,164	1,005	485	295	256	556	517	882	943	634	634
1972	Dry	489	821	694	368	261	288	482	476	986	886	1,115	3,407
1973	Above Normal	2,473	1,024	1,469	649	641	1,106	1,029	1,053	1,393	1,696	3,269	1,643
1974	Wet	2,299	1,681	1,991	757	908	1,123	1,041	856	954	864	687	3,339
1975	Wet	2,415	1,620	1,272	2,330	1,234	1,149	987	1,313	980	801	706	706
1976	Critical	524	548	547	303	194	271	625	512	795	727	688	735
1977	Critical	291	418	311	118	13	36	338	374	631	802	1,981	6,663
1978	Wet	6,737	9,051	6,688	5,530	2,708	1,384	1,896	658	1,100	879	2,392	3,478
1979	Above Normal	3,201	1,507	1,304	511	325	799	898	890	876	830	9,166	9,166
1980	Wet	7,771	2,654	1,607	2,204	2,377	1,317	1,038	778	984	882	941	1,112
1981	Dry	1,081	1,218	825	311	207	235	552	609	942	917	1,840	4,951
1982	Wet	5,454	13,598	9,286	3,402	2,359	1,495	1,743	1,610	4,924	10,966	14,189	19,664
1983	Wet	22,239	13,414	13,418	17,752	11,034	2,572	1,674	1,822	5,312	10,011	6,007	6,007
1984	Above Normal	1,158	985	857	431	329	360	670	748	893	805	851	1,495
1985	Dry	970	814	512	367	257	272	554	597	915	911	792	12,140
1986	Wet	13,219	5,124	5,147	2,445	987	1,182	1,201	742	1,012	840	712	1,057
1987	Critical	929	539	413	249	149	175	530	525	817	797	740	740
1988	Critical	484	406	356	218	67	106	483	404	744	744	619	895
1989	Critical	818	168	79	161	42	78	595	490	764	732	641	905
1990	Critical	436	82	279	158	54	77	454	414	697	664	590	717
1991	Critical	1,336	290	199	138	25	44	296	408	625	619	550	550
1992	Critical	769	252	126	79	26	21	296	322	649	721	3,068	2,106
1993	Wet	1,803	579	400	1,945	1,598	1,187	1,096	930	1,008	772	629	1,064
1994	Critical	319	379	288	148	0	66	310	355	711	655	2,422	3,193
1995	Wet	9,783	6,502	10,075	7,425	9,183	1,789	1,000	623	999	836	1,403	1,403
1996	Wet	3,625	1,357	2,956	429	465	1,005	953	807	1,977	10,307	32,109	8,811
1997	Wet	1,825	1,146	904	327	187	181	538	534	907	810	2,649	13,765
1998	Wet	5,713	7,780	8,454	11,995	9,062	1,589	1,249	934	1,133	784	1,347	3,101
1999	Above Normal	919	1,256	1,134	430	212	280	588	466	810	724	851	851
2000	Above Normal	2,471	1,339	1,230	384	200	197	531	964	964	814	769	1,182
2001	Dry	1,118	882	633	314	111	167	488	397	890	991	975	1,007
2002	Dry	809	602	438	241	127	143	455	375	836	922	739	952
2003	Below Normal	657	834	752	281	151	163	496					
	Average	2,543	2,114	2,069	1,623	941	537	720	632	1,062	1,506	2,283	3,154
	Wet	6,202	5,004	5,359	4,722	2,771	1,279	1,132	867	1,462	2,313	3,830	4,070
	Above Normal	1,643	1,355	1,139	498	320	449	700	709	980	1,189	1,872	3,013
	Below Normal	989	1,081	749	440	215	198	533	504	954	1,431	1,111	1,904
	Dry	793	874	637	283	151	180	521	481	899	1,369	2,497	4,548
	Critical	640	385	301	150	49	80	437	417	759	799	1,104	1,734
	Dry and Critical	709	604	452	210	95	125	475	446	822	1,055	1,729	2,995

Table 137: Simulated San Joaquin River Below Merced River (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								513	1,059	1,434	1,138	3,932
1922	Wet	3,106	2,023	1,917	3,624	1,484	960	933	725	1,317	2,078	2,363	2,244
1923	Above Normal	1,525	2,485	1,252	916	288	854	1,140	767	850	820	727	727
1924	Critical	1,205	297	215	0	0	26	345	489	1,055	779	703	1,962
1925	Below Normal	1,769	2,100	1,088	510	162	151	533	512	1,033	813	706	1,305
1926	Dry	1,333	1,898	764	207	77	109	529	504	1,312	914	826	2,857
1927	Above Normal	1,899	2,164	935	455	214	174	568	743	1,455	941	887	887
1928	Below Normal	1,995	2,154	789	419	207	161	559	517	1,109	826	740	1,243
1929	Critical	1,490	859	466	307	73	100	558	497	1,004	748	773	1,238
1930	Critical	1,549	731	394	156	43	81	567	425	872	777	713	998
1931	Critical	1,150	0	99	32	0	0	355	436	946	1,597	1,249	1,249
1932	Above Normal	1,794	2,052	656	362	144	78	390	479	936	721	783	1,070
1933	Dry	1,486	1,321	533	278	46	62	361	476	919	760	773	1,285
1934	Critical	1,346	455	314	112	0	0	354	470	1,024	813	1,538	1,477
1935	Above Normal	2,428	3,147	1,299	648	293	191	534	642	1,132	807	889	889
1936	Above Normal	2,373	2,814	1,897	478	366	909	929	980	1,167	904	1,584	9,182
1937	Wet	4,583	3,393	4,045	961	705	901	941	688	1,320	3,700	2,910	13,509
1938	Wet	15,792	7,958	11,608	10,189	2,500	1,302	1,119	1,147	1,381	870	839	1,424
1939	Dry	1,810	1,358	885	298	109	145	628	610	1,109	840	2,199	2,199
1940	Above Normal	2,291	2,316	1,888	470	207	336	895	706	1,119	2,363	2,306	7,755
1941	Wet	4,896	3,560	5,774	4,488	1,929	1,195	1,022	983	1,355	2,199	2,585	3,360
1942	Wet	2,315	2,544	1,804	3,346	1,798	1,114	989	741	1,570	1,287	4,133	3,397
1943	Wet	7,377	2,799	1,631	668	490	1,032	970	722	1,326	858	778	778
1944	Below Normal	1,909	1,962	741	605	216	208	566	615	1,345	933	821	5,467
1945	Above Normal	3,356	2,303	1,023	698	1,012	1,011	909	1,123	1,440	2,609	1,512	1,652
1946	Above Normal	1,874	2,137	931	501	213	201	745	969	1,373	1,580	1,001	1,706
1947	Dry	1,323	1,425	567	283	92	152	554	587	1,092	804	686	686
1948	Below Normal	1,431	1,825	591	431	246	176	577	597	1,057	792	717	1,147
1949	Below Normal	1,857	1,304	528	460	164	194	549	548	1,088	800	873	1,567
1950	Below Normal	1,575	1,587	581	492	204	202	592	596	1,948	3,620	3,147	2,842
1951	Above Normal	1,934	1,770	812	473	231	190	542	596	1,139	1,256	4,550	4,550
1952	Wet	6,628	4,516	7,302	5,431	2,103	1,324	1,127	688	1,355	935	1,851	1,570
1953	Below Normal	1,428	1,663	902	435	202	207	534	591	1,111	825	803	1,308
1954	Below Normal	1,658	1,366	578	464	212	204	560	536	1,087	863	1,015	1,260
1955	Dry	1,458	1,178	668	325	163	184	543	532	1,085	4,780	9,592	9,592
1956	Wet	2,176	2,224	3,109	3,836	2,018	1,228	1,109	827	1,234	831	743	1,196
1957	Below Normal	1,509	1,594	1,006	547	241	228	569	699	1,067	860	910	2,159
1958	Wet	5,291	9,178	6,102	4,261	1,853	1,235	1,182	721	1,067	805	759	1,628
1959	Dry	1,444	1,758	799	285	134	189	664	528	1,030	789	728	728
1960	Critical	1,387	843	546	268	105	170	521	434	869	825	703	982
1961	Critical	1,339	159	268	157	39	65	468	485	1,029	781	691	3,892
1962	Below Normal	2,788	2,285	1,036	678	313	255	557	602	1,032	781	919	1,956
1963	Above Normal	1,891	2,783	1,477	737	372	285	655	703	1,344	869	800	800
1964	Dry	1,338	770	601	373	206	185	555	621	1,162	1,747	3,401	1,554
1965	Wet	1,701	2,841	1,235	710	371	1,565	1,130	712	2,086	1,478	1,646	1,709
1966	Below Normal	1,525	1,791	947	387	250	238	557	514	1,088	1,552	1,146	1,553
1967	Wet	2,864	8,211	7,175	6,156	6,079	1,605	1,295	985	1,133	785	746	746
1968	Dry	1,511	1,206	917	379	224	256	609	524	1,153	1,002	6,332	16,093
1969	Wet	11,065	12,398	15,369	11,553	3,062	1,343	1,227	1,123	1,275	931	5,362	2,443
1970	Above Normal	2,772	1,955	1,019	527	300	295	629	623	1,114	1,042	968	1,210
1971	Below Normal	1,546	1,808	1,079	529	302	263	581	589	1,100	943	634	634
1972	Dry	1,221	1,496	639	411	268	294	506	548	1,204	886	1,115	3,544
1973	Above Normal	3,205	2,312	1,809	502	646	1,112	1,053	1,125	1,611	1,696	2,525	1,783
1974	Wet	3,031	2,566	2,486	596	914	1,129	1,066	929	1,172	864	687	3,479
1975	Wet	3,217	2,398	1,431	2,643	1,240	1,155	1,012	1,313	983	801	706	706
1976	Critical	1,256	555	553	303	194	271	625	512	795	727	688	735
1977	Critical	291	416	313	118	13	36	338	447	773	802	1,981	5,189
1978	Wet	6,109	7,647	6,424	6,930	2,714	1,390	1,920	730	1,318	879	2,392	3,598
1979	Above Normal	3,855	2,286	1,704	555	331	805	922	963	1,094	830	7,395	7,395
1980	Wet	7,147	2,432	2,263	4,029	2,383	1,323	1,062	850	1,202	882	941	1,252
1981	Dry	1,813	1,893	868	354	213	242	576	682	1,160	917	1,840	3,818
1982	Wet	5,836	13,431	7,816	4,052	2,365	1,501	1,767	1,683	3,960	10,359	13,845	17,573
1983	Wet	22,800	13,271	12,925	17,277	11,029	2,579	1,698	1,908	4,963	9,109	5,412	5,412
1984	Above Normal	1,890	1,791	1,023	474	335	366	695	1,062	1,111	805	851	1,635
1985	Dry	1,702	1,458	585	410	264	278	578	670	1,133	911	792	10,682
1986	Wet	12,475	4,890	4,734	2,993	993	1,188	1,225	814	1,230	840	712	1,197
1987	Critical	1,661	588	488	292	155	182	555	597	1,035	797	740	740
1988	Critical	1,216	455	378	261	73	112	507	477	962	744	619	1,035
1989	Critical	1,550	843	122	205	48	85	619	562	982	732	641	1,045
1990	Critical	1,168	163	322	202	60	83	478	487	915	664	590	857
1991	Critical	2,068	968	242	182	31	50	321	481	843	619	550	550
1992	Critical	1,501	333	169	122	32	27	320	395	867	721	3,068	2,246
1993	Wet	2,535	1,831	1,669	3,950	1,604	1,193	1,120	1,002	1,226	772	629	1,204
1994	Critical	1,051	416	331	191	0	72	334	428	929	655	2,412	2,084
1995	Wet	10,531	5,797	8,115	7,674	9,193	1,795	1,024	696	1,217	836	1,403	1,403
1996	Wet	3,874	2,440	2,239	473	471	1,011	977	880	2,130	8,140	31,627	8,388
1997	Wet	2,557	2,069	1,888	1,590	193	230	991	627	1,118	810	2,624	11,582
1998	Wet	6,082	7,465	7,133	9,671	9,071	1,595	1,273	1,007	1,351	784	1,347	3,241
1999	Above Normal	1,651	2,193	1,092	474	219	286	612	538	1,028	724	851	851
2000	Above Normal	3,287	2,258	1,400	428	206	204	646	1,061	1,182	814	769	1,322
2001	Dry	1,850	1,539	695	357	117	173	512	470	1,108	991	975	1,147
2002	Dry	1,541	1,278	473	284	133	149	480	448	1,054	922	739	1,092
2003	Below Normal	1,389	2,051	1,080	325	158	169	520					
	Average	3,115	2,619	2,092	1,698	948	544	752	705	1,243	1,399	2,154	2,980
	Wet	6,416	5,328	5,258	4,879	2,773	1,287	1,174	938	1,595	2,160	3,627	3,877
	Above Normal	2,377	2,298	1,263	544	336	456	742	800	1,186	1,189	1,737	2,785
	Below Normal	1,721	1,807	842	483	221	204	558	576	1,172	1,134	1,036	1,870
	Dry	1,525	1,429	692	327	157	186	546	554	1,117	1,251	2,308	4,252
	Critical	1,327	505	326	182	54	85	454	476	931	799	1,104	1,643
	Dry and Critical	1,416	919	490	247	100	130	495	511	1,015	1,002	1,643	2,812

Table 138: Simulated San Joaquin River Below Tuolumne River (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1,277	1,471	2,032	1,742	4,474
1922	Wet	3,007	5,193	3,753	12,155	3,448	1,607	1,591	1,489	1,695	2,905	4,407	4,054
1923	Above Normal	1,658	4,443	2,718	1,535	913	1,500	1,810	1,616	1,483	1,401	1,307	1,307
1924	Critical	1,046	807	717	296	285	358	713	868	1,279	1,220	1,130	2,276
1925	Below Normal	1,539	3,271	2,743	992	583	615	1,017	1,102	1,342	1,290	1,171	1,651
1926	Dry	1,095	2,261	1,842	596	489	566	1,007	1,025	1,543	1,366	1,283	3,241
1927	Above Normal	1,717	3,105	2,544	1,165	819	821	1,228	1,524	1,853	1,554	1,489	1,489
1928	Below Normal	4,157	3,345	1,983	833	634	629	1,047	1,107	1,387	1,304	1,209	1,602
1929	Critical	1,249	1,554	1,193	575	349	424	911	903	1,277	1,186	1,209	1,601
1930	Critical	1,279	1,359	1,288	415	312	398	922	903	1,325	1,227	1,150	1,465
1931	Critical	869	512	616	333	289	336	726	808	1,167	2,027	1,676	1,676
1932	Above Normal	1,556	2,306	1,961	1,058	753	714	1,041	1,256	1,374	1,313	1,366	1,543
1933	Dry	1,375	1,657	1,414	699	459	520	847	1,000	1,197	1,212	1,207	1,606
1934	Critical	1,073	932	764	371	287	334	703	855	1,252	1,250	1,974	1,806
1935	Above Normal	2,125	3,936	2,901	1,357	893	826	1,195	1,420	1,523	1,404	1,482	1,482
1936	Above Normal	5,183	5,207	3,546	1,150	863	1,548	1,588	1,757	1,597	1,504	2,174	14,869
1937	Wet	8,815	7,070	7,076	1,603	1,298	1,538	1,602	1,463	1,748	5,623	4,662	22,073
1938	Wet	24,307	15,116	17,518	15,045	6,242	1,959	1,798	2,125	1,840	1,474	1,434	2,189
1939	Dry	2,500	2,544	2,018	696	534	614	1,121	1,134	1,388	1,280	2,633	2,633
1940	Above Normal	5,108	4,980	3,080	1,222	878	905	1,501	1,390	1,453	3,119	3,583	14,334
1941	Wet	9,089	6,985	5,528	4,140	4,526	1,895	1,649	1,718	1,739	2,853	6,522	6,666
1942	Wet	4,337	5,597	6,224	5,965	5,139	1,929	1,772	1,600	1,994	1,914	9,759	6,514
1943	Wet	14,571	6,102	3,318	2,681	1,700	1,616	1,486	1,520	1,726	1,485	1,429	1,429
1944	Below Normal	2,187	3,176	2,148	1,098	670	686	1,000	1,186	1,581	1,322	1,350	9,336
1945	Above Normal	6,598	4,065	2,661	1,027	1,749	1,724	1,560	1,854	1,689	6,370	4,216	4,534
1946	Above Normal	4,347	3,541	2,912	1,289	893	876	1,216	1,552	1,733	2,256	1,617	2,201
1947	Dry	1,198	1,166	1,095	648	454	577	975	1,112	1,328	1,203	1,080	1,080
1948	Below Normal	1,149	2,277	1,708	1,103	783	661	999	1,161	1,334	1,204	1,237	1,524
1949	Below Normal	1,894	1,587	1,500	850	560	627	968	1,115	1,372	1,263	1,559	1,856
1950	Below Normal	1,392	2,513	2,104	1,054	638	652	1,040	1,155	1,937	11,452	7,806	6,421
1951	Above Normal	4,099	3,563	2,440	847	703	669	991	1,103	1,322	1,732	5,158	5,158
1952	Wet	10,482	8,548	14,187	10,416	5,902	2,028	1,801	1,413	1,645	1,453	2,586	2,708
1953	Below Normal	1,351	3,233	2,777	787	770	723	1,013	1,095	1,293	1,216	1,201	1,580
1954	Below Normal	1,409	1,907	1,687	916	633	662	1,007	1,047	1,255	1,284	1,718	1,487
1955	Dry	1,231	1,496	1,557	695	539	608	959	969	1,267	6,760	16,878	16,878
1956	Wet	4,848	3,804	3,245	5,893	5,003	1,990	1,763	1,568	1,521	1,322	1,261	1,637
1957	Below Normal	1,508	3,168	3,033	948	687	713	1,053	1,235	1,255	1,292	1,472	2,865
1958	Wet	8,668	13,996	10,194	9,609	4,635	1,993	1,910	1,519	1,396	1,386	1,383	2,454
1959	Dry	2,034	2,407	1,895	652	524	596	1,114	1,032	1,202	1,097	1,091	1,091
1960	Critical	1,090	1,445	1,341	465	335	456	840	766	1,199	1,107	1,040	1,358
1961	Critical	1,006	617	699	368	244	324	723	733	1,126	1,104	1,005	4,694
1962	Below Normal	2,598	3,058	2,565	1,054	715	725	1,041	1,109	1,114	1,097	1,344	2,372
1963	Above Normal	1,438	3,621	2,884	1,231	946	863	1,249	1,298	1,508	1,269	1,319	1,319
1964	Dry	1,123	1,516	1,301	659	501	525	911	1,010	1,210	1,981	7,032	4,957
1965	Wet	4,036	4,846	2,778	1,079	953	2,223	1,925	1,340	2,361	3,588	2,751	3,612
1966	Below Normal	1,915	2,403	1,972	647	543	558	878	946	1,138	1,871	1,729	1,700
1967	Wet	3,708	12,461	11,289	14,337	12,654	2,280	2,051	1,674	1,365	1,271	1,263	1,263
1968	Dry	1,699	2,396	2,102	736	621	676	1,017	968	1,303	1,291	8,907	23,293
1969	Wet	15,767	17,525	21,726	21,171	6,944	1,888	1,819	2,386	1,820	2,079	11,721	4,876
1970	Above Normal	5,122	3,148	2,628	834	782	735	1,133	1,341	1,400	1,574	1,492	1,528
1971	Below Normal	1,909	3,060	2,835	904	680	689	1,017	1,148	1,232	1,467	1,001	1,001
1972	Dry	864	1,781	1,687	704	590	658	868	907	1,439	1,409	1,640	4,235
1973	Above Normal	3,068	2,677	2,837	1,726	1,179	1,700	1,644	1,734	2,139	3,723	6,134	3,399
1974	Wet	6,139	4,396	3,767	3,850	2,021	1,685	1,802	2,044	2,070	1,653	1,330	5,784
1975	Wet	6,105	4,168	3,239	4,816	2,551	1,803	1,711	2,784	1,819	1,385	1,250	1,250
1976	Critical	1,083	1,156	1,074	518	394	556	930	817	1,105	1,050	984	1,064
1977	Critical	577	776	708	247	136	194	511	613	901	1,053	2,413	7,213
1978	Wet	7,317	10,586	8,190	8,638	3,187	1,922	2,443	1,168	1,812	1,491	3,439	7,136
1979	Above Normal	7,507	3,813	6,888	1,054	930	1,508	1,516	1,617	1,690	1,708	12,350	12,350
1980	Wet	11,604	5,134	3,803	7,326	5,947	1,972	1,839	1,637	1,786	1,402	1,634	1,723
1981	Dry	1,892	2,602	2,005	680	583	669	995	1,167	1,364	1,518	2,401	11,630
1982	Wet	11,078	22,902	15,755	8,304	6,103	2,179	4,223	4,906	8,077	16,306	19,471	26,390
1983	Wet	38,367	18,586	21,409	22,135	17,364	5,531	3,867	2,882	10,799	17,489	10,177	10,177
1984	Above Normal	4,312	2,744	2,725	1,080	938	1,040	1,371	1,609	1,868	1,236	1,341	2,106
1985	Dry	1,658	1,771	1,614	831	651	723	1,015	1,049	1,279	1,268	1,077	14,568
1986	Wet	21,277	8,131	8,492	6,184	1,689	1,808	1,966	2,028	2,339	1,407	1,309	1,610
1987	Critical	1,662	1,157	1,006	485	368	438	801	790	1,103	1,051	1,045	1,045
1988	Critical	780	880	803	355	196	287	675	619	964	990	863	1,166
1989	Critical	1,175	726	632	310	192	279	839	729	1,037	965	877	1,209
1990	Critical	706	494	789	304	203	286	680	649	962	887	798	977
1991	Critical	1,810	777	774	265	166	243	500	643	891	837	774	774
1992	Critical	1,104	641	558	216	156	192	489	559	885	938	3,849	2,588
1993	Wet	2,110	1,803	1,840	6,079	3,710	1,597	1,601	1,627	1,484	1,186	1,029	1,556
1994	Critical	727	919	817	323	161	273	518	610	930	879	2,941	3,347
1995	Wet	17,773	11,311	19,695	12,600	17,588	3,661	1,897	1,499	1,477	1,267	1,942	1,942
1996	Wet	8,547	4,256	5,717	3,563	1,317	1,576	1,589	1,518	2,503	16,602	49,845	12,531
1997	Wet	4,653	2,950	2,482	861	740	751	1,127	1,343	1,244	1,242	3,550	20,689
1998	Wet	10,824	11,741	14,125	19,069	15,863	2,199	1,915	2,016	1,640	1,480	3,356	8,103
1999	Above Normal	4,621	3,524	2,742	981	764	866	1,196	1,172	1,280	1,068	1,285	1,285
2000	Above Normal	6,223	3,899	3,035	1,755	744	975	1,355	1,661	1,458	1,232	1,288	1,584
2001	Dry	2,543	1,890	1,614	685	448	558	888	834	1,133	1,375	1,403	1,250
2002	Dry	1,165	1,309	1,352	564	452	548	851	805	1,084	1,216	1,004	1,194
2003	Below Normal	981	1,998	2,062	576	431	534	866					
	Average	4,679	4,223	4,003	3,089	2,079	1,080	1,289	1,326	1,648	2,336	3,549	4,739
	Wet	10,726	8,884	8,973	8,647	5,689	2,068	1,965	1,886	2,413	3,761	6,146	6,598
	Above Normal	4,043	3,661	3,031	1,207	922	1,079	1,350	1,481	1,579	2,029	2,902	4,409
	Below Normal	1,845	2,692	2,240	905	641	652	996	1,117	1,353	2,172	1,900	2,783
	Dry	1,567	1,907	1,654	680	526	603	967	1,001	1,287	1,767	3,664	6,743
	Critical	1,077	922	861	365	255	336	717	742	1,088	1,111	1,483	2,141
	Dry and Critical	1,297	1,364	1,216	507	376	456	829	858	1,177	1,405	2,461	4,204

Table 139: Simulated San Joaquin River Below Tuolumne River (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1,350	1,689	2,032	1,742	4,617
1922	Wet	3,739	5,419	3,692	12,198	3,454	1,613	1,615	1,562	1,913	2,902	4,342	4,202
1923	Above Normal	2,390	5,572	2,740	1,577	918	1,505	1,834	1,616	1,483	1,401	1,307	1,307
1924	Critical	1,778	800	711	296	285	358	713	940	1,497	1,220	1,130	2,416
1925	Below Normal	2,272	3,791	2,819	1,036	590	621	1,041	1,175	1,560	1,290	1,171	1,791
1926	Dry	1,827	2,851	1,858	640	495	572	1,031	1,098	1,761	1,366	1,283	3,377
1927	Above Normal	2,449	3,738	2,569	1,209	825	827	1,253	1,596	2,071	1,554	1,489	1,489
1928	Below Normal	5,198	3,944	2,057	877	641	635	1,071	1,180	1,605	1,304	1,209	1,742
1929	Critical	1,982	1,600	1,213	618	356	430	936	975	1,495	1,186	1,209	1,741
1930	Critical	2,011	1,466	1,254	486	346	427	956	903	1,325	1,227	1,150	1,465
1931	Critical	1,601	512	615	333	289	336	725	881	1,383	2,027	1,676	1,676
1932	Above Normal	2,288	3,559	2,299	1,102	759	720	1,065	1,329	1,592	1,313	1,366	1,683
1933	Dry	2,107	2,244	1,496	742	465	526	871	1,072	1,415	1,212	1,207	1,746
1934	Critical	1,805	965	820	414	287	334	727	927	1,470	1,250	1,974	1,946
1935	Above Normal	2,857	4,790	2,986	1,401	899	833	1,219	1,492	1,741	1,404	1,482	1,482
1936	Above Normal	6,061	6,182	3,433	1,194	1,024	1,554	1,613	1,830	1,815	1,504	2,174	12,965
1937	Wet	9,086	6,936	5,611	1,647	1,304	1,544	1,626	1,535	1,966	5,623	4,523	20,621
1938	Wet	23,611	13,493	17,130	14,659	6,249	1,966	1,822	2,197	2,058	1,474	1,434	2,329
1939	Dry	3,232	2,593	2,093	739	540	621	1,145	1,207	1,606	1,280	2,633	2,633
1940	Above Normal	5,839	6,206	3,103	1,269	889	937	1,527	1,463	1,671	3,119	3,574	12,768
1941	Wet	9,823	8,166	7,084	5,820	4,533	1,901	1,673	1,791	1,957	2,847	5,864	6,795
1942	Wet	5,069	6,823	6,270	6,013	5,150	1,939	1,798	1,673	2,213	1,914	7,556	6,655
1943	Wet	13,610	6,618	3,229	2,725	1,624	1,622	1,511	1,593	1,937	1,485	1,429	1,429
1944	Below Normal	2,920	3,774	2,221	1,142	676	692	1,025	1,259	1,799	1,322	1,350	7,635
1945	Above Normal	7,327	4,666	2,700	1,293	1,756	1,731	1,585	1,927	1,907	6,601	4,216	4,674
1946	Above Normal	5,080	4,143	2,932	1,333	900	883	1,426	1,746	1,951	2,256	1,617	2,341
1947	Dry	1,930	2,342	1,638	692	460	583	999	1,184	1,546	1,203	1,080	1,080
1948	Below Normal	1,881	2,826	1,706	1,147	791	669	1,024	1,234	1,552	1,204	1,237	1,665
1949	Below Normal	2,626	2,180	1,518	897	571	637	994	1,189	1,590	1,264	1,560	1,996
1950	Below Normal	2,124	3,138	2,025	1,097	644	658	1,064	1,228	2,155	7,990	6,907	6,561
1951	Above Normal	4,831	4,319	2,468	891	709	675	1,015	1,176	1,540	1,732	5,397	5,397
1952	Wet	10,469	9,217	12,474	9,899	5,908	2,034	1,825	1,485	1,863	1,453	2,586	2,848
1953	Below Normal	2,083	3,869	2,800	831	777	730	1,038	1,168	1,511	1,216	1,201	1,721
1954	Below Normal	2,141	2,543	1,730	960	640	669	1,031	1,119	1,473	1,284	1,718	1,627
1955	Dry	1,963	2,070	1,558	738	545	614	983	1,041	1,485	5,221	16,571	16,571
1956	Wet	5,374	4,404	4,640	7,469	5,009	1,996	1,788	1,641	1,739	1,322	1,261	1,777
1957	Below Normal	2,144	3,767	3,055	992	693	720	1,077	1,308	1,473	1,292	1,472	3,005
1958	Wet	8,841	15,385	11,098	9,400	4,642	1,999	1,935	1,592	1,614	1,386	1,383	2,594
1959	Dry	2,766	3,005	1,967	695	529	601	1,138	1,104	1,420	1,097	1,091	1,091
1960	Critical	1,822	1,527	1,331	509	342	462	864	766	1,199	1,107	1,040	1,358
1961	Critical	1,738	617	699	369	245	325	723	806	1,344	1,104	1,005	4,834
1962	Below Normal	3,330	4,317	3,125	1,098	722	732	1,066	1,182	1,332	1,097	1,344	2,451
1963	Above Normal	2,170	4,340	2,869	1,273	950	868	1,273	1,370	1,726	1,269	1,319	1,319
1964	Dry	1,855	1,561	1,324	703	508	532	935	1,082	1,428	1,981	6,427	5,097
1965	Wet	4,768	6,072	2,801	1,126	970	2,232	1,951	1,413	2,579	3,588	2,752	3,752
1966	Below Normal	2,647	3,003	2,044	691	550	565	902	1,018	1,356	1,871	1,729	1,840
1967	Wet	4,148	12,825	11,185	12,702	12,661	2,287	2,075	1,746	1,583	1,271	1,263	1,263
1968	Dry	2,431	2,445	2,176	779	627	682	1,041	1,040	1,521	1,291	7,443	21,550
1969	Wet	15,011	17,597	22,259	19,148	6,939	1,894	1,843	2,458	2,038	2,079	11,358	5,029
1970	Above Normal	5,878	3,785	2,700	876	787	740	1,157	1,414	1,618	1,574	1,492	1,668
1971	Below Normal	2,641	3,659	2,909	950	689	698	1,042	1,221	1,450	1,467	1,001	1,001
1972	Dry	1,595	2,380	1,709	747	596	664	893	980	1,657	1,409	1,640	4,372
1973	Above Normal	3,800	3,999	3,501	1,335	1,185	1,706	1,668	1,807	2,472	3,723	5,390	3,539
1974	Wet	6,871	5,281	3,965	3,972	2,027	1,691	1,826	2,116	2,288	1,653	1,330	5,800
1975	Wet	6,906	4,768	3,328	5,326	2,557	1,809	1,735	2,784	1,822	1,385	1,250	1,250
1976	Critical	1,815	1,163	1,081	518	394	556	929	817	1,105	1,050	984	1,064
1977	Critical	577	774	710	247	136	194	511	686	1,043	1,053	2,413	5,740
1978	Wet	6,689	9,182	7,926	9,969	3,192	1,927	2,467	1,240	2,030	1,491	3,439	7,255
1979	Above Normal	8,161	4,413	7,411	1,097	936	1,515	1,541	1,690	1,908	1,708	10,467	10,467
1980	Wet	10,979	4,912	4,459	9,151	5,953	1,979	1,864	1,709	2,004	1,402	1,634	1,863
1981	Dry	2,624	3,201	2,078	725	590	676	1,020	1,240	1,582	1,518	2,436	10,497
1982	Wet	11,460	22,735	14,285	8,955	6,109	2,185	4,247	4,979	7,113	15,700	19,127	24,299
1983	Wet	38,927	18,442	20,916	21,660	17,359	5,537	3,892	2,967	10,450	16,586	9,582	9,582
1984	Above Normal	5,044	3,472	2,750	1,123	944	1,046	1,396	1,924	2,086	1,236	1,341	2,246
1985	Dry	2,390	2,369	1,637	875	658	729	1,040	1,122	1,497	1,268	1,077	13,298
1986	Wet	20,533	7,896	8,079	6,732	1,695	1,814	1,990	2,100	2,557	1,407	1,309	1,750
1987	Critical	2,394	1,207	1,081	528	374	444	825	862	1,322	1,051	1,046	1,046
1988	Critical	1,512	929	825	399	202	294	700	692	1,182	990	863	1,306
1989	Critical	1,907	1,355	675	353	198	286	863	802	1,255	965	877	1,349
1990	Critical	1,438	576	833	348	209	292	704	722	1,180	887	798	1,117
1991	Critical	2,542	1,407	818	309	172	249	525	715	1,109	837	774	774
1992	Critical	1,836	723	601	260	163	199	513	631	1,103	938	3,849	2,729
1993	Wet	2,842	3,055	3,102	8,077	3,714	1,602	1,625	1,699	1,702	1,186	1,029	1,696
1994	Critical	1,459	955	859	365	160	278	542	683	1,148	879	2,930	2,238
1995	Wet	18,521	10,606	17,735	12,849	17,598	3,667	1,922	1,572	1,695	1,267	1,942	1,942
1996	Wet	8,796	5,338	5,000	3,606	1,323	1,582	1,614	1,590	2,656	14,435	49,363	12,108
1997	Wet	5,385	3,552	3,292	2,124	746	801	1,579	1,436	1,455	1,242	3,524	18,827
1998	Wet	11,180	11,425	12,804	16,745	15,872	2,205	1,939	2,089	1,858	1,480	3,356	8,243
1999	Above Normal	5,354	4,125	2,764	1,025	771	872	1,221	1,245	1,498	1,068	1,285	1,285
2000	Above Normal	7,039	4,502	3,408	1,905	751	981	1,470	1,757	1,676	1,232	1,288	1,724
2001	Dry	3,227	2,489	1,658	729	455	564	913	907	1,351	1,375	1,403	1,390
2002	Dry	1,897	1,954	1,316	610	461	556	876	878	1,302	1,216	1,004	1,334
2003	Below Normal	1,713	3,214	2,521	620	437	540	891					
	Average	5,256	4,684	4,026	3,170	2,087	1,087	1,321	1,399	1,831	2,233	3,421	4,570
	Wet	10,943	9,173	8,848	8,832	5,691	2,076	2,007	1,957	2,545	3,607	5,943	6,413
	Above Normal	4,785	4,488	3,165	1,244	938	1,087	1,391	1,572	1,791	2,043	2,761	4,175
	Below Normal	2,594	3,386	2,348	949	648	659	1,020	1,190	1,571	1,883	1,825	2,753
	Dry	2,296	2,424	1,732	724	533	609	991	1,073	1,505	1,649	3,484	6,464
	Critical	1,764	1,036	883	397	260	342	735	801	1,260	1,111	1,482	2,050
	Dry and Critical	2,002	1,658	1,263	544	382	462	850	923	1,370	1,352	2,380	4,029

Table 140: Simulated End-of-Month New Melones Reservoir storage (TAF) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								998	1,008	1,038	1,069	1,177
1922	Above Normal	1,249	1,245	1,464	1,719	1,680	1,601	1,552	1,523	1,532	1,592	1,650	1,695
1923	Below Normal	1,654	1,665	1,755	1,764	1,702	1,607	1,572	1,557	1,543	1,549	1,559	1,559
1924	Critical	1,485	1,415	1,336	1,280	1,235	1,184	1,172	1,161	1,162	1,171	1,185	1,323
1925	Dry	1,400	1,430	1,570	1,624	1,586	1,504	1,466	1,439	1,428	1,428	1,431	1,489
1926	Dry	1,483	1,521	1,469	1,405	1,327	1,253	1,217	1,198	1,209	1,256	1,301	1,441
1927	Wet	1,504	1,559	1,647	1,738	1,668	1,583	1,556	1,557	1,585	1,603	1,612	1,612
1928	Above Normal	1,811	1,787	1,828	1,773	1,677	1,584	1,543	1,515	1,517	1,520	1,521	1,526
1929	Critical	1,494	1,454	1,405	1,376	1,313	1,250	1,220	1,197	1,183	1,180	1,201	1,222
1930	Dry	1,265	1,242	1,194	1,203	1,138	1,070	1,034	1,027	1,038	1,036	1,049	1,045
1931	Critical	1,006	935	845	798	749	692	665	631	632	676	709	709
1932	Dry	852	858	1,027	1,167	1,142	1,079	1,037	1,016	1,001	1,004	1,015	1,011
1933	Critical	992	940	908	934	871	804	769	760	757	772	796	820
1934	Critical	823	752	649	602	547	487	460	431	429	435	469	493
1935	Below Normal	544	680	869	985	934	864	825	821	827	837	912	912
1936	Below Normal	1,166	1,274	1,447	1,530	1,474	1,399	1,363	1,347	1,336	1,344	1,366	1,464
1937	Below Normal	1,561	1,571	1,727	1,770	1,694	1,612	1,567	1,539	1,536	1,611	1,682	1,864
1938	Wet	2,030	2,161	2,420	2,420	2,300	2,130	2,000	1,955	1,933	1,929	1,936	1,942
1939	Dry	1,959	1,887	1,781	1,713	1,635	1,556	1,528	1,495	1,473	1,473	1,569	1,569
1940	Above Normal	1,858	1,926	2,040	2,017	1,919	1,828	1,776	1,742	1,723	1,747	1,793	1,871
1941	Wet	1,970	1,981	2,127	2,159	2,100	2,010	1,954	1,924	1,905	1,937	1,970	1,970
1942	Wet	2,019	2,094	2,242	2,351	2,300	2,130	2,000	1,955	1,965	1,964	1,970	1,970
1943	Wet	2,030	2,142	2,193	2,172	2,089	2,001	1,946	1,908	1,889	1,880	1,876	1,876
1944	Dry	1,901	1,827	1,775	1,763	1,686	1,599	1,557	1,548	1,578	1,599	1,630	1,755
1945	Below Normal	1,830	1,801	1,869	1,911	1,843	1,748	1,706	1,701	1,722	1,798	1,854	1,903
1946	Below Normal	1,945	1,964	2,044	2,001	1,907	1,815	1,772	1,750	1,757	1,768	1,775	1,787
1947	Dry	1,763	1,690	1,620	1,583	1,518	1,453	1,424	1,429	1,423	1,419	1,421	1,421
1948	Below Normal	1,400	1,399	1,433	1,546	1,489	1,418	1,382	1,373	1,366	1,372	1,379	1,378
1949	Dry	1,405	1,376	1,427	1,428	1,367	1,305	1,269	1,237	1,211	1,211	1,260	1,325
1950	Below Normal	1,374	1,364	1,480	1,558	1,500	1,430	1,408	1,404	1,676	1,970	1,970	1,970
1951	Above Normal	2,030	2,015	2,011	1,949	1,855	1,764	1,713	1,685	1,690	1,733	1,866	1,866
1952	Wet	2,030	2,096	2,404	2,420	2,300	2,130	2,000	1,948	1,942	1,951	1,970	1,970
1953	Wet	1,967	1,914	1,844	1,904	1,855	1,771	1,726	1,695	1,688	1,693	1,701	1,707
1954	Above Normal	1,749	1,726	1,786	1,759	1,685	1,611	1,568	1,532	1,531	1,539	1,564	1,576
1955	Dry	1,571	1,549	1,503	1,511	1,441	1,367	1,324	1,299	1,303	1,548	1,808	1,808
1956	Wet	1,987	1,996	2,142	2,213	2,156	2,064	1,997	1,955	1,940	1,940	1,948	1,970
1957	Above Normal	1,998	1,894	1,901	1,932	1,843	1,759	1,711	1,674	1,667	1,664	1,707	1,778
1958	Wet	1,924	2,072	2,378	2,420	2,300	2,130	2,000	1,955	1,938	1,935	1,950	1,970
1959	Below Normal	1,982	1,895	1,763	1,704	1,630	1,553	1,549	1,519	1,505	1,505	1,506	1,506
1960	Dry	1,539	1,506	1,448	1,413	1,349	1,289	1,245	1,202	1,216	1,230	1,239	1,240
1961	Dry	1,219	1,181	1,129	1,075	1,019	962	931	899	899	900	907	989
1962	Below Normal	1,023	1,048	1,089	1,152	1,108	1,037	993	980	981	997	1,051	1,183
1963	Wet	1,235	1,258	1,459	1,561	1,514	1,441	1,416	1,418	1,445	1,461	1,496	1,496
1964	Dry	1,476	1,428	1,373	1,361	1,296	1,232	1,191	1,183	1,200	1,411	1,616	1,721
1965	Wet	1,768	1,827	1,899	1,935	1,889	1,819	1,775	1,732	1,755	1,778	1,807	1,833
1966	Below Normal	1,849	1,795	1,783	1,716	1,633	1,555	1,507	1,468	1,474	1,550	1,647	1,709
1967	Wet	1,809	1,881	2,092	2,345	2,300	2,130	2,000	1,955	1,951	1,948	1,959	1,959
1968	Below Normal	2,009	1,924	1,841	1,785	1,701	1,619	1,571	1,555	1,575	1,580	1,877	1,970
1969	Wet	2,030	2,185	2,420	2,420	2,300	2,130	2,000	1,955	1,955	1,964	1,970	1,970
1970	Wet	2,030	1,966	1,964	1,953	1,852	1,752	1,712	1,681	1,703	1,761	1,811	1,849
1971	Wet	1,885	1,829	1,823	1,869	1,798	1,707	1,664	1,630	1,638	1,678	1,708	1,708
1972	Below Normal	1,713	1,628	1,637	1,604	1,536	1,467	1,441	1,432	1,437	1,462	1,572	1,714
1973	Above Normal	1,821	1,793	1,894	1,896	1,799	1,703	1,659	1,659	1,700	1,764	1,871	1,943
1974	Wet	2,030	2,118	2,241	2,239	2,162	2,062	1,997	1,954	1,951	1,960	1,970	1,970
1975	Wet	2,030	1,996	2,020	2,118	2,051	1,968	1,922	1,914	1,918	1,928	1,929	1,929
1976	Critical	1,868	1,782	1,686	1,614	1,555	1,505	1,471	1,460	1,455	1,447	1,438	1,408
1977	Critical	1,346	1,280	1,217	1,188	1,132	1,077	1,056	1,014	998	1,009	1,087	1,174
1978	Above Normal	1,312	1,407	1,535	1,652	1,634	1,558	1,554	1,519	1,525	1,537	1,601	1,715
1979	Below Normal	1,831	1,803	1,905	1,809	1,703	1,608	1,567	1,559	1,567	1,570	1,867	1,867
1980	Above Normal	2,030	2,059	2,112	2,151	2,130	2,040	1,992	1,955	1,933	1,936	1,970	1,970
1981	Dry	2,006	1,945	1,840	1,755	1,667	1,591	1,566	1,557	1,612	1,739	1,939	1,970
1982	Wet	2,030	2,220	2,360	2,401	2,300	2,130	2,000	1,970	1,970	1,970	1,970	1,970
1983	Wet	2,030	2,095	2,252	2,420	2,300	2,130	2,000	1,955	1,970	1,970	1,970	1,970
1984	Wet	2,030	1,959	1,963	1,935	1,863	1,791	1,765	1,765	1,796	1,826	1,834	1,864
1985	Dry	1,891	1,847	1,772	1,704	1,621	1,548	1,520	1,513	1,517	1,527	1,601	1,970
1986	Wet	2,030	2,070	2,105	2,103	2,006	1,925	1,901	1,883	1,872	1,873	1,863	1,862
1987	Dry	1,886	1,804	1,674	1,600	1,544	1,493	1,473	1,450	1,431	1,419	1,423	1,423
1988	Critical	1,366	1,313	1,239	1,200	1,162	1,126	1,094	1,057	1,037	1,026	1,025	1,031
1989	Dry	1,081	1,050	1,007	989	937	888	892	913	915	930	943	958
1990	Critical	925	861	791	738	680	639	615	605	587	596	594	589
1991	Critical	631	599	565	527	466	410	392	389	378	393	407	407
1992	Critical	476	448	368	314	258	199	172	145	139	156	305	409
1993	Above Normal	564	616	753	857	825	765	732	738	757	787	817	828
1994	Critical	770	720	673	619	551	489	455	437	441	468	653	748
1995	Wet	1,059	1,170	1,404	1,665	1,780	1,729	1,710	1,703	1,692	1,717	1,790	1,790
1996	Wet	2,030	2,045	2,167	2,140	2,046	1,970	1,932	1,942	1,964	1,970	2,110	1,970
1997	Wet	2,030	1,969	1,962	1,908	1,826	1,748	1,731	1,708	1,717	1,737	1,844	1,970
1998	Wet	2,030	2,074	2,171	2,377	2,300	2,130	2,000	1,955	1,955	1,964	1,970	1,970
1999	Wet	2,030	2,007	2,015	1,988	1,910	1,838	1,811	1,797	1,786	1,793	1,843	1,843
2000	Above Normal	2,030	2,011	1,998	1,974	1,882	1,806	1,784	1,800	1,809	1,834	1,839	1,865
2001	Dry	1,897	1,848	1,771	1,692	1,602	1,517	1,471	1,440	1,440	1,474	1,517	1,529
2002	Dry	1,564	1,543	1,500	1,447	1,378	1,312	1,285	1,271	1,283	1,330	1,382	1,401
2003	Above Normal	1,411	1,396	1,415	1,445	1,383	1,322	1,294					
	Average	1,618	1,615	1,654	1,668	1,600	1,516	1,471	1,445	1,450	1,476	1,524	1,560
	Wet	1,907	1,949	2,066	2,122	2,049	1,937	1,866	1,837	1,839	1,851	1,876	1,881
	Above Normal	1,655	1,656	1,728	1,760	1,693	1,612	1,573	1,529	1,533	1,558	1,606	1,651
	Below Normal	1,563	1,558	1,617	1,631	1,561	1,481	1,445	1,429	1,450	1,494	1,573	1,628
	Dry	1,564	1,530	1,493	1,468	1,403	1,334	1,302	1,284	1,288	1,330	1,392	1,448
	Critical	1,098	1,042	973	932	877	822	795	774	766	777	822	861
	Dry and Critical	1,378	1,334	1,285	1,254	1,192	1,129	1,099	1,080	1,079	1,109	1,164	1,213

Table 141: Simulated End-of-Month New Melones Reservoir storage (TAF) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								998	1,008	1,038	1,069	1,177
1922	Above Normal	1,249	1,245	1,464	1,719	1,680	1,601	1,552	1,523	1,532	1,592	1,650	1,695
1923	Below Normal	1,694	1,706	1,797	1,808	1,749	1,654	1,617	1,600	1,585	1,589	1,599	1,599
1924	Critical	1,550	1,479	1,399	1,343	1,298	1,247	1,235	1,223	1,224	1,233	1,247	1,385
1925	Dry	1,460	1,485	1,627	1,680	1,639	1,555	1,516	1,487	1,473	1,470	1,471	1,533
1926	Dry	1,545	1,582	1,529	1,463	1,385	1,311	1,275	1,256	1,267	1,314	1,359	1,498
1927	Wet	1,561	1,611	1,689	1,777	1,705	1,621	1,590	1,591	1,617	1,633	1,642	1,642
1928	Above Normal	1,839	1,812	1,848	1,791	1,694	1,601	1,560	1,532	1,532	1,535	1,536	1,544
1929	Critical	1,530	1,489	1,439	1,408	1,345	1,282	1,251	1,229	1,215	1,212	1,233	1,258
1930	Dry	1,311	1,289	1,237	1,242	1,177	1,109	1,073	1,065	1,076	1,075	1,087	1,084
1931	Critical	1,070	999	908	860	811	754	727	692	692	737	769	769
1932	Dry	911	918	1,076	1,215	1,190	1,126	1,088	1,069	1,056	1,061	1,072	1,074
1933	Critical	1,070	1,024	995	1,020	957	890	852	842	839	852	876	906
1934	Critical	934	860	757	708	652	591	563	533	530	534	567	591
1935	Below Normal	641	776	969	1,084	1,033	962	921	916	921	930	1,005	1,005
1936	Below Normal	1,256	1,354	1,517	1,597	1,538	1,461	1,423	1,406	1,394	1,401	1,421	1,518
1937	Below Normal	1,614	1,617	1,764	1,805	1,727	1,644	1,599	1,570	1,567	1,641	1,711	1,894
1938	Wet	2,030	2,161	2,420	2,420	2,300	2,130	2,000	1,955	1,933	1,929	1,936	1,942
1939	Dry	1,959	1,887	1,781	1,712	1,634	1,555	1,527	1,494	1,472	1,473	1,568	1,568
1940	Above Normal	1,857	1,925	2,039	2,019	1,921	1,830	1,778	1,744	1,725	1,749	1,795	1,873
1941	Wet	1,972	1,983	2,129	2,161	2,102	2,012	1,956	1,925	1,907	1,939	1,970	1,970
1942	Wet	2,019	2,094	2,242	2,351	2,300	2,130	2,000	1,955	1,965	1,964	1,970	1,970
1943	Wet	2,030	2,142	2,193	2,172	2,089	2,001	1,946	1,908	1,889	1,880	1,876	1,876
1944	Dry	1,901	1,827	1,775	1,763	1,686	1,599	1,557	1,548	1,578	1,599	1,630	1,755
1945	Below Normal	1,830	1,803	1,872	1,929	1,861	1,767	1,724	1,718	1,738	1,812	1,869	1,917
1946	Below Normal	1,960	1,978	2,059	2,013	1,921	1,832	1,789	1,765	1,771	1,779	1,786	1,798
1947	Dry	1,786	1,712	1,634	1,596	1,530	1,465	1,443	1,448	1,445	1,445	1,446	1,446
1948	Below Normal	1,444	1,442	1,473	1,586	1,527	1,455	1,419	1,410	1,402	1,407	1,414	1,417
1949	Dry	1,443	1,421	1,471	1,473	1,411	1,349	1,313	1,281	1,255	1,254	1,303	1,369
1950	Below Normal	1,417	1,405	1,516	1,592	1,532	1,462	1,439	1,435	1,705	1,970	1,970	1,970
1951	Above Normal	2,030	2,018	2,014	1,957	1,863	1,772	1,719	1,692	1,695	1,736	1,869	1,869
1952	Wet	2,030	2,096	2,404	2,420	2,300	2,130	2,000	1,948	1,942	1,951	1,970	1,970
1953	Wet	1,977	1,924	1,854	1,916	1,868	1,783	1,740	1,709	1,701	1,705	1,713	1,725
1954	Above Normal	1,766	1,743	1,800	1,772	1,698	1,623	1,580	1,544	1,543	1,550	1,575	1,591
1955	Dry	1,595	1,577	1,530	1,537	1,466	1,391	1,348	1,323	1,327	1,571	1,831	1,831
1956	Wet	2,011	2,022	2,171	2,242	2,185	2,096	2,000	1,955	1,937	1,934	1,942	1,970
1957	Above Normal	2,001	1,896	1,904	1,934	1,846	1,762	1,713	1,677	1,669	1,667	1,709	1,781
1958	Wet	1,926	2,074	2,381	2,420	2,300	2,130	2,000	1,955	1,938	1,935	1,950	1,970
1959	Below Normal	1,982	1,895	1,763	1,704	1,630	1,553	1,549	1,519	1,505	1,505	1,506	1,506
1960	Dry	1,557	1,526	1,466	1,429	1,366	1,305	1,262	1,218	1,232	1,246	1,255	1,252
1961	Dry	1,253	1,215	1,162	1,108	1,052	995	964	932	932	932	940	1,022
1962	Below Normal	1,056	1,078	1,114	1,177	1,133	1,062	1,021	1,007	1,010	1,028	1,082	1,213
1963	Wet	1,265	1,294	1,489	1,590	1,542	1,468	1,440	1,441	1,466	1,480	1,513	1,513
1964	Dry	1,515	1,467	1,411	1,398	1,333	1,269	1,228	1,220	1,237	1,447	1,652	1,758
1965	Wet	1,804	1,863	1,935	1,973	1,926	1,856	1,812	1,769	1,792	1,814	1,842	1,868
1966	Below Normal	1,884	1,824	1,806	1,738	1,654	1,575	1,527	1,488	1,494	1,569	1,666	1,727
1967	Wet	1,827	1,899	2,110	2,363	2,300	2,130	2,000	1,955	1,951	1,948	1,959	1,959
1968	Below Normal	2,009	1,924	1,841	1,785	1,701	1,619	1,571	1,555	1,575	1,580	1,877	1,970
1969	Wet	2,030	2,185	2,420	2,420	2,300	2,130	2,000	1,955	1,955	1,964	1,970	1,970
1970	Wet	2,030	1,968	1,966	1,959	1,859	1,759	1,718	1,688	1,709	1,768	1,818	1,856
1971	Wet	1,891	1,835	1,829	1,877	1,807	1,715	1,672	1,639	1,646	1,686	1,716	1,716
1972	Below Normal	1,736	1,656	1,664	1,628	1,560	1,490	1,465	1,455	1,460	1,485	1,594	1,735
1973	Above Normal	1,842	1,814	1,911	1,889	1,789	1,690	1,648	1,648	1,691	1,758	1,864	1,936
1974	Wet	2,030	2,118	2,242	2,241	2,164	2,067	2,000	1,955	1,949	1,957	1,970	1,970
1975	Wet	2,030	1,999	2,023	2,121	2,053	1,971	1,921	1,914	1,915	1,924	1,925	1,925
1976	Critical	1,875	1,793	1,698	1,626	1,568	1,517	1,484	1,472	1,467	1,460	1,451	1,421
1977	Critical	1,358	1,293	1,229	1,201	1,144	1,090	1,068	1,026	1,010	1,022	1,100	1,186
1978	Above Normal	1,324	1,418	1,544	1,661	1,642	1,566	1,562	1,527	1,533	1,544	1,608	1,722
1979	Below Normal	1,838	1,812	1,915	1,821	1,718	1,624	1,578	1,570	1,576	1,576	1,873	1,873
1980	Above Normal	2,030	2,059	2,112	2,151	2,130	2,040	1,992	1,955	1,933	1,936	1,970	1,970
1981	Dry	2,006	1,945	1,840	1,754	1,667	1,591	1,566	1,557	1,611	1,739	1,939	1,970
1982	Wet	2,030	2,220	2,360	2,401	2,300	2,130	2,000	1,970	1,970	1,970	1,970	1,970
1983	Wet	2,030	2,095	2,252	2,420	2,300	2,130	2,000	1,955	1,970	1,970	1,970	1,970
1984	Wet	2,030	1,962	1,966	1,938	1,866	1,795	1,767	1,767	1,797	1,826	1,834	1,864
1985	Dry	1,891	1,847	1,772	1,706	1,624	1,551	1,522	1,515	1,518	1,527	1,601	1,970
1986	Wet	2,030	2,070	2,105	2,103	2,006	1,925	1,901	1,883	1,872	1,873	1,863	1,862
1987	Dry	1,886	1,804	1,677	1,601	1,544	1,494	1,473	1,449	1,429	1,416	1,420	1,420
1988	Critical	1,392	1,338	1,263	1,222	1,185	1,147	1,115	1,076	1,057	1,046	1,044	1,047
1989	Dry	1,123	1,098	1,053	1,033	981	932	936	956	958	973	986	989
1990	Critical	978	911	840	784	726	685	661	650	632	641	639	633
1991	Critical	675	653	617	577	516	460	441	438	426	441	454	454
1992	Critical	549	519	426	369	313	254	226	199	193	209	358	462
1993	Above Normal	617	674	816	919	887	826	794	799	817	847	877	894
1994	Critical	856	804	755	693	625	563	528	510	513	540	725	819
1995	Wet	1,130	1,238	1,468	1,723	1,838	1,785	1,766	1,758	1,747	1,771	1,843	1,843
1996	Wet	2,030	2,045	2,167	2,140	2,046	1,970	1,932	1,942	1,964	1,970	2,110	1,970
1997	Wet	2,030	1,969	1,963	1,909	1,828	1,754	1,736	1,716	1,721	1,738	1,845	1,970
1998	Wet	2,030	2,074	2,171	2,377	2,300	2,130	2,000	1,955	1,955	1,964	1,970	1,970
1999	Wet	2,030	2,010	2,018	1,993	1,916	1,844	1,814	1,804	1,792	1,797	1,847	1,847
2000	Above Normal	2,030	2,011	1,998	1,973	1,882	1,806	1,780	1,796	1,805	1,829	1,834	1,860
2001	Dry	1,892	1,846	1,770	1,694	1,607	1,523	1,475	1,445	1,444	1,478	1,520	1,538
2002	Dry	1,585	1,572	1,526	1,472	1,402	1,336	1,309	1,294	1,306	1,353	1,404	1,429
2003	Above Normal	1,456	1,444	1,452	1,480	1,418	1,356	1,330					
	Average	1,643	1,640	1,678	1,691	1,623	1,539	1,492	1,467	1,471	1,496	1,544	1,580
	Wet	1,917	1,960	2,076	2,132	2,058	1,946	1,873	1,845	1,846	1,857	1,882	1,888
	Above Normal	1,670	1,671	1,742	1,772	1,704	1,623	1,584	1,536	1,540	1,565	1,613	1,659
	Below Normal	1,597	1,591	1,648	1,662	1,592	1,511	1,474	1,458	1,479	1,519	1,598	1,653
	Dry	1,590	1,557	1,519	1,493	1,427	1,359	1,326	1,309	1,312	1,354	1,416	1,473
	Critical	1,153	1,097	1,027	984	928	873	846	824	816	827	872	911
	Dry and Critical	1,415	1,373	1,322	1,290	1,228	1,164	1,134	1,115	1,114	1,143	1,198	1,248

Table 142: Simulated Stanislaus River Inflow to San Joaquin River (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								310	269	320	251	296
1922	Above Normal	457	1,258	1,068	387	376	422	426	683	520	569	406	283
1923	Below Normal	1,042	1,512	1,432	867	480	425	463	832	490	435	367	367
1924	Critical	535	543	520	308	365	411	415	552	444	400	224	188
1925	Dry	279	1,112	976	387	376	422	426	601	403	345	257	314
1926	Dry	440	592	630	314	376	422	426	555	513	346	246	179
1927	Wet	407	1,438	1,121	391	376	422	426	690	466	422	364	364
1928	Above Normal	571	1,271	1,119	342	376	422	426	674	392	370	366	350
1929	Critical	469	625	698	337	365	411	415	539	320	257	239	366
1930	Dry	472	627	573	318	365	411	415	537	302	255	199	439
1931	Critical	577	465	455	312	365	411	415	523	329	464	235	235
1932	Dry	174	436	494	334	376	422	426	546	361	296	232	383
1933	Critical	414	512	705	334	376	422	426	538	314	361	230	333
1934	Critical	528	412	564	330	365	411	415	511	313	300	237	103
1935	Below Normal	265	793	789	384	553	422	426	551	291	256	251	251
1936	Below Normal	295	801	595	709	474	422	429	568	369	366	259	255
1937	Below Normal	566	1,249	1,042	624	474	422	426	680	482	505	380	494
1938	Wet	1,533	1,811	2,029	5,122	2,000	1,855	1,993	1,313	647	571	462	403
1939	Dry	320	1,020	1,001	305	376	422	439	680	348	307	427	427
1940	Above Normal	592	1,779	1,525	1,009	502	447	477	795	616	600	562	537
1941	Wet	801	1,875	2,310	1,806	632	469	469	825	851	646	1,247	1,956
1942	Wet	682	1,637	1,644	1,695	784	1,721	1,905	1,052	688	825	2,482	2,353
1943	Wet	3,395	1,500	1,648	1,828	486	493	529	872	672	685	586	586
1944	Dry	559	1,399	1,101	494	455	444	431	700	469	477	456	463
1945	Below Normal	493	1,421	1,750	1,235	554	503	508	781	495	366	655	594
1946	Below Normal	487	1,477	1,654	1,017	441	477	493	757	506	509	517	486
1947	Dry	482	1,016	909	385	347	377	386	576	474	425	372	372
1948	Below Normal	562	727	816	559	504	423	395	563	414	402	300	452
1949	Dry	262	599	522	488	377	393	372	502	419	429	271	218
1950	Below Normal	413	909	892	773	390	389	401	542	465	2,051	2,243	2,323
1951	Above Normal	904	1,533	1,732	998	403	408	403	664	472	414	403	403
1952	Wet	845	1,500	1,564	4,291	2,614	1,977	1,847	856	625	614	1,046	1,153
1953	Wet	658	1,451	1,879	1,011	607	442	471	775	483	474	460	512
1954	Above Normal	395	1,187	1,207	394	369	377	351	611	457	490	552	395
1955	Dry	500	782	633	334	326	340	351	509	397	369	761	761
1956	Wet	597	1,753	1,592	1,921	613	484	1,023	870	536	523	509	668
1957	Above Normal	497	1,556	1,495	824	447	441	467	765	505	488	437	558
1958	Wet	515	2,123	1,500	2,981	1,806	1,869	1,839	867	651	694	602	964
1959	Below Normal	565	1,260	1,193	335	346	384	425	638	428	407	408	408
1960	Dry	561	730	722	328	320	345	333	468	363	365	259	472
1961	Dry	591	573	555	310	281	302	303	425	375	379	212	248
1962	Below Normal	304	547	779	278	411	395	394	529	397	357	268	376
1963	Wet	325	990	808	735	496	435	428	597	372	310	319	319
1964	Dry	558	676	785	319	338	363	374	510	396	258	369	162
1965	Wet	462	1,650	1,864	1,350	467	528	528	821	523	499	509	587
1966	Below Normal	468	1,169	1,074	329	331	345	342	606	362	351	337	484
1967	Wet	501	1,626	1,500	1,910	2,269	1,999	2,028	1,019	552	580	548	548
1968	Below Normal	444	1,447	1,290	348	334	370	369	673	417	438	416	2,701
1969	Wet	2,006	1,937	1,974	3,968	2,089	1,843	1,745	1,332	637	926	4,827	2,908
1970	Wet	1,283	1,801	1,509	1,181	462	474	553	803	414	425	448	492
1971	Wet	626	1,704	1,626	824	549	473	517	954	379	331	447	447
1972	Below Normal	598	1,157	1,023	329	342	362	359	549	396	402	325	482
1973	Above Normal	420	1,716	1,419	1,235	432	445	530	741	451	440	369	570
1974	Wet	1,287	1,895	1,606	1,958	557	500	790	1,344	587	694	608	1,383
1975	Wet	1,441	1,896	1,552	1,937	589	582	603	711	655	482	520	520
1976	Critical	534	991	900	325	316	331	320	502	405	393	290	602
1977	Critical	576	496	636	265	255	259	233	364	280	293	262	188
1978	Above Normal	245	956	862	597	544	442	471	679	517	459	245	291
1979	Below Normal	360	1,645	1,328	1,663	426	439	452	722	494	372	322	322
1980	Above Normal	1,060	1,952	1,920	2,016	561	546	656	1,063	676	596	583	512
1981	Dry	460	1,246	1,292	306	404	356	384	671	355	384	454	5,140
1982	Wet	3,466	2,882	1,586	1,703	1,432	1,967	3,096	2,228	2,550	3,187	4,117	5,160
1983	Wet	6,162	1,577	1,690	5,557	4,507	2,694	3,113	1,830	3,321	5,140	2,078	2,078
1984	Wet	1,097	1,865	1,800	1,065	499	568	712	926	521	405	453	555
1985	Dry	502	1,225	1,236	358	300	364	452	709	533	461	371	2,463
1986	Wet	5,074	1,880	1,672	1,619	503	366	497	861	601	702	525	404
1987	Dry	390	993	981	322	314	333	301	501	347	379	289	289
1988	Critical	589	601	559	305	270	260	295	406	343	362	198	165
1989	Dry	551	603	566	302	349	361	402	440	352	341	180	193
1990	Critical	591	516	550	287	285	321	314	530	540	320	142	156
1991	Critical	229	455	505	291	276	306	286	422	411	271	116	116
1992	Critical	504	404	212	222	252	267	249	313	213	223	337	160
1993	Above Normal	164	471	456	354	286	352	426	356	331	316	141	368
1994	Critical	571	428	452	214	254	277	292	330	276	289	529	202
1995	Wet	514	1,395	1,431	619	386	387	366	606	480	481	429	429
1996	Wet	2,721	1,621	1,678	1,595	399	442	442	706	755	3,595	8,177	6,243
1997	Wet	1,409	1,554	1,571	892	449	418	418	757	405	394	440	2,623
1998	Wet	2,051	1,565	1,518	1,553	2,706	2,230	2,231	1,717	923	987	1,520	3,434
1999	Wet	1,253	1,542	1,547	1,451	366	418	444	686	420	411	465	465
2000	Above Normal	692	1,549	1,507	825	371	374	390	632	403	382	415	418
2001	Dry	350	995	952	308	305	285	304	475	299	365	333	436
2002	Dry	395	712	678	308	301	349	335	421	294	323	185	476
2003	Above Normal	496	792	582	309	335	321	299					
	Average	835	1,200	1,148	969	606	581	624	711	519	587	669	839
	Wet	1,581	1,710	1,624	1,960	1,102	1,002	1,116	1,001	758	962	1,315	1,444
	Above Normal	541	1,335	1,241	774	417	417	443	664	467	454	394	415
	Below Normal	490	1,151	1,118	675	433	413	420	642	429	516	503	714
	Dry	436	852	812	345	349	373	381	546	389	361	326	746
	Critical	510	537	563	294	312	341	340	461	349	328	253	235
	Dry and Critical	465	726	712	325	334	360	364	512	373	348	297	542

Table 143: Simulated Stanislaus River Inflow to San Joaquin River (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								310	269	320	251	296
1922	Above Normal	457	1,258	1,068	387	376	422	426	683	520	569	406	283
1923	Below Normal	380	1,512	1,432	867	480	425	463	832	519	463	367	367
1924	Critical	141	549	526	308	365	411	415	553	445	401	225	188
1925	Dry	302	1,194	930	387	376	422	426	618	454	396	280	243
1926	Dry	147	600	637	344	376	422	426	556	514	347	248	179
1927	Wet	419	1,563	1,260	413	376	422	434	690	496	452	375	375
1928	Above Normal	577	1,334	1,188	353	376	422	427	674	398	376	371	299
1929	Critical	177	638	716	364	365	411	415	540	321	257	239	276
1930	Dry	316	600	640	383	366	411	415	538	303	255	201	439
1931	Critical	154	472	462	311	365	411	415	526	334	469	239	239
1932	Dry	177	446	666	334	376	422	426	548	321	255	234	279
1933	Critical	164	402	652	345	376	422	426	540	332	379	232	236
1934	Critical	114	465	547	365	365	411	415	517	337	324	244	111
1935	Below Normal	268	812	730	384	553	422	426	553	311	277	255	255
1936	Below Normal	330	957	738	709	474	422	429	594	383	380	294	252
1937	Below Normal	577	1,367	1,173	630	474	422	426	680	493	516	390	494
1938	Wet	2,007	1,811	2,029	5,122	2,000	1,855	1,993	1,313	647	571	462	403
1939	Dry	320	1,020	1,001	321	376	422	439	680	348	307	427	427
1940	Above Normal	592	1,779	1,524	961	501	446	476	794	616	599	562	537
1941	Wet	802	1,875	2,310	1,812	632	469	469	825	851	647	1,271	1,956
1942	Wet	682	1,637	1,644	1,695	784	1,721	1,905	1,052	688	825	2,482	2,353
1943	Wet	3,395	1,500	1,648	1,828	486	493	529	872	672	685	586	586
1944	Dry	559	1,399	1,101	494	455	444	431	700	469	477	456	463
1945	Below Normal	493	1,421	1,750	981	554	503	508	781	514	386	655	594
1946	Below Normal	489	1,487	1,665	1,037	443	479	494	761	541	544	519	488
1947	Dry	273	988	995	385	347	377	386	579	416	366	376	376
1948	Below Normal	335	744	849	559	504	423	395	571	422	411	311	373
1949	Dry	263	485	530	488	377	393	372	503	420	430	273	210
1950	Below Normal	429	889	993	773	390	389	401	554	472	2,537	2,242	2,322
1951	Above Normal	904	1,533	1,730	954	403	408	403	664	497	438	403	403
1952	Wet	898	1,500	1,564	4,291	2,614	1,977	1,847	856	625	614	1,046	1,153
1953	Wet	492	1,414	1,879	1,011	607	442	471	775	494	485	460	412
1954	Above Normal	398	1,187	1,247	407	369	377	358	612	461	493	556	333
1955	Dry	335	719	650	345	330	340	351	512	399	369	760	760
1956	Wet	597	1,753	1,592	1,921	613	484	1,483	894	585	572	509	560
1957	Above Normal	457	1,556	1,495	824	447	441	467	765	505	488	437	558
1958	Wet	515	2,123	1,500	3,022	1,806	1,869	1,839	867	651	694	602	964
1959	Below Normal	565	1,260	1,193	335	346	384	425	638	428	407	408	408
1960	Dry	258	703	759	351	320	345	333	468	363	365	259	536
1961	Dry	245	575	557	310	281	302	303	426	375	380	212	248
1962	Below Normal	305	577	869	278	411	395	394	530	370	330	270	377
1963	Wet	336	873	869	735	496	435	428	605	407	345	330	330
1964	Dry	296	682	790	329	338	363	374	511	396	258	369	163
1965	Wet	469	1,659	1,873	1,302	468	530	529	824	529	506	516	594
1966	Below Normal	475	1,246	1,158	337	331	345	342	606	369	358	344	491
1967	Wet	501	1,626	1,500	1,910	2,563	1,999	2,028	1,019	552	580	548	548
1968	Below Normal	444	1,447	1,290	348	334	370	369	673	417	438	416	2,701
1969	Wet	2,006	1,937	1,974	3,968	2,089	1,843	1,745	1,332	637	926	4,827	2,908
1970	Wet	1,283	1,733	1,509	1,138	462	474	553	803	414	425	448	492
1971	Wet	627	1,708	1,631	778	550	474	518	956	380	331	448	448
1972	Below Normal	463	1,079	1,023	334	342	362	359	553	398	404	331	488
1973	Above Normal	423	1,731	1,435	1,627	434	448	533	746	412	401	371	573
1974	Wet	1,175	1,895	1,606	1,958	557	500	864	1,392	621	728	555	1,383
1975	Wet	1,441	1,896	1,552	1,937	589	582	603	711	686	512	520	520
1976	Critical	349	984	893	325	316	331	320	501	404	393	288	602
1977	Critical	576	498	634	265	255	259	233	364	281	294	263	189
1978	Above Normal	250	976	880	597	544	442	471	682	518	461	250	295
1979	Below Normal	361	1,650	1,333	1,663	427	440	453	723	536	414	323	323
1980	Above Normal	1,060	1,952	1,920	2,016	561	546	656	1,063	676	596	583	512
1981	Dry	460	1,246	1,292	311	404	356	384	671	355	384	454	5,135
1982	Wet	3,466	2,882	1,586	1,703	1,432	1,967	3,096	2,228	2,550	3,187	4,117	5,160
1983	Wet	6,162	1,577	1,690	5,557	4,507	2,694	3,113	1,830	3,321	5,140	2,078	2,078
1984	Wet	1,097	1,865	1,800	1,065	499	568	712	926	540	424	453	555
1985	Dry	502	1,225	1,236	358	302	364	452	709	546	474	371	2,464
1986	Wet	5,074	1,880	1,672	1,619	503	366	497	861	601	702	525	404
1987	Dry	390	1,000	936	342	318	333	301	501	360	393	289	289
1988	Critical	208	612	571	336	278	286	295	422	343	362	198	216
1989	Dry	138	505	592	334	349	361	402	440	353	342	180	410
1990	Critical	238	562	566	323	285	321	314	532	544	325	145	159
1991	Critical	233	282	526	332	276	306	286	425	418	277	120	120
1992	Critical	80	432	425	261	252	267	249	316	220	229	337	165
1993	Above Normal	169	384	371	354	286	352	426	360	338	323	145	264
1994	Critical	219	474	477	333	254	277	292	335	285	299	529	208
1995	Wet	523	1,443	1,485	715	395	395	375	623	488	490	438	438
1996	Wet	2,721	1,621	1,678	1,595	399	442	442	706	755	3,595	8,177	6,243
1997	Wet	1,409	1,542	1,571	892	449	418	418	757	455	444	440	2,649
1998	Wet	2,064	1,565	1,518	1,553	2,706	2,230	2,231	1,717	923	987	1,520	3,434
1999	Wet	1,253	1,542	1,547	1,407	366	418	444	686	451	442	465	465
2000	Above Normal	750	1,551	1,510	830	372	375	391	633	434	413	416	418
2001	Dry	348	937	931	316	311	285	304	473	307	373	331	335
2002	Dry	196	570	740	325	306	349	335	424	296	325	188	375
2003	Above Normal	218	751	743	325	335	321	299					
	Average	753	1,197	1,168	977	611	581	631	714	526	599	671	831
	Wet	1,593	1,708	1,634	1,960	1,113	1,003	1,137	1,005	770	973	1,315	1,439
	Above Normal	521	1,333	1,259	803	417	417	444	666	470	456	396	398
	Below Normal	423	1,175	1,157	660	433	413	420	646	441	562	509	709
	Dry	307	828	832	359	350	373	381	548	388	361	328	741
	Critical	221	531	583	322	312	343	340	464	355	334	255	226
	Dry and Critical	273	709	733	344	335	361	364	514	375	350	299	535

Table 144: Simulated San Joaquin River Flow Upstream of Vernalis (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1,921	2,019	2,774	2,527	5,546
1922	Above Normal	4,932	7,342	7,195	13,588	5,191	2,575	2,520	2,582	2,468	4,107	5,863	4,951
1923	Below Normal	3,274	6,792	5,632	3,198	2,290	2,459	2,766	2,928	2,409	2,134	1,904	1,904
1924	Critical	1,792	1,758	1,705	1,095	1,076	1,216	1,539	1,737	1,941	1,948	1,656	2,710
1925	Dry	2,431	5,315	5,380	2,222	1,613	1,543	1,914	2,129	2,096	2,001	1,824	2,193
1926	Dry	2,032	3,688	3,307	1,525	1,352	1,472	1,886	1,971	2,322	2,110	2,003	3,895
1927	Wet	3,203	5,430	5,141	2,348	1,934	1,852	2,208	2,718	2,709	2,426	2,451	2,451
1928	Above Normal	5,477	5,368	4,071	1,827	1,600	1,598	1,977	2,262	2,170	2,027	1,939	2,156
1929	Critical	1,999	2,576	2,413	1,411	1,255	1,363	1,802	1,833	1,933	1,727	1,642	2,141
1930	Dry	2,040	2,459	2,405	1,248	1,265	1,379	1,844	1,859	1,958	1,809	1,652	2,056
1931	Critical	1,648	1,358	1,488	1,125	1,155	1,201	1,557	1,655	1,724	2,787	2,135	2,135
1932	Dry	2,715	3,391	3,824	2,157	2,133	1,730	2,009	2,301	2,159	1,928	1,880	2,122
1933	Critical	2,081	2,539	2,560	1,539	1,337	1,433	1,732	1,957	1,856	1,929	1,809	2,169
1934	Critical	1,870	1,677	1,684	1,163	1,086	1,190	1,524	1,701	1,827	1,860	2,469	2,240
1935	Below Normal	2,788	5,916	5,246	2,559	2,066	1,744	2,083	2,407	2,185	2,030	2,137	2,137
1936	Below Normal	6,987	7,041	5,668	2,665	1,989	2,472	2,485	2,754	2,322	2,267	2,905	15,670
1937	Below Normal	10,800	9,341	9,951	3,122	2,417	2,466	2,499	2,581	2,597	6,729	6,011	23,626
1938	Wet	29,233	18,395	22,074	21,254	9,967	4,488	4,397	3,971	2,918	2,471	2,438	2,945
1939	Dry	3,186	4,009	3,474	1,510	1,401	1,533	2,025	2,222	2,052	1,897	3,317	3,317
1940	Above Normal	7,190	7,836	6,040	3,013	1,926	1,849	2,441	2,596	2,390	4,137	4,668	15,671
1941	Wet	11,762	10,012	9,851	6,891	6,423	2,941	2,647	3,005	2,958	4,023	8,550	9,547
1942	Wet	6,254	8,232	9,392	8,470	7,127	4,210	4,192	3,121	3,048	3,239	12,966	9,606
1943	Wet	20,041	8,857	6,388	5,289	2,761	2,638	2,505	2,842	2,776	2,534	2,405	2,405
1944	Dry	3,207	4,991	3,867	2,146	1,636	1,633	1,900	2,317	2,372	2,241	2,388	10,305
1945	Below Normal	8,226	6,241	5,739	3,013	3,056	2,783	2,583	3,130	2,595	7,335	5,838	5,915
1946	Below Normal	5,403	5,656	5,847	3,047	1,879	1,867	2,188	2,734	2,579	3,198	2,692	2,953
1947	Dry	1,996	2,593	2,510	1,554	1,271	1,433	1,811	2,092	2,087	1,935	1,705	1,705
1948	Below Normal	1,839	3,401	3,270	2,253	1,810	1,576	1,854	2,138	2,080	1,900	1,755	2,153
1949	Dry	2,460	2,620	2,629	1,890	1,404	1,498	1,789	2,013	2,095	1,991	2,061	2,293
1950	Below Normal	2,162	4,031	3,733	2,415	1,502	1,522	1,895	2,090	2,667	15,258	13,846	9,666
1951	Above Normal	6,050	5,547	5,002	2,459	1,596	1,566	1,851	2,188	2,112	2,552	6,056	6,056
1952	Wet	12,734	11,375	18,090	15,741	9,304	4,532	4,135	2,703	2,586	2,509	4,211	4,335
1953	Wet	2,299	5,086	5,199	2,329	1,957	1,651	1,940	2,280	2,103	1,990	1,895	2,287
1954	Above Normal	2,212	3,663	3,707	1,917	1,471	1,519	1,808	2,037	1,952	2,083	2,527	2,128
1955	Dry	1,993	2,640	2,617	1,532	1,324	1,419	1,753	1,839	1,873	8,190	19,738	19,738
1956	Wet	6,711	6,177	6,228	8,586	6,319	3,037	3,305	2,895	2,420	2,198	2,135	2,455
1957	Above Normal	2,299	5,111	5,044	2,300	1,616	1,647	1,980	2,433	2,127	2,132	2,268	3,711
1958	Wet	10,153	17,788	13,666	13,522	7,195	4,394	4,242	2,871	2,494	2,462	2,419	3,634
1959	Below Normal	2,920	4,033	3,492	1,482	1,318	1,442	1,979	2,038	1,890	1,781	1,678	1,678
1960	Dry	1,847	2,499	2,428	1,257	1,069	1,238	1,573	1,543	1,772	1,750	1,479	1,939
1961	Dry	1,729	1,507	1,598	1,137	924	1,047	1,416	1,442	1,672	1,727	1,312	5,148
1962	Below Normal	3,611	4,015	3,873	1,860	1,605	1,603	1,888	2,034	1,812	1,804	1,969	3,070
1963	Wet	2,458	5,362	4,766	2,650	1,983	1,791	2,138	2,358	2,277	2,002	2,175	2,175
1964	Dry	1,864	2,552	2,480	1,465	1,292	1,350	1,720	1,911	1,883	2,917	8,560	6,234
1965	Wet	5,239	7,313	5,367	3,013	1,995	3,258	2,931	2,662	3,348	4,703	4,269	4,627
1966	Below Normal	2,732	3,933	3,441	1,468	1,345	1,360	1,651	1,921	1,736	2,735	2,823	2,554
1967	Wet	4,978	15,224	14,573	17,124	16,363	4,855	4,606	3,187	2,316	2,276	2,353	2,353
1968	Below Normal	2,474	4,223	3,791	1,577	1,404	1,523	1,835	2,032	1,984	2,099	9,729	27,880
1969	Wet	21,067	20,853	25,844	26,119	9,922	4,304	4,090	4,136	2,936	3,521	17,137	8,593
1970	Wet	7,161	5,371	4,477	2,285	1,935	1,601	2,084	2,624	2,161	2,246	2,533	2,447
1971	Wet	2,841	5,215	4,923	2,174	1,711	1,554	1,896	2,675	1,999	2,093	1,700	1,700
1972	Below Normal	1,743	3,262	3,130	1,476	1,389	1,466	1,651	1,941	2,101	2,055	2,219	4,887
1973	Above Normal	4,446	5,048	4,577	3,398	2,014	2,531	2,571	3,045	2,812	4,610	6,694	4,534
1974	Wet	7,807	6,746	5,682	6,268	3,391	2,824	2,971	3,821	3,116	2,724	2,577	7,589
1975	Wet	7,844	6,443	4,976	7,308	3,700	2,896	2,633	3,704	2,994	2,204	2,170	2,170
1976	Critical	1,910	2,538	2,436	1,313	1,288	1,555	1,651	1,770	1,770	1,655	1,493	1,770
1977	Critical	1,296	1,592	1,767	817	730	785	1,039	1,175	1,410	1,567	3,000	7,732
1978	Above Normal	8,663	12,998	11,301	9,836	4,355	2,878	3,313	2,352	2,900	2,490	4,065	8,034
1979	Below Normal	8,885	6,173	8,549	3,283	1,796	2,473	2,357	2,906	2,525	2,307	13,056	13,056
1980	Above Normal	15,885	7,220	6,794	10,084	7,288	3,175	2,731	3,292	2,956	2,332	2,416	2,517
1981	Dry	2,795	4,265	3,902	1,563	1,525	1,452	1,779	2,293	2,039	2,215	3,285	17,189
1982	Wet	15,492	27,310	18,941	11,191	8,365	4,747	7,536	7,548	11,019	20,889	26,506	34,197
1983	Wet	48,429	22,510	25,351	28,560	24,381	9,214	7,982	5,143	16,393	24,107	15,350	15,350
1984	Wet	7,095	5,923	5,479	2,958	2,126	2,382	3,195	3,703	3,039	2,108	2,360	3,018
1985	Dry	2,649	3,418	3,391	1,597	1,580	1,749	2,103	2,374	2,378	2,254	1,933	17,380
1986	Wet	28,260	11,834	11,345	9,116	2,931	2,909	3,376	3,779	3,490	2,358	2,087	2,121
1987	Dry	2,579	2,431	2,357	1,290	1,172	1,339	1,697	1,850	1,857	1,768	1,650	1,650
1988	Critical	1,499	1,821	1,772	1,090	865	1,027	1,416	1,206	1,650	1,679	1,392	1,643
1989	Dry	1,823	1,735	1,538	964	953	1,157	1,815	1,594	1,704	1,627	1,351	1,683
1990	Critical	1,431	1,169	1,696	965	837	988	1,382	1,527	1,740	1,492	1,169	1,373
1991	Critical	2,352	1,478	1,532	988	847	951	1,124	1,345	1,533	1,344	1,099	1,099
1992	Critical	1,917	1,164	959	669	682	734	1,038	1,072	1,307	1,391	4,682	3,542
1993	Above Normal	3,004	2,539	2,552	6,925	4,323	2,335	2,605	2,439	2,202	1,746	1,373	2,160
1994	Critical	1,584	1,612	1,884	979	835	928	1,218	1,300	1,522	1,407	3,700	4,217
1995	Wet	19,489	13,243	23,129	14,239	19,515	4,754	2,934	2,940	2,712	2,322	2,763	2,763
1996	Wet	11,332	6,924	8,356	6,212	2,528	2,604	2,723	2,927	3,729	21,247	60,094	22,938
1997	Wet	9,068	5,288	5,331	2,588	1,892	2,020	2,484	2,759	2,118	2,158	4,263	24,280
1998	Wet	14,585	14,432	16,830	21,029	20,269	5,674	4,902	4,772	3,397	3,223	5,095	11,670
1999	Wet	6,675	6,161	5,402	3,276	1,889	2,044	2,345	2,575	2,258	1,857	2,335	2,335
2000	Above Normal	7,542	5,914	5,402	3,328	1,742	1,949	2,525	2,870	2,574	2,284	2,393	2,421
2001	Dry	3,623	3,344	3,138	1,495	1,287	1,453	1,849	1,893	1,930	2,127	2,455	2,048
2002	Dry	2,085	2,319	2,504	1,292	1,204	1,383	1,711	1,558	1,694	1,912	1,627	1,991
2003	Above Normal	1,942	3,114	3,153	1,402	1,327	1,492	1,738					
	Average	6,343	6,101	6,076	4,696	3,349	2,198	2,412	2,498	2,556	3,366	4,793	6,130
	Wet	12,393	10,673	11,031	9,636	6,842	3,430	3,477	3,374	3,589	4,842	7,509	7,307
	Above Normal	5,804	5,975	5,403	5,006	2,871	2,093	2,338	2,501	2,390	2,773	3,566	4,990
	Below Normal	4,560	5,290	5,097	2,387	1,848	1,911	2,122	2,403	2,249	3,831	4,897	8,368
	Dry	2,392	3,099	2,964	1,547	1,356	1,434	1,811	1,956	1,997	2,356	3,346	5,716
	Critical	1,781	1,774	1,825	1,096	999	1,114	1,418	1,523	1,684	1,732	2,187	2,731
	Dry and Critical	2,148	2,569	2,508	1,367	1,213	1,306	1,654	1,783	1,872	2,106	2,882	4,522

Table 145: Simulated San Joaquin River Flow Upstream of Vernalis (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1,993	2,237	2,774	2,527	5,689
1922	Above Normal	5,664	7,569	7,134	13,631	5,197	2,581	2,544	2,655	2,686	4,104	5,797	5,100
1923	Below Normal	3,344	7,922	5,654	3,241	2,295	2,464	2,790	2,928	2,438	2,163	1,904	1,904
1924	Critical	2,129	1,758	1,705	1,096	1,076	1,216	1,539	1,811	2,159	1,949	1,658	2,850
1925	Dry	3,187	5,918	5,410	2,266	1,620	1,549	1,938	2,219	2,365	2,052	1,847	2,262
1926	Dry	2,471	4,286	3,330	1,599	1,359	1,478	1,911	2,045	2,540	2,110	2,005	4,031
1927	Wet	3,946	6,188	5,305	2,414	1,941	1,859	2,240	2,790	2,957	2,456	2,463	2,463
1928	Above Normal	6,524	6,030	4,214	1,882	1,606	1,604	2,002	2,334	2,394	2,033	1,944	2,244
1929	Critical	2,439	2,636	2,451	1,482	1,262	1,370	1,827	1,906	2,151	1,727	1,643	2,192
1930	Dry	2,617	2,538	2,439	1,384	1,300	1,407	1,878	1,860	1,959	1,810	1,653	2,056
1931	Critical	1,957	1,365	1,494	1,124	1,155	1,201	1,556	1,731	1,945	2,792	2,139	2,139
1932	Dry	3,450	4,655	4,334	2,201	2,140	1,737	2,033	2,375	2,336	1,888	1,882	2,159
1933	Critical	2,564	3,015	2,589	1,594	1,343	1,439	1,756	2,031	2,092	1,947	1,811	2,212
1934	Critical	2,188	1,763	1,723	1,242	1,087	1,190	1,548	1,780	2,069	1,884	2,477	2,388
1935	Below Normal	3,524	6,789	5,272	2,603	2,072	1,750	2,108	2,482	2,424	2,050	2,141	2,141
1936	Below Normal	7,901	8,172	5,698	2,709	2,150	2,478	2,509	2,852	2,554	2,281	2,940	13,762
1937	Below Normal	11,081	9,326	8,618	3,171	2,423	2,472	2,523	2,654	2,825	6,739	5,883	22,174
1938	Wet	29,012	16,772	21,685	20,869	9,973	4,494	4,421	4,044	3,136	2,471	2,438	3,085
1939	Dry	3,918	4,059	3,549	1,570	1,407	1,540	2,049	2,294	2,270	1,897	3,317	3,317
1940	Above Normal	7,922	9,062	6,063	3,012	1,937	1,881	2,467	2,669	2,608	4,137	4,659	14,106
1941	Wet	12,497	11,192	11,407	8,577	6,430	2,947	2,671	3,078	3,176	4,017	7,917	9,676
1942	Wet	6,986	9,458	9,438	8,517	7,138	4,220	4,218	3,194	3,266	3,240	10,763	9,747
1943	Wet	19,080	9,373	6,299	5,332	2,684	2,644	2,529	2,915	2,987	2,534	2,405	2,405
1944	Dry	3,939	5,589	3,940	2,190	1,642	1,640	1,925	2,389	2,590	2,241	2,388	8,604
1945	Below Normal	8,955	6,841	5,779	3,025	3,062	2,790	2,607	3,203	2,832	7,585	5,838	6,055
1946	Below Normal	6,137	6,268	5,878	3,111	1,888	1,875	2,401	2,932	2,832	3,233	2,694	3,095
1947	Dry	2,519	3,742	3,139	1,598	1,277	1,440	1,835	2,168	2,247	1,876	1,710	1,710
1948	Below Normal	2,344	3,966	3,300	2,298	1,818	1,583	1,879	2,219	2,307	1,909	1,767	2,214
1949	Dry	3,194	3,099	2,654	1,937	1,415	1,508	1,815	2,087	2,313	1,992	2,063	2,425
1950	Below Normal	2,911	4,635	3,755	2,458	1,509	1,528	1,919	2,175	2,891	12,281	12,946	9,805
1951	Above Normal	6,782	6,304	5,028	2,459	1,603	1,573	1,876	2,260	2,354	2,577	6,295	6,295
1952	Wet	12,774	12,045	16,377	15,224	9,310	4,538	4,160	2,776	2,804	2,509	4,211	4,475
1953	Wet	2,865	5,685	5,222	2,373	1,964	1,658	1,964	2,353	2,333	2,001	1,895	2,327
1954	Above Normal	2,948	4,298	3,790	1,974	1,478	1,525	1,839	2,111	2,174	2,087	2,531	2,206
1955	Dry	2,561	3,152	2,636	1,587	1,333	1,425	1,777	1,915	2,094	6,652	19,430	19,430
1956	Wet	7,238	6,778	7,624	10,162	6,326	3,043	3,789	2,992	2,688	2,248	2,135	2,487
1957	Above Normal	2,894	5,709	5,066	2,344	1,623	1,653	2,004	2,506	2,345	2,132	2,268	3,851
1958	Wet	10,326	19,178	14,570	13,353	7,201	4,400	4,266	2,944	2,712	2,462	2,419	3,774
1959	Below Normal	3,652	4,630	3,563	1,524	1,322	1,447	2,003	2,110	2,108	1,781	1,678	1,678
1960	Dry	2,275	2,554	2,455	1,324	1,076	1,244	1,598	1,544	1,772	1,750	1,479	2,004
1961	Dry	2,116	1,509	1,600	1,138	925	1,048	1,416	1,515	1,890	1,727	1,312	5,289
1962	Below Normal	4,344	5,304	4,523	1,905	1,612	1,611	1,913	2,108	2,003	1,777	1,971	3,150
1963	Wet	3,201	5,965	4,812	2,692	1,987	1,796	2,161	2,439	2,530	2,038	2,186	2,186
1964	Dry	2,334	2,603	2,507	1,519	1,299	1,357	1,745	1,984	2,101	2,917	7,955	6,375
1965	Wet	5,977	8,548	5,400	3,012	2,013	3,269	2,958	2,738	3,573	4,710	4,276	4,774
1966	Below Normal	3,470	4,610	3,598	1,520	1,351	1,367	1,676	1,993	1,961	2,742	2,829	2,701
1967	Wet	5,419	15,587	14,468	15,489	16,664	4,861	4,630	3,259	2,534	2,276	2,353	2,353
1968	Below Normal	3,206	4,272	3,865	1,620	1,410	1,529	1,860	2,104	2,202	2,099	8,265	26,137
1969	Wet	20,311	20,925	26,377	24,097	9,917	4,310	4,114	4,208	3,154	3,521	16,774	8,746
1970	Wet	7,918	5,939	4,548	2,285	1,940	1,606	2,108	2,696	2,379	2,246	2,533	2,587
1971	Wet	3,574	5,818	5,002	2,174	1,721	1,563	1,922	2,750	2,218	2,094	1,701	1,701
1972	Below Normal	2,340	3,783	3,152	1,524	1,395	1,472	1,675	2,018	2,321	2,058	2,225	5,030
1973	Above Normal	5,181	6,385	5,258	3,398	2,022	2,539	2,597	3,122	3,106	4,571	5,952	4,676
1974	Wet	8,426	7,631	5,879	6,391	3,398	2,830	3,070	3,942	3,368	2,758	2,524	7,605
1975	Wet	8,645	7,043	5,065	7,818	3,706	2,901	2,657	3,704	3,027	2,234	2,170	2,170
1976	Critical	2,458	2,538	2,436	1,313	1,288	1,555	1,651	1,769	1,769	1,655	1,491	1,770
1977	Critical	1,296	1,592	1,767	817	730	785	1,039	1,248	1,553	1,568	3,001	6,259
1978	Above Normal	8,040	11,614	11,056	11,167	4,360	2,884	3,337	2,428	3,120	2,492	4,070	8,158
1979	Below Normal	9,540	6,778	9,078	3,327	1,804	2,480	2,383	2,980	2,785	2,349	11,174	11,174
1980	Above Normal	15,261	6,998	7,450	11,909	7,295	3,181	2,755	3,365	3,174	2,332	2,416	2,657
1981	Dry	3,527	4,864	3,975	1,612	1,532	1,459	1,804	2,365	2,257	2,215	3,320	16,050
1982	Wet	15,874	27,144	17,471	11,841	8,371	4,753	7,560	7,620	10,055	20,283	26,161	32,107
1983	Wet	48,989	22,366	24,858	28,085	24,376	9,220	8,006	5,228	16,044	23,205	14,754	14,754
1984	Wet	7,827	6,650	5,503	3,001	2,132	2,388	3,219	4,018	3,276	2,127	2,360	3,158
1985	Dry	3,381	4,016	3,413	1,641	1,588	1,756	2,128	2,446	2,609	2,268	1,933	16,111
1986	Wet	27,515	11,600	10,932	9,664	2,937	2,915	3,400	3,852	3,708	2,358	2,087	2,261
1987	Dry	3,311	2,487	2,387	1,355	1,183	1,346	1,721	1,922	2,088	1,782	1,650	1,650
1988	Critical	1,850	1,881	1,805	1,164	879	1,059	1,441	1,295	1,868	1,679	1,392	1,834
1989	Dry	2,142	2,266	1,608	1,040	960	1,164	1,839	1,667	1,923	1,627	1,352	2,040
1990	Critical	1,809	1,297	1,756	1,045	843	994	1,406	1,602	1,963	1,497	1,172	1,516
1991	Critical	3,088	1,935	1,597	1,073	854	957	1,149	1,421	1,757	1,351	1,103	1,103
1992	Critical	2,225	1,274	1,216	752	690	741	1,063	1,149	1,532	1,398	4,683	3,686
1993	Above Normal	3,741	3,704	3,730	8,923	4,327	2,339	2,629	2,515	2,427	1,753	1,377	2,195
1994	Critical	1,963	1,694	1,950	1,141	834	933	1,242	1,377	1,749	1,416	3,689	3,114
1995	Wet	20,246	12,587	21,223	14,584	19,533	4,768	2,967	3,030	2,938	2,330	2,771	2,771
1996	Wet	11,581	8,006	7,639	6,255	2,534	2,610	2,747	3,000	3,882	19,080	59,612	22,515
1997	Wet	9,800	5,879	6,141	3,851	1,898	2,069	2,936	2,852	2,378	2,208	4,237	22,445
1998	Wet	14,954	14,117	15,509	18,705	20,278	5,680	4,927	4,844	3,615	3,223	5,095	11,810
1999	Wet	7,408	6,762	5,423	3,276	1,895	2,050	2,370	2,648	2,506	1,887	2,335	2,335
2000	Above Normal	8,416	6,519	5,778	3,482	1,748	1,956	2,641	2,967	2,823	2,315	2,393	2,562
2001	Dry	4,305	3,885	3,160	1,547	1,299	1,459	1,873	1,964	2,156	2,136	2,453	2,087
2002	Dry	2,617	2,823	2,530	1,355	1,218	1,391	1,737	1,634	1,913	1,913	1,631	2,031
2003	Above Normal	2,396	4,289	3,772	1,463	1,334	1,499	1,762					
	Average	6,838	6,559	6,120	4,786	3,360	2,205	2,451	2,575	2,746	3,275	4,667	5,953
	Wet	12,784	11,124	10,930	9,617	6,856	3,438	3,539	3,458	3,740	4,712	7,330	7,181
	Above Normal	6,314	6,540	5,695	5,470	2,877	2,101	2,371	2,577	2,621	2,775	3,519	4,978
	Below Normal	5,196	5,950	5,124	2,431	1,865	1,918	2,160	2,483	2,463	3,646	4,590	7,930
	Dry	2,992	3,558	3,059	1,603	1,365	1,441	1,835	2,022	2,190	2,270	3,299	5,535
	Critical	2,164	1,896	1,874	1,154	1,003	1,120	1,435	1,593	1,884	1,739	2,188	2,589
	Dry and Critical	2,661	2,893	2,585	1,423	1,220	1,313	1,675	1,850	2,068	2,057	2,855	4,356

Table 146: Simulated San Joaquin River Inflows to Delta (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1,907	2,018	2,774	2,527	5,540
1922	Above Normal	4,912	7,295	7,128	13,519	5,096	2,488	2,472	2,569	2,467	4,108	5,863	4,945
1923	Below Normal	3,254	6,744	5,564	3,129	2,194	2,373	2,720	2,913	2,408	2,135	1,905	1,905
1924	Critical	1,771	1,707	1,631	1,021	971	1,123	1,489	1,724	1,941	1,948	1,656	2,704
1925	Dry	2,415	5,275	5,324	2,165	1,533	1,471	1,875	2,114	2,095	2,001	1,824	2,186
1926	Dry	2,011	3,637	3,235	1,451	1,250	1,381	1,836	1,957	2,320	2,110	2,003	3,888
1927	Wet	3,182	5,382	5,074	2,278	1,838	1,766	2,162	2,704	2,708	2,426	2,452	2,452
1928	Above Normal	5,458	5,322	4,007	1,761	1,509	1,515	1,932	2,246	2,169	2,027	1,939	2,149
1929	Critical	1,978	2,524	2,340	1,336	1,150	1,269	1,752	1,818	1,931	1,727	1,642	2,134
1930	Dry	2,021	2,410	2,336	1,178	1,167	1,290	1,796	1,845	1,957	1,809	1,652	2,049
1931	Critical	1,627	1,308	1,418	1,054	1,054	1,111	1,508	1,639	1,722	2,787	2,135	2,135
1932	Dry	2,694	3,340	3,752	2,085	2,031	1,639	1,959	2,286	2,157	1,928	1,880	2,115
1933	Critical	2,062	2,491	2,491	1,468	1,238	1,344	1,683	1,941	1,854	1,929	1,809	2,162
1934	Critical	1,847	1,623	1,608	1,085	978	1,093	1,471	1,688	1,825	1,860	2,469	2,233
1935	Below Normal	2,770	5,872	5,186	2,498	1,981	1,667	2,042	2,393	2,183	2,030	2,137	2,137
1936	Below Normal	6,968	6,994	5,602	2,598	1,894	2,387	2,439	2,742	2,320	2,267	2,905	15,663
1937	Below Normal	10,782	9,299	9,892	3,060	2,331	2,389	2,458	2,569	2,595	6,729	6,012	23,619
1938	Wet	29,216	18,354	22,018	21,197	9,887	4,416	4,357	3,958	2,917	2,471	2,438	2,938
1939	Dry	3,167	3,961	3,407	1,441	1,304	1,447	1,977	2,208	2,051	1,898	3,318	3,318
1940	Above Normal	7,171	7,790	5,975	2,947	1,835	1,766	2,396	2,584	2,388	4,137	4,668	15,665
1941	Wet	11,745	9,969	9,792	6,833	6,341	2,865	2,606	2,993	2,958	4,023	8,551	9,542
1942	Wet	6,237	8,193	9,336	8,413	7,048	4,139	4,152	3,109	3,046	3,240	12,967	9,600
1943	Wet	20,024	8,815	6,329	5,229	2,678	2,563	2,464	2,827	2,775	2,534	2,405	2,405
1944	Dry	3,186	4,941	3,796	2,075	1,536	1,544	1,851	2,303	2,370	2,241	2,389	10,298
1945	Below Normal	8,207	6,194	5,675	2,947	2,963	2,700	2,538	3,117	2,593	7,336	5,838	5,908
1946	Below Normal	5,384	5,607	5,780	2,978	1,783	1,781	2,141	2,719	2,578	3,198	2,693	2,947
1947	Dry	1,975	2,543	2,438	1,482	1,168	1,341	1,760	2,080	2,088	1,935	1,706	1,706
1948	Below Normal	1,823	3,360	3,215	2,197	1,732	1,506	1,816	2,125	2,079	1,901	1,755	2,146
1949	Dry	2,441	2,574	2,563	1,825	1,312	1,416	1,743	1,999	2,093	1,992	2,062	2,286
1950	Below Normal	2,143	3,984	3,667	2,347	1,407	1,437	1,849	2,074	2,665	15,258	13,846	9,659
1951	Above Normal	6,029	5,497	4,933	2,388	1,497	1,477	1,803	2,176	2,110	2,553	6,057	6,057
1952	Wet	12,717	11,333	18,032	15,682	9,220	4,458	4,095	2,690	2,585	2,509	4,212	4,328
1953	Wet	2,280	5,040	5,133	2,261	1,865	1,567	1,893	2,267	2,102	1,990	1,895	2,280
1954	Above Normal	2,193	3,618	3,644	1,853	1,382	1,437	1,765	2,023	1,951	2,084	2,527	2,121
1955	Dry	1,974	2,593	2,551	1,464	1,230	1,333	1,707	1,824	1,872	8,190	19,738	19,738
1956	Wet	6,692	6,131	6,163	8,519	6,228	2,953	3,259	2,882	2,419	2,199	2,135	2,448
1957	Above Normal	2,280	5,064	4,979	2,234	1,525	1,564	1,935	2,423	2,127	2,132	2,268	3,706
1958	Wet	10,139	17,754	13,620	13,475	7,129	4,334	4,210	2,856	2,493	2,462	2,420	3,628
1959	Below Normal	2,899	3,981	3,418	1,408	1,214	1,348	1,929	2,022	1,889	1,782	1,678	1,678
1960	Dry	1,826	2,448	2,357	1,184	967	1,146	1,524	1,529	1,771	1,750	1,479	1,933
1961	Dry	1,709	1,459	1,530	1,068	827	961	1,370	1,426	1,670	1,727	1,312	5,142
1962	Below Normal	3,590	3,965	3,803	1,788	1,504	1,513	1,840	2,022	1,811	1,805	1,969	3,063
1963	Wet	2,440	5,321	4,708	2,591	1,900	1,716	2,096	2,343	2,275	2,003	2,175	2,175
1964	Dry	1,844	2,501	2,409	1,392	1,190	1,258	1,671	1,897	1,881	2,917	8,561	6,227
1965	Wet	5,220	7,267	5,301	2,947	1,902	3,173	2,884	2,647	3,346	4,704	4,269	4,620
1966	Below Normal	2,711	3,882	3,370	1,396	1,244	1,269	1,602	1,909	1,735	2,735	2,823	2,547
1967	Wet	4,961	15,183	14,516	17,067	16,283	4,782	4,566	3,174	2,315	2,276	2,353	2,353
1968	Below Normal	2,455	4,177	3,726	1,511	1,313	1,440	1,790	2,018	1,983	2,099	9,730	27,874
1969	Wet	21,046	20,807	25,778	26,052	9,829	4,218	4,043	4,123	2,935	3,521	17,137	8,586
1970	Wet	7,141	5,323	4,409	2,216	1,839	1,515	2,038	2,611	2,159	2,246	2,534	2,441
1971	Wet	2,822	5,169	4,856	2,108	1,618	1,469	1,849	2,660	1,997	2,094	1,700	1,700
1972	Below Normal	1,722	3,211	3,057	1,403	1,286	1,373	1,601	1,927	2,099	2,056	2,220	4,880
1973	Above Normal	4,427	5,004	4,514	3,334	1,924	2,450	2,526	3,031	2,810	4,610	6,694	4,527
1974	Wet	7,788	6,702	5,619	6,205	3,305	2,745	2,929	3,807	3,114	2,724	2,578	7,582
1975	Wet	7,825	6,398	4,913	7,244	3,611	2,814	2,588	3,689	2,992	2,204	2,171	2,171
1976	Critical	1,889	2,486	2,364	1,240	1,186	1,464	1,601	1,756	1,769	1,655	1,493	1,763
1977	Critical	1,277	1,542	1,697	745	630	697	991	1,164	1,410	1,567	3,000	7,726
1978	Above Normal	8,647	12,961	11,251	9,786	4,285	2,814	3,278	2,337	2,899	2,490	4,066	8,028
1979	Below Normal	8,865	6,123	8,480	3,212	1,697	2,384	2,309	2,893	2,523	2,307	13,056	13,056
1980	Above Normal	15,865	7,173	6,727	10,017	7,194	3,089	2,685	3,281	2,955	2,333	2,416	2,511
1981	Dry	2,778	4,222	3,841	1,502	1,439	1,374	1,736	2,283	2,039	2,215	3,286	17,184
1982	Wet	15,477	27,273	18,889	11,140	8,293	4,682	7,500	7,536	11,019	20,889	26,506	34,193
1983	Wet	48,413	22,471	25,298	28,508	24,308	9,146	7,945	5,131	16,392	24,108	15,350	15,350
1984	Wet	7,078	5,880	5,419	2,896	2,040	2,305	3,153	3,688	3,038	2,108	2,360	3,011
1985	Dry	2,629	3,368	3,321	1,527	1,482	1,661	2,055	2,360	2,377	2,255	1,934	17,374
1986	Wet	28,241	11,788	11,280	9,050	2,838	2,826	3,331	3,764	3,489	2,358	2,087	2,114
1987	Dry	2,558	2,380	2,286	1,219	1,072	1,250	1,648	1,836	1,855	1,768	1,650	1,650
1988	Critical	1,480	1,771	1,701	1,019	765	937	1,368	1,192	1,648	1,679	1,392	1,636
1989	Dry	1,802	1,686	1,469	895	854	1,069	1,767	1,579	1,703	1,627	1,352	1,676
1990	Critical	1,408	1,115	1,620	886	727	891	1,328	1,511	1,739	1,492	1,169	1,366
1991	Critical	2,329	1,425	1,457	911	739	855	1,071	1,329	1,531	1,345	1,099	1,099
1992	Critical	1,895	1,111	885	593	575	639	985	1,060	1,305	1,392	4,683	3,535
1993	Above Normal	2,987	2,496	2,493	6,864	4,238	2,258	2,564	2,424	2,201	1,746	1,373	2,153
1994	Critical	1,563	1,563	1,815	909	736	839	1,170	1,285	1,521	1,407	3,700	4,211
1995	Wet	19,468	13,194	23,061	14,170	19,419	4,666	2,887	2,925	2,710	2,322	2,763	2,763
1996	Wet	11,311	6,874	8,287	6,141	2,430	2,515	2,675	2,912	3,728	21,248	60,094	22,931
1997	Wet	9,048	5,239	5,262	2,517	1,793	1,930	2,435	2,743	2,116	2,159	4,264	24,273
1998	Wet	14,565	14,384	16,762	20,960	20,173	5,587	4,855	4,757	3,396	3,223	5,095	11,663
1999	Wet	6,655	6,112	5,332	3,205	1,790	1,954	2,297	2,560	2,256	1,857	2,336	2,336
2000	Above Normal	7,522	5,864	5,333	3,257	1,643	1,860	2,477	2,855	2,572	2,284	2,393	2,415
2001	Dry	3,602	3,291	3,063	1,420	1,182	1,358	1,798	1,877	1,928	2,128	2,455	2,041
2002	Dry	2,064	2,267	2,430	1,218	1,099	1,288	1,661	1,544	1,692	1,912	1,627	1,985
2003	Above Normal	1,923	3,067	3,086	1,336	1,234	1,407	1,691					
	Average	6,324	6,054	6,010	4,628	3,255	2,113	2,366	2,484	2,555	3,366	4,794	6,125
	Wet	12,374	10,629	10,969	9,573	6,754	3,350	3,433	3,360	3,588	4,842	7,509	7,303
	Above Normal	5,784	5,929	5,339	4,941	2,780	2,010	2,294	2,488	2,389	2,773	3,566	4,985
	Below Normal	4,541	5,242	5,031	2,319	1,753	1,826	2,077	2,389	2,247	3,831	4,898	8,363
	Dry	2,372	3,050	2,895	1,477	1,258	1,346	1,763	1,941	1,996	2,356	3,346	5,711
	Critical	1,760	1,722	1,752	1,022	896	1,022	1,368	1,509	1,683	1,732	2,187	2,725
	Dry and Critical	2,127	2,519	2,438	1,295	1,113	1,216	1,605	1,768	1,871	2,106	2,882	4,517

Table 147: Simulated San Joaquin River Inflows to Delta (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1,980	2,236	2,774	2,527	5,683
1922	Above Normal	5,644	7,521	7,067	13,563	5,102	2,494	2,497	2,641	2,685	4,104	5,798	5,093
1923	Below Normal	3,324	7,874	5,586	3,172	2,199	2,378	2,744	2,913	2,437	2,163	1,904	1,904
1924	Critical	2,108	1,707	1,631	1,021	971	1,123	1,489	1,798	2,159	1,949	1,658	2,844
1925	Dry	3,171	5,876	5,354	2,209	1,540	1,478	1,900	2,203	2,363	2,052	1,847	2,255
1926	Dry	2,450	4,233	3,258	1,525	1,257	1,387	1,861	2,031	2,539	2,111	2,005	4,024
1927	Wet	3,925	6,140	5,238	2,345	1,845	1,772	2,194	2,777	2,956	2,456	2,463	2,463
1928	Above Normal	6,505	5,981	4,149	1,816	1,515	1,522	1,957	2,319	2,392	2,033	1,945	2,237
1929	Critical	2,417	2,584	2,378	1,407	1,156	1,276	1,776	1,891	2,150	1,727	1,643	2,185
1930	Dry	2,597	2,489	2,369	1,314	1,202	1,318	1,830	1,846	1,957	1,810	1,653	2,049
1931	Critical	1,936	1,315	1,424	1,053	1,054	1,111	1,508	1,715	1,944	2,793	2,139	2,139
1932	Dry	3,429	4,603	4,262	2,128	2,037	1,645	1,984	2,360	2,335	1,888	1,882	2,152
1933	Critical	2,544	2,967	2,519	1,523	1,245	1,350	1,708	2,015	2,090	1,947	1,811	2,205
1934	Critical	2,165	1,710	1,648	1,164	978	1,093	1,495	1,768	2,067	1,884	2,477	2,381
1935	Below Normal	3,506	6,746	5,212	2,541	1,988	1,673	2,067	2,468	2,422	2,050	2,141	2,141
1936	Below Normal	7,881	8,125	5,632	2,642	2,056	2,393	2,464	2,840	2,552	2,281	2,940	13,755
1937	Below Normal	11,064	9,284	8,558	3,110	2,337	2,395	2,482	2,641	2,824	6,740	5,883	22,167
1938	Wet	28,994	16,732	21,629	20,811	9,893	4,422	4,381	4,030	3,135	2,471	2,438	3,078
1939	Dry	3,899	4,010	3,482	1,501	1,310	1,453	2,002	2,280	2,269	1,898	3,318	3,318
1940	Above Normal	7,903	9,015	5,999	2,947	1,847	1,798	2,423	2,657	2,607	4,137	4,659	14,099
1941	Wet	12,479	11,149	11,348	8,519	6,348	2,872	2,630	3,066	3,176	4,018	7,917	9,671
1942	Wet	6,969	9,419	9,382	8,461	7,060	4,150	4,179	3,183	3,265	3,240	10,763	9,740
1943	Wet	19,063	9,330	6,240	5,273	2,602	2,569	2,489	2,900	2,985	2,534	2,405	2,405
1944	Dry	3,918	5,537	3,869	2,119	1,542	1,550	1,876	2,375	2,588	2,241	2,389	8,597
1945	Below Normal	8,936	6,795	5,714	2,959	2,970	2,707	2,562	3,189	2,830	7,585	5,838	6,048
1946	Below Normal	6,118	6,219	5,812	3,042	1,793	1,790	2,354	2,917	2,831	3,233	2,694	3,089
1947	Dry	2,498	3,690	3,067	1,525	1,174	1,347	1,785	2,155	2,247	1,877	1,710	1,710
1948	Below Normal	2,328	3,924	3,246	2,242	1,741	1,514	1,841	2,206	2,305	1,909	1,767	2,208
1949	Dry	3,175	3,051	2,590	1,873	1,324	1,427	1,770	2,074	2,312	1,992	2,063	2,418
1950	Below Normal	2,891	4,586	3,689	2,391	1,413	1,443	1,873	2,159	2,890	12,281	12,946	9,799
1951	Above Normal	6,761	6,254	4,959	2,388	1,504	1,484	1,828	2,248	2,353	2,577	6,295	6,295
1952	Wet	12,757	12,003	16,319	15,166	9,226	4,464	4,119	2,762	2,803	2,509	4,212	4,468
1953	Wet	2,846	5,636	5,156	2,306	1,872	1,574	1,918	2,339	2,331	2,001	1,895	2,320
1954	Above Normal	2,929	4,251	3,727	1,909	1,388	1,444	1,796	2,097	2,172	2,087	2,531	2,199
1955	Dry	2,542	3,103	2,570	1,519	1,239	1,339	1,731	1,901	2,092	6,652	19,431	19,431
1956	Wet	7,219	6,732	7,558	10,095	6,234	2,959	3,743	2,978	2,687	2,248	2,135	2,481
1957	Above Normal	2,875	5,661	5,002	2,277	1,531	1,570	1,959	2,496	2,345	2,132	2,268	3,846
1958	Wet	10,312	19,143	14,524	13,306	7,135	4,340	4,234	2,929	2,711	2,462	2,420	3,768
1959	Below Normal	3,631	4,577	3,489	1,450	1,218	1,353	1,952	2,094	2,107	1,781	1,678	1,678
1960	Dry	2,254	2,504	2,384	1,251	973	1,152	1,548	1,529	1,771	1,750	1,479	1,997
1961	Dry	2,095	1,461	1,532	1,068	828	961	1,370	1,499	1,888	1,727	1,313	5,282
1962	Below Normal	4,323	5,253	4,453	1,833	1,512	1,520	1,865	2,096	2,002	1,778	1,971	3,143
1963	Wet	3,184	5,923	4,754	2,633	1,903	1,720	2,120	2,423	2,528	2,038	2,186	2,186
1964	Dry	2,313	2,553	2,437	1,447	1,198	1,265	1,696	1,970	2,100	2,917	7,955	6,368
1965	Wet	5,958	8,502	5,335	2,947	1,921	3,185	2,912	2,723	3,571	4,710	4,276	4,767
1966	Below Normal	3,450	4,556	3,527	1,447	1,251	1,276	1,626	1,981	1,960	2,742	2,830	2,694
1967	Wet	5,401	15,547	14,412	15,432	16,584	4,788	4,590	3,246	2,533	2,276	2,353	2,353
1968	Below Normal	3,187	4,226	3,801	1,555	1,319	1,446	1,815	2,090	2,201	2,099	8,265	26,131
1969	Wet	20,291	20,878	26,311	24,029	9,824	4,224	4,067	4,195	3,153	3,521	16,774	8,739
1970	Wet	7,897	5,889	4,480	2,216	1,844	1,520	2,061	2,683	2,377	2,246	2,534	2,580
1971	Wet	3,555	5,770	4,936	2,108	1,628	1,478	1,875	2,734	2,216	2,095	1,701	1,701
1972	Below Normal	2,319	3,730	3,079	1,451	1,292	1,379	1,625	2,004	2,319	2,058	2,226	5,023
1973	Above Normal	5,162	6,340	5,195	3,334	1,932	2,458	2,553	3,109	3,105	4,572	5,952	4,670
1974	Wet	8,408	7,587	5,817	6,327	3,311	2,752	3,027	3,928	3,367	2,758	2,525	7,598
1975	Wet	8,626	6,999	5,002	7,754	3,617	2,820	2,612	3,689	3,026	2,234	2,171	2,171
1976	Critical	2,437	2,486	2,364	1,240	1,186	1,464	1,601	1,755	1,768	1,655	1,491	1,763
1977	Critical	1,277	1,542	1,697	745	630	697	991	1,237	1,553	1,568	3,001	6,253
1978	Above Normal	8,025	11,577	11,006	11,116	4,290	2,819	3,302	2,413	3,119	2,492	4,070	8,152
1979	Below Normal	9,520	6,728	9,008	3,256	1,704	2,391	2,334	2,967	2,783	2,349	11,174	11,174
1980	Above Normal	15,240	6,950	7,383	11,842	7,200	3,096	2,709	3,353	3,173	2,333	2,416	2,651
1981	Dry	3,510	4,819	3,914	1,551	1,446	1,381	1,761	2,355	2,258	2,215	3,320	16,045
1982	Wet	15,859	27,106	17,419	11,790	8,299	4,688	7,525	7,609	10,055	20,283	26,162	32,102
1983	Wet	48,974	22,328	24,805	28,033	24,303	9,153	7,969	5,217	16,043	23,205	14,755	14,755
1984	Wet	7,810	6,607	5,443	2,940	2,046	2,311	3,178	4,003	3,275	2,127	2,360	3,151
1985	Dry	3,361	3,964	3,344	1,572	1,490	1,668	2,080	2,433	2,608	2,268	1,934	16,104
1986	Wet	27,496	11,554	10,868	9,598	2,844	2,832	3,356	3,837	3,707	2,358	2,087	2,254
1987	Dry	3,290	2,436	2,316	1,283	1,083	1,256	1,672	1,908	2,087	1,782	1,650	1,650
1988	Critical	1,830	1,831	1,734	1,093	779	969	1,393	1,281	1,866	1,679	1,392	1,827
1989	Dry	2,121	2,216	1,538	971	861	1,076	1,792	1,652	1,921	1,627	1,352	2,033
1990	Critical	1,786	1,243	1,679	966	733	897	1,353	1,586	1,961	1,497	1,172	1,509
1991	Critical	3,065	1,881	1,522	996	746	861	1,096	1,405	1,755	1,351	1,103	1,103
1992	Critical	2,203	1,222	1,141	676	583	646	1,010	1,136	1,530	1,398	4,683	3,679
1993	Above Normal	3,723	3,661	3,670	8,861	4,241	2,262	2,587	2,500	2,426	1,753	1,377	2,188
1994	Critical	1,943	1,645	1,881	1,070	734	844	1,194	1,362	1,748	1,416	3,689	3,108
1995	Wet	20,225	12,538	21,155	14,515	19,437	4,681	2,920	3,015	2,937	2,331	2,772	2,772
1996	Wet	11,560	7,956	7,570	6,185	2,436	2,521	2,700	2,985	3,880	19,081	59,612	22,508
1997	Wet	9,780	5,829	6,071	3,780	1,799	1,979	2,888	2,836	2,377	2,208	4,238	22,438
1998	Wet	14,933	14,068	15,441	18,636	20,182	5,593	4,879	4,829	3,614	3,223	5,095	11,803
1999	Wet	7,387	6,712	5,354	3,205	1,796	1,960	2,322	2,633	2,505	1,888	2,336	2,336
2000	Above Normal	8,395	6,469	5,709	3,411	1,650	1,867	2,593	2,952	2,821	2,315	2,394	2,555
2001	Dry	4,284	3,831	3,086	1,472	1,194	1,364	1,823	1,948	2,155	2,136	2,453	2,080
2002	Dry	2,597	2,769	2,457	1,281	1,114	1,297	1,686	1,620	1,912	1,913	1,631	2,024
2003	Above Normal	2,376	4,242	3,706	1,396	1,241	1,414	1,716					
	Average	6,819	6,511	6,054	4,719	3,266	2,121	2,405	2,561	2,745	3,276	4,667	5,948
	Wet	12,766	11,080	10,868	9,554	6,769	3,359	3,496	3,444	3,739	4,712	7,330	7,177
	Above Normal	6,295	6,494	5,631	5,405	2,787	2,019	2,327	2,564	2,619	2,776	3,519	4,972
	Below Normal	5,177	5,902	5,058	2,364	1,771	1,833	2,115	2,469	2,462	3,646	4,590	7,925
	Dry	2,972	3,508	2,990	1,534	1,267	1,354	1,787	2,008	2,189	2,270	3,299	5,530
	Critical	2,143	1,844	1,802	1,080	900	1,028	1,384	1,579	1,883	1,739	2,188	2,583
	Dry and Critical	2,641	2,843	2,515	1,352	1,120	1,223	1,626	1,836	2,066	2,057	2,855	4,351

Table 148: Simulated Delta Outflow (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								4,247	4,500	9,543	7,951	32,287
1922	Above Normal	23,725	22,906	51,947	37,493	8,000	4,000	4,102	4,676	5,173	25,322	26,300	13,444
1923	Below Normal	11,289	22,175	15,627	8,378	8,073	4,196	4,493	4,633	4,500	4,500	6,837	6,837
1924	Critical	10,084	6,275	4,000	6,195	4,000	4,668	3,000	3,036	4,428	5,962	6,000	66,147
1925	Dry	27,195	20,080	13,198	8,682	5,000	3,916	3,000	4,536	4,500	4,500	9,343	38,910
1926	Dry	9,653	20,835	10,845	5,112	5,000	4,533	3,238	4,000	12,729	9,017	29,209	123,160
1927	Wet	39,496	46,363	23,078	10,135	12,087	4,000	4,125	4,165	8,940	6,898	14,991	14,991
1928	Above Normal	94,285	23,665	16,475	7,283	9,964	4,000	3,948	4,049	4,995	5,632	5,377	9,715
1929	Critical	9,565	6,956	6,588	6,034	4,000	4,397	3,000	3,303	4,052	8,240	13,188	14,608
1930	Dry	28,067	11,243	8,953	5,655	5,667	3,653	3,000	4,376	4,500	4,500	6,109	7,779
1931	Critical	6,201	6,828	4,000	6,245	4,000	4,442	3,000	3,218	4,556	13,894	13,104	13,104
1932	Dry	11,400	11,198	11,417	10,199	5,000	3,500	3,000	4,688	4,500	4,500	8,774	7,223
1933	Critical	9,958	10,049	5,730	6,046	4,000	4,236	3,000	3,147	4,259	6,628	11,469	13,443
1934	Critical	11,400	9,997	5,624	6,897	4,000	3,976	3,000	3,491	4,634	5,083	23,707	11,400
1935	Below Normal	21,632	50,906	26,956	10,328	8,036	4,000	3,000	4,000	4,500	5,386	34,450	34,450
1936	Below Normal	27,787	22,183	17,296	8,068	8,560	4,000	3,816	4,000	4,500	4,854	8,462	47,272
1937	Below Normal	49,234	24,948	16,520	10,088	6,500	4,000	3,499	4,000	16,709	62,455	29,796	145,535
1938	Wet	167,798	73,847	68,055	43,729	8,000	4,000	9,721	8,400	4,809	5,171	5,849	9,184
1939	Dry	11,962	10,018	8,798	5,890	7,453	3,582	3,000	4,000	4,500	4,699	27,716	27,716
1940	Above Normal	106,109	65,931	17,062	7,501	12,686	4,000	3,722	4,000	4,636	36,955	93,365	118,361
1941	Wet	88,424	71,763	41,153	15,099	8,000	4,000	7,518	4,610	4,972	55,943	77,692	139,093
1942	Wet	21,866	48,356	34,977	21,024	8,000	4,000	8,798	4,434	9,047	22,917	83,513	54,972
1943	Wet	90,185	27,921	19,346	7,367	9,391	4,000	3,453	4,000	4,825	5,340	6,097	6,097
1944	Dry	15,033	10,756	8,571	7,502	5,920	4,287	3,299	4,000	6,303	8,893	6,000	51,179
1945	Below Normal	26,550	12,372	11,660	9,160	7,786	4,000	3,846	4,578	5,973	66,921	41,915	25,029
1946	Below Normal	14,125	14,065	12,781	8,736	8,292	4,000	3,182	4,000	4,500	8,203	6,000	12,520
1947	Dry	15,300	11,196	8,810	6,306	7,093	3,500	3,000	4,035	4,500	5,318	7,328	7,328
1948	Below Normal	10,715	23,314	20,238	10,427	6,500	5,697	4,051	4,000	4,500	5,731	5,768	21,623
1949	Dry	32,661	10,572	11,802	7,550	5,000	5,157	3,000	4,000	4,500	4,925	12,106	30,481
1950	Below Normal	14,639	17,282	13,192	8,922	6,500	4,000	4,148	4,023	45,833	104,642	72,127	70,942
1951	Above Normal	26,254	14,169	14,192	8,963	11,821	4,000	4,090	4,206	5,058	37,699	78,630	78,630
1952	Wet	64,159	66,489	69,849	40,062	10,581	5,253	13,907	5,349	4,977	37,047	93,768	22,226
1953	Wet	14,629	14,680	21,322	16,140	8,000	4,000	7,027	4,456	5,937	4,962	24,745	51,871
1954	Above Normal	43,195	35,513	22,244	6,746	11,962	4,000	3,601	4,000	5,419	16,040	12,066	11,400
1955	Dry	8,448	9,506	9,035	7,138	5,641	4,125	3,000	4,000	4,500	92,194	166,040	166,040
1956	Wet	36,916	17,206	39,495	16,475	8,000	4,000	9,218	5,460	4,500	4,869	7,418	26,658
1957	Above Normal	38,647	18,847	14,177	9,232	9,769	4,000	3,741	10,276	6,152	14,962	32,061	152,614
1958	Wet	118,406	98,862	48,257	31,968	8,000	5,274	12,465	6,590	4,760	4,817	27,062	43,893
1959	Below Normal	21,152	9,039	7,962	8,585	9,135	4,000	3,155	4,000	4,500	6,208	5,268	5,268
1960	Dry	14,108	11,400	9,557	5,981	7,287	3,500	3,217	4,622	4,500	7,420	6,072	22,752
1961	Dry	12,818	10,171	7,937	6,191	6,227	5,318	3,000	4,000	4,500	6,943	6,000	49,556
1962	Below Normal	17,596	11,686	11,400	7,523	10,550	4,000	3,000	28,325	6,265	19,349	9,581	61,767
1963	Wet	26,688	85,874	25,224	10,991	12,836	4,000	4,281	4,822	18,794	5,069	15,862	15,862
1964	Dry	8,028	9,852	10,243	6,498	6,304	4,770	3,000	4,000	5,959	74,654	110,693	29,040
1965	Wet	18,625	45,200	22,968	7,773	10,160	4,000	3,991	4,000	14,319	8,907	25,359	19,835
1966	Below Normal	19,382	10,936	11,005	7,638	9,822	4,000	3,655	4,258	5,569	28,326	42,595	47,606
1967	Wet	53,820	52,390	51,530	44,141	15,648	4,458	13,629	7,383	5,036	5,801	24,160	24,160
1968	Below Normal	28,470	13,856	8,967	8,077	9,494	4,000	3,000	4,000	5,051	15,478	112,764	135,803
1969	Wet	62,335	56,296	62,217	36,196	8,000	4,000	10,775	7,205	5,257	52,710	209,235	76,263
1970	Wet	35,395	15,462	11,361	9,305	11,585	4,000	3,000	4,000	10,901	53,047	42,164	25,830
1971	Wet	30,610	20,905	25,372	11,237	11,243	4,000	7,557	4,408	4,500	8,233	7,310	7,310
1972	Below Normal	27,205	10,075	8,406	8,455	8,209	4,520	3,000	4,000	12,365	17,956	80,330	85,975
1973	Above Normal	51,980	15,269	14,240	10,735	10,392	4,000	4,156	4,915	50,470	63,593	128,441	34,813
1974	Wet	106,874	62,753	19,734	14,782	9,112	4,035	11,175	4,956	4,831	8,046	8,715	61,342
1975	Wet	84,559	22,032	26,682	18,041	8,000	4,000	10,201	7,594	6,641	5,803	5,472	5,472
1976	Critical	11,676	7,267	4,000	5,009	5,097	3,298	3,000	4,493	3,500	5,877	4,500	6,965
1977	Critical	6,139	7,100	4,000	4,553	4,434	4,051	3,000	3,347	3,669	7,842	61,710	49,887
1978	Above Normal	65,298	40,469	20,188	14,185	8,000	4,000	4,110	4,236	4,792	5,466	16,638	33,550
1979	Below Normal	31,381	16,112	15,140	10,641	6,500	4,000	3,336	4,000	5,609	11,843	108,617	108,617
1980	Above Normal	58,802	16,588	14,788	13,494	8,000	4,000	4,164	4,000	4,500	5,774	19,220	19,674
1981	Dry	21,557	11,936	7,380	7,145	6,411	3,683	3,000	5,070	25,052	85,807	71,106	104,289
1982	Wet	83,812	139,798	41,757	20,088	8,000	4,106	18,483	17,684	41,630	82,614	103,109	176,832
1983	Wet	256,364	85,437	75,469	71,427	34,232	17,206	22,713	11,523	78,323	154,981	63,561	63,561
1984	Wet	33,057	16,825	11,518	9,448	11,225	4,000	3,473	5,111	23,591	13,332	6,352	9,655
1985	Dry	10,838	10,528	10,197	6,450	6,596	4,543	3,771	4,000	4,848	8,438	14,014	215,805
1986	Wet	144,627	21,700	14,215	10,395	8,551	4,000	4,266	4,000	4,500	4,967	7,061	12,997
1987	Dry	22,292	10,795	8,215	6,529	6,635	3,822	3,000	4,000	4,500	7,405	19,381	19,381
1988	Critical	7,895	8,433	6,185	6,897	4,000	4,382	3,000	3,295	4,947	3,693	8,584	7,856
1989	Dry	42,442	16,935	10,318	6,526	6,965	4,602	3,000	4,000	4,500	6,456	9,643	11,400
1990	Critical	7,763	9,869	4,479	4,000	5,352	4,019	3,000	3,387	4,065	4,051	4,759	6,632
1991	Critical	23,392	11,192	4,219	4,000	4,725	4,524	3,000	3,000	4,969	3,500	6,770	6,770
1992	Critical	14,022	10,367	5,775	6,732	4,000	3,352	3,000	4,213	3,500	6,423	61,822	53,619
1993	Above Normal	27,467	32,016	25,250	20,774	8,000	4,000	3,875	4,415	4,500	5,652	6,198	13,882
1994	Critical	11,018	9,691	7,085	6,140	4,376	6,663	3,000	3,000	5,440	5,556	111,442	41,860
1995	Wet	211,396	62,017	84,839	41,429	23,150	7,948	13,532	5,410	4,731	18,510	41,427	41,427
1996	Wet	71,870	39,227	44,627	13,369	8,000	4,151	7,955	4,000	8,864	101,258	280,005	73,496
1997	Wet	22,439	14,684	11,468	7,906	9,883	4,000	3,000	4,000	5,201	11,329	66,371	230,034
1998	Wet	85,026	57,794	54,186	74,785	28,171	12,129	19,768	9,548	20,436	27,660	36,173	95,078
1999	Wet	58,727	24,768	18,746	10,374	9,938	4,000	6,216	4,000	5,272	4,500	25,007	25,007
2000	Above Normal	61,288	17,468	15,169	8,017	11,173	4,000	3,875	4,795	4,500	7,481	9,272	17,106
2001	Dry	18,242	10,824	7,605	6,079	6,050	3,866	3,000	4,000	4,870	25,239	42,763	26,239
2002	Dry	16,569	13,344	10,527	6,789	6,573	5,081	3,000	4,000	8,902	27,730	51,694	26,081
2003	Above Normal	15,852	22,860	34,713	10,326	10,603	4,000	3,927					
	Average	41,682	26,811	20,246	13,225	8,597	4,469	5,223	5,037	8,791	21,660	39,507	47,982
	Wet	78,004	49,563	37,209	23,603	11,838	5,098	9,240	6,043	12,138	27,490	50,326	51,275
	Above Normal	51,075	27,142	21,704	12,896	10,031	4,000	3,943	4,818	8,725	19,510	36,293	44,623
	Below Normal	22,940	18,496	14,082	8,930	8,140	4,172	3,513	5,844	9,312	25,847	40,322	57,803
	Dry	18,145	12,288	9,634	6,790	6,157	4,191	3,085	4,185	6,565	21,591	33,555	53,575
	Critical	10,759	8,669	5,141	5,729	4,332	4,334	3,000	3,411	4,335	6,396	27,255	24,357
	Dry and Critical	15,191	10,840	7,836	6,366	5,427	4,248	3,051	3,875	5,673	15,513	31,035	41,888

Table 149: Simulated Delta Outflow (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								4,286	4,500	9,543	7,951	32,387
1922	Above Normal	24,440	22,856	51,901	37,537	8,000	4,000	4,102	4,715	5,173	25,280	26,483	13,540
1923	Below Normal	11,337	23,002	15,637	8,352	7,971	4,317	4,491	4,585	4,500	4,500	6,849	6,849
1924	Critical	10,085	6,273	4,000	6,201	4,000	4,678	3,000	3,053	4,802	5,616	6,000	66,288
1925	Dry	27,195	20,530	13,168	8,681	5,000	3,895	3,000	4,580	4,500	4,500	9,359	38,991
1926	Dry	9,644	21,572	10,722	5,112	5,214	4,398	3,265	4,000	12,937	9,009	28,849	124,073
1927	Wet	40,216	46,801	23,081	10,175	12,083	4,000	4,125	4,184	9,200	6,926	14,998	14,998
1928	Above Normal	95,149	24,367	16,457	7,270	9,975	4,000	3,893	4,111	4,918	5,742	5,380	9,693
1929	Critical	9,565	6,956	6,589	6,034	4,000	4,399	3,000	3,329	4,090	8,162	13,189	14,642
1930	Dry	28,639	11,259	8,957	5,649	5,626	3,666	3,000	4,358	4,500	4,500	6,107	7,779
1931	Critical	6,201	6,828	4,000	6,309	4,000	4,425	3,000	3,259	4,576	13,906	13,111	13,111
1932	Dry	11,400	11,198	11,836	10,194	5,000	3,500	3,000	4,702	4,500	4,500	9,147	7,203
1933	Critical	10,097	10,047	5,727	6,046	4,000	4,250	3,000	3,185	4,335	6,461	12,446	13,474
1934	Critical	11,400	9,996	5,619	6,897	4,000	3,967	3,000	3,531	4,941	4,380	23,716	11,400
1935	Below Normal	22,688	51,726	26,696	10,399	8,042	4,000	3,275	4,000	4,500	5,131	34,408	34,408
1936	Below Normal	28,620	22,427	17,287	8,058	8,797	4,000	3,815	4,000	4,500	4,730	7,550	45,603
1937	Below Normal	48,737	24,964	16,526	10,098	6,500	4,000	3,000	4,000	17,445	61,525	29,593	143,663
1938	Wet	167,497	72,227	67,669	43,343	8,000	4,000	9,878	8,470	4,809	5,171	5,808	9,263
1939	Dry	12,438	10,012	8,834	5,895	7,390	3,580	3,000	4,000	4,500	4,600	27,725	27,725
1940	Above Normal	106,860	66,039	17,042	7,504	12,694	4,000	4,093	4,165	4,500	35,339	92,652	116,715
1941	Wet	88,577	70,982	42,492	15,005	8,000	4,000	7,541	4,611	4,973	57,968	76,334	136,141
1942	Wet	22,439	48,613	35,014	21,073	8,000	4,000	8,803	4,445	9,288	22,914	81,307	53,575
1943	Wet	87,461	27,923	19,417	7,402	9,297	4,000	3,590	4,402	4,500	5,504	6,158	6,158
1944	Dry	15,506	11,260	8,627	7,493	5,866	4,008	3,000	4,000	6,511	8,887	6,000	49,844
1945	Below Normal	26,553	12,158	11,678	9,162	7,771	4,000	3,845	4,663	6,247	67,099	41,912	24,980
1946	Below Normal	14,829	14,260	12,800	8,733	8,258	4,041	3,205	4,000	4,500	8,238	6,000	12,507
1947	Dry	15,504	11,195	8,860	6,353	6,880	3,500	3,000	4,071	4,500	4,579	7,585	7,585
1948	Below Normal	11,055	23,818	20,217	11,096	6,500	5,653	3,898	4,000	4,500	6,466	4,867	8,838
1949	Dry	35,919	11,186	11,866	7,549	5,000	5,161	3,000	4,000	4,500	4,844	12,114	29,581
1950	Below Normal	14,944	17,653	13,624	8,913	6,500	4,000	4,169	4,110	47,366	101,978	71,073	70,707
1951	Above Normal	26,982	14,102	13,941	9,083	11,740	4,000	4,091	4,250	4,985	37,966	78,725	78,725
1952	Wet	63,877	66,637	68,292	39,545	10,587	5,260	13,931	5,422	4,977	37,049	93,979	22,207
1953	Wet	14,998	14,812	21,330	16,172	8,000	4,000	7,537	4,459	6,185	4,968	25,172	51,892
1954	Above Normal	43,405	36,130	22,116	6,770	11,955	4,000	3,614	4,000	5,717	16,040	12,072	11,400
1955	Dry	8,812	9,585	8,937	7,140	5,132	4,028	3,000	4,000	4,500	91,494	165,265	165,265
1956	Wet	37,444	17,164	40,535	18,051	8,000	4,000	9,940	6,481	4,500	4,830	7,178	26,902
1957	Above Normal	38,259	18,852	14,722	9,141	9,875	4,000	3,755	10,346	6,372	14,964	32,339	152,727
1958	Wet	117,828	99,235	49,052	31,800	8,000	5,281	12,496	6,663	4,760	4,933	27,060	44,011
1959	Below Normal	21,151	9,395	8,010	8,450	9,239	4,000	3,162	4,000	4,500	6,127	5,264	5,264
1960	Dry	14,464	11,400	9,571	5,990	7,330	3,500	3,211	4,608	4,500	7,420	6,071	23,081
1961	Dry	13,063	10,169	7,991	6,190	6,360	5,168	3,000	4,000	4,500	6,891	6,000	49,678
1962	Below Normal	18,072	12,245	11,400	7,462	10,483	4,000	3,000	27,946	6,462	19,324	9,584	62,474
1963	Wet	26,584	86,670	25,598	10,973	12,845	4,000	4,279	4,818	19,414	5,069	15,897	15,897
1964	Dry	8,343	9,618	10,364	6,485	6,331	4,748	3,000	4,000	6,182	74,688	110,216	28,698
1965	Wet	18,683	45,129	22,980	7,746	10,136	4,000	3,968	4,000	14,440	9,014	25,064	19,941
1966	Below Normal	18,837	11,487	11,003	7,627	9,832	4,000	3,672	4,294	5,797	28,104	42,847	47,872
1967	Wet	53,625	51,871	51,439	42,507	15,949	4,466	13,654	7,456	5,254	5,803	24,161	24,161
1968	Below Normal	29,203	13,839	9,025	8,038	9,551	4,000	3,000	4,000	5,081	15,477	111,394	134,079
1969	Wet	61,623	56,369	62,750	34,173	8,000	4,000	10,802	7,278	5,473	52,710	208,872	76,416
1970	Wet	36,116	15,388	11,417	9,374	11,598	4,000	3,000	4,000	11,119	53,986	42,153	25,767
1971	Wet	32,412	20,947	25,418	11,237	11,259	4,000	7,558	4,415	4,623	8,230	7,310	7,310
1972	Below Normal	26,783	10,458	8,404	8,394	8,191	4,560	3,000	4,000	12,099	17,779	80,491	86,090
1973	Above Normal	53,087	15,566	15,074	10,515	10,397	4,000	3,639	4,824	52,547	63,928	127,511	34,934
1974	Wet	106,530	63,396	19,820	14,863	9,055	4,040	11,273	5,138	4,831	8,082	8,514	61,624
1975	Wet	84,155	22,316	26,756	18,551	8,000	4,000	10,218	7,600	6,870	5,834	5,472	5,472
1976	Critical	12,032	7,255	4,000	4,949	5,232	3,208	3,000	4,548	3,500	5,726	4,500	6,969
1977	Critical	6,140	7,100	4,000	4,551	4,436	4,054	3,000	3,372	3,673	7,811	61,714	48,464
1978	Above Normal	64,831	39,103	20,375	15,047	8,000	4,000	4,109	4,234	4,791	5,637	16,637	33,198
1979	Below Normal	31,155	16,232	15,513	10,556	6,500	4,000	3,336	4,000	5,869	11,885	107,443	107,443
1980	Above Normal	58,181	16,477	15,153	14,931	8,000	4,000	4,164	4,000	4,500	5,888	19,886	19,789
1981	Dry	21,252	12,420	7,341	7,166	6,338	3,763	3,000	5,041	25,172	86,086	70,932	103,157
1982	Wet	83,022	139,630	40,390	20,739	8,000	4,112	18,514	17,757	40,666	82,008	102,765	172,865
1983	Wet	256,925	85,294	74,977	70,952	34,227	17,213	22,737	11,608	77,973	154,078	62,966	62,966
1984	Wet	33,773	16,742	11,531	9,500	11,152	4,000	3,535	5,425	24,020	13,647	6,348	9,785
1985	Dry	11,290	11,012	10,148	6,453	6,565	4,610	3,772	4,000	4,828	8,450	13,931	214,519
1986	Wet	143,982	21,495	13,837	10,978	8,217	4,000	4,271	4,000	4,500	4,909	6,995	13,314
1987	Dry	23,195	10,635	8,313	6,496	6,695	3,796	3,000	4,000	4,500	7,437	19,374	19,374
1988	Critical	7,895	8,467	6,177	6,897	4,000	4,351	3,000	3,359	4,878	3,755	8,403	7,862
1989	Dry	42,869	17,361	10,227	6,422	7,039	4,434	3,000	4,000	4,500	6,654	9,636	11,400
1990	Critical	8,009	9,864	4,513	4,000	5,363	4,003	3,000	3,405	4,167	3,832	5,107	6,597
1991	Critical	24,009	11,192	4,686	4,000	4,297	4,827	3,000	3,000	4,957	3,500	6,773	6,773
1992	Critical	14,248	10,365	5,772	6,729	4,000	3,351	3,000	4,263	3,500	6,404	62,186	53,721
1993	Above Normal	28,147	33,109	26,647	22,747	8,000	4,000	3,870	4,462	4,500	6,332	5,473	13,912
1994	Critical	11,019	9,727	7,104	5,739	4,817	5,315	3,000	3,237	5,961	5,383	109,533	43,116
1995	Wet	212,218	62,281	82,937	41,777	23,172	7,965	13,568	5,503	4,731	18,525	41,656	41,656
1996	Wet	71,669	39,996	44,086	13,383	8,000	4,114	7,983	4,000	9,041	99,103	279,528	73,003
1997	Wet	22,120	14,490	11,908	7,980	9,604	4,000	3,000	4,000	5,276	11,381	68,067	227,794
1998	Wet	85,397	57,481	53,027	72,463	28,182	12,137	19,794	9,623	20,655	27,661	36,175	94,974
1999	Wet	59,461	25,055	18,757	10,360	9,905	4,000	6,279	4,004	5,557	4,637	24,862	24,862
2000	Above Normal	62,014	17,396	15,168	8,023	11,140	4,000	3,875	4,783	4,500	6,964	9,260	17,184
2001	Dry	18,681	10,746	7,634	6,071	6,055	3,564	3,000	4,088	4,820	25,968	43,230	26,236
2002	Dry	16,565	13,738	10,532	6,791	6,535	5,254	3,000	4,000	9,118	27,401	51,569	26,111
2003	Above Normal	15,852	23,712	35,102	10,308	10,585	4,000	3,965					
	Average	41,894	26,942	20,270	13,230	8,589	4,446	5,239	5,080	8,908	21,583	39,369	47,569
	Wet	78,024	49,575	37,097	23,466	11,818	5,100	9,318	6,145	12,217	27,498	50,185	50,883
	Above Normal	51,434	27,309	21,975	13,240	10,030	4,000	3,931	4,848	8,917	19,469	36,197	44,517
	Below Normal	23,140	18,833	14,130	8,953	8,152	4,184	3,491	5,828	9,526	25,597	39,948	56,484
	Dry	18,599	12,494	9,663	6,785	6,131	4,143	3,069	4,192	6,615	21,550	33,506	53,350
	Critical	10,892	8,672	5,182	5,696	4,345	4,236	3,000	3,462	4,448	6,245	27,223	24,368
	Dry and Critical	15,516	10,966	7,871	6,349	5,417	4,180	3,042	3,900	5,748	15,428	30,993	41,757

Table 150: Simulated Exports Through Banks and Jones Pumping Plants (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								10,408	7,716	11,414	11,708	12,753
1922	Above Normal	10,540	7,323	6,975	9,330	11,260	11,216	11,152	10,830	10,933	11,637	11,748	7,474
1923	Below Normal	6,705	7,483	5,494	6,606	11,246	11,206	11,147	11,021	7,734	8,058	7,455	7,455
1924	Critical	1,108	1,495	2,534	5,401	2,751	1,500	4,621	5,342	3,986	9,968	9,044	9,996
1925	Dry	1,100	6,936	5,703	3,085	5,844	7,445	8,255	5,667	6,258	5,884	11,509	10,189
1926	Dry	5,896	6,424	3,067	3,581	5,524	7,480	9,594	5,954	10,900	11,269	7,721	7,286
1927	Wet	9,255	7,234	5,638	7,727	9,964	11,198	11,142	9,831	10,927	11,339	11,722	11,722
1928	Above Normal	10,601	7,284	3,953	6,429	5,090	11,204	10,779	10,118	9,597	8,797	9,695	8,110
1929	Critical	3,664	2,372	1,346	1,100	4,752	1,500	4,876	4,991	4,154	10,586	11,439	8,264
1930	Dry	7,550	2,917	2,943	2,438	7,707	5,856	7,791	5,453	5,158	4,468	9,710	5,505
1931	Critical	2,772	1,100	1,538	1,521	6,382	1,500	4,631	4,864	3,549	11,384	11,606	11,606
1932	Dry	4,774	1,608	3,508	1,665	3,512	7,619	9,514	5,460	5,294	5,923	8,466	6,068
1933	Critical	5,619	2,136	2,817	1,100	1,504	1,631	4,789	5,317	3,897	9,322	10,449	6,899
1934	Critical	1,625	1,100	1,100	1,590	2,386	1,823	4,556	4,754	7,333	6,242	11,718	6,319
1935	Below Normal	8,785	6,568	4,974	6,640	10,400	7,226	8,907	7,583	7,069	7,845	11,611	11,611
1936	Below Normal	9,772	6,662	5,262	5,965	10,302	7,955	10,780	8,441	6,907	7,878	9,173	9,718
1937	Below Normal	7,127	7,092	6,074	4,538	5,898	7,169	10,130	7,012	10,909	10,771	7,077	7,391
1938	Wet	8,544	8,713	10,143	9,680	11,280	11,251	11,170	11,067	10,944	11,342	10,371	7,656
1939	Dry	6,653	1,369	4,396	5,842	10,744	2,699	5,232	7,320	7,007	7,827	12,006	12,006
1940	Above Normal	11,838	7,755	5,800	6,775	7,758	11,195	10,463	9,311	9,251	11,640	12,461	12,742
1941	Wet	11,057	7,744	8,657	7,705	11,264	11,220	11,154	11,035	10,934	11,622	11,036	8,804
1942	Wet	9,426	7,849	8,040	9,525	11,254	11,212	11,150	11,027	10,931	11,478	11,728	10,353
1943	Wet	8,300	7,675	5,636	5,897	7,622	10,510	10,161	9,620	9,265	9,456	10,755	10,755
1944	Dry	8,642	4,302	4,330	6,375	10,992	8,102	9,887	7,702	10,913	11,306	9,392	9,695
1945	Below Normal	4,419	5,491	5,509	7,443	11,243	11,204	11,145	10,514	10,928	11,900	12,726	3,812
1946	Below Normal	8,013	5,095	5,253	6,471	11,204	10,193	9,537	9,132	9,088	11,480	8,676	10,209
1947	Dry	8,437	2,079	3,551	5,808	11,182	7,061	4,942	7,534	8,795	5,732	11,469	11,469
1948	Below Normal	5,993	6,347	5,373	7,794	9,273	11,198	11,117	9,513	7,135	9,640	8,086	1,500
1949	Dry	11,309	3,758	1,790	2,775	9,837	9,335	8,222	5,985	7,519	5,805	11,589	10,039
1950	Below Normal	7,681	6,506	3,948	6,167	7,766	7,685	11,053	9,577	10,910	11,349	7,306	7,771
1951	Above Normal	9,233	6,081	5,719	6,962	8,608	11,205	11,146	10,192	10,359	11,359	12,726	12,726
1952	Wet	10,814	8,610	9,854	9,680	11,280	11,251	11,170	11,067	10,944	11,349	11,545	7,070
1953	Wet	8,369	5,732	6,800	8,424	10,232	9,383	11,146	11,017	10,929	10,981	11,107	11,288
1954	Above Normal	9,877	6,815	4,659	6,024	7,254	10,083	10,182	9,066	10,927	11,265	11,747	7,296
1955	Dry	5,095	3,457	3,873	2,668	9,506	3,032	7,048	5,733	8,249	11,893	11,421	11,421
1956	Wet	8,235	6,653	7,014	9,680	11,255	10,068	11,150	11,028	8,927	10,828	8,112	11,741
1957	Above Normal	10,345	1,352	5,539	6,762	6,569	11,192	10,194	11,006	10,925	11,287	11,122	11,427
1958	Wet	8,874	8,319	9,373	9,680	11,280	11,251	11,170	11,067	10,944	10,740	10,722	11,534
1959	Below Normal	2,755	3,842	4,317	6,779	9,092	6,405	7,586	8,354	8,142	7,806	9,284	9,284
1960	Dry	8,069	1,100	2,683	5,479	10,504	7,705	9,509	5,070	9,424	10,552	9,052	9,033
1961	Dry	7,083	1,593	3,247	6,000	7,543	10,650	6,703	5,568	5,765	10,421	5,822	12,634
1962	Below Normal	9,780	4,970	5,128	6,438	10,409	10,610	8,429	10,985	10,918	11,219	11,558	11,938
1963	Wet	7,279	7,551	6,878	6,905	9,568	11,194	11,140	11,009	10,925	11,267	11,630	11,630
1964	Dry	4,921	1,824	2,853	5,388	11,176	9,935	6,185	7,087	10,912	11,420	12,720	11,263
1965	Wet	6,177	7,604	4,912	6,170	7,355	11,057	10,667	8,993	10,925	11,751	11,520	10,605
1966	Below Normal	9,529	4,542	3,719	6,400	10,071	11,197	10,088	10,605	10,926	11,401	11,846	11,392
1967	Wet	10,786	8,672	9,481	9,680	11,280	11,251	11,170	11,067	10,944	11,306	11,219	11,219
1968	Below Normal	9,166	1,689	4,420	6,964	9,728	10,604	7,774	8,805	9,183	11,285	12,725	11,857
1969	Wet	9,448	8,832	10,151	9,680	11,280	11,251	11,170	11,067	10,944	11,533	11,625	9,093
1970	Wet	9,114	5,869	4,276	6,549	9,226	10,428	8,950	8,938	10,928	11,312	11,750	10,001
1971	Wet	11,410	6,880	6,591	8,422	10,385	11,189	11,138	11,003	9,992	11,283	11,471	11,471
1972	Below Normal	10,261	3,850	4,175	6,741	7,946	10,507	8,439	7,126	10,924	11,267	10,880	11,573
1973	Above Normal	9,910	5,876	4,322	6,448	10,411	11,201	11,144	11,015	10,927	11,727	12,419	11,719
1974	Wet	9,213	7,760	6,068	7,512	11,264	11,220	11,154	11,035	10,934	11,392	10,754	11,843
1975	Wet	10,143	7,190	6,125	9,680	11,238	11,200	11,143	11,014	10,927	11,304	10,744	10,744
1976	Critical	7,111	3,062	2,467	5,078	8,598	6,203	4,732	4,747	6,499	3,939	5,396	2,703
1977	Critical	1,515	1,100	1,272	2,082	1,723	3,378	4,242	4,191	4,111	8,834	11,893	11,754
1978	Above Normal	9,654	8,474	8,584	7,678	11,280	11,251	11,170	11,066	10,081	8,624	12,266	12,161
1979	Below Normal	9,668	5,725	6,914	6,932	10,032	8,839	10,171	9,160	10,926	11,313	12,671	12,671
1980	Above Normal	8,349	7,302	5,147	6,940	9,261	8,406	11,157	9,389	8,170	10,341	11,714	10,859
1981	Dry	9,535	4,539	4,322	6,469	11,033	7,692	8,816	9,921	10,929	11,307	12,001	11,848
1982	Wet	9,961	8,525	9,936	9,680	11,280	11,251	11,170	11,067	10,944	11,905	11,752	9,894
1983	Wet	8,676	8,857	10,141	9,680	11,280	11,251	11,170	11,067	10,944	11,085	8,521	8,521
1984	Wet	9,289	4,534	3,758	6,265	10,303	11,185	10,314	11,000	10,922	11,279	11,463	8,155
1985	Dry	5,737	4,116	4,490	6,124	11,224	11,189	9,849	8,627	8,986	11,300	11,549	12,741
1986	Wet	10,410	8,097	8,390	5,986	7,313	10,009	10,865	10,144	9,196	7,927	9,050	8,486
1987	Dry	8,091	1,100	3,957	5,927	10,718	3,216	4,677	6,278	5,868	11,206	11,449	11,449
1988	Critical	1,549	3,067	1,686	4,463	8,886	1,500	4,370	4,236	5,114	6,741	6,091	2,182
1989	Dry	10,715	4,789	2,698	5,970	11,150	10,852	7,723	7,769	7,303	7,761	11,350	3,236
1990	Critical	4,827	1,100	2,376	4,344	4,818	1,500	4,350	4,523	3,883	3,265	2,798	2,844
1991	Critical	11,291	1,610	2,430	1,769	5,629	2,183	4,014	4,886	2,807	4,315	4,875	4,875
1992	Critical	7,608	1,983	1,100	2,814	2,936	4,753	5,000	3,855	4,009	7,839	12,459	12,089
1993	Above Normal	11,197	6,512	5,036	9,155	11,229	10,861	11,140	10,908	7,188	9,668	9,086	10,732
1994	Critical	4,389	2,696	3,205	5,856	11,245	11,076	6,886	6,372	4,085	10,551	12,139	12,327
1995	Wet	11,425	9,588	10,136	9,680	11,280	11,251	11,170	11,067	10,944	11,314	11,288	11,288
1996	Wet	8,193	7,859	6,953	7,016	7,840	9,830	11,153	8,218	10,933	11,901	11,729	11,788
1997	Wet	8,023	5,256	3,758	5,947	6,290	11,196	9,122	7,947	10,365	11,295	11,428	10,402
1998	Wet	8,588	8,866	9,753	9,680	11,280	11,251	11,170	11,067	10,944	11,479	11,680	9,913
1999	Wet	9,308	7,073	4,356	6,383	9,342	11,198	11,142	10,201	10,927	8,617	11,684	11,684
2000	Above Normal	10,337	6,731	5,282	6,943	7,665	11,207	10,618	10,487	10,267	11,287	11,704	11,729
2001	Dry	10,133	2,905	2,211	2,683	8,794	3,567	5,207	5,687	7,729	11,278	11,717	1,100
2002	Dry	4,410	4,169	3,925	6,000	11,036	9,998	6,588	5,610	10,913	11,237	11,442	1,332
2003	Above Normal	8,828	6,045	6,245	6,837	8,135	11,183	10,991					
	Average	7,950	5,278	5,098	6,250	8,927	8,765	9,055	8,546	8,863	9,987	10,563	9,460
	Wet	9,243	7,598	7,416	8,189	10,124	10,945	10,893	10,487	10,668	11,042	11,016	10,295
	Above Normal	10,059	6,462	5,605	7,190	8,710	10,850	10,845	10,316	9,695	10,754	11,533	10,811
	Below Normal	7,832	5,419	5,040	6,563	9,615	9,428	9,736	9,131	9,407	10,229	10,077	9,156
	Dry	7,119	3,277	3,530	4,682	9,335	7,413	7,541	6,579	8,218	9,255	10,577	8,795
	Critical	4,423	1,902	1,989	3,093	5,134	3,212	4,756	4,840	4,452	7,749	9,159	7,655
	Dry and Critical	6,041	2,727	2,914	4,046	7,655	5,733	6,427	5,883	6,712	8,653	10,010	8,339

Table 151: Simulated Exports Through Banks and Jones Pumping Plants (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								10,481	7,934	11,414	11,708	12,753
1922	Above Normal	10,558	7,599	6,961	9,330	11,260	11,216	11,152	10,903	10,933	11,636	11,748	7,525
1923	Below Normal	6,731	7,798	5,506	6,592	11,240	11,202	11,144	10,931	7,749	8,081	7,434	7,434
1924	Critical	1,108	1,494	2,542	5,402	2,953	1,500	4,621	5,399	3,834	10,317	9,047	9,996
1925	Dry	1,100	7,102	5,762	3,085	5,872	7,435	8,255	5,714	6,741	5,935	11,517	10,191
1926	Dry	5,607	6,287	3,090	3,660	6,340	7,480	9,644	6,027	10,901	11,269	8,079	7,313
1927	Wet	9,255	7,550	5,795	7,749	9,978	11,200	11,143	9,866	10,927	11,341	11,726	11,726
1928	Above Normal	10,829	7,238	3,940	6,423	5,052	11,205	10,678	10,175	9,881	8,695	9,699	8,222
1929	Critical	4,471	2,385	1,362	1,100	4,861	1,500	4,901	5,038	4,335	10,666	11,439	8,285
1930	Dry	7,555	2,981	2,973	2,370	7,722	5,872	7,783	5,471	5,159	4,465	9,713	5,504
1931	Critical	3,082	1,100	1,553	1,519	6,334	1,500	4,631	4,899	3,752	11,385	11,607	11,607
1932	Dry	5,103	2,459	3,601	2,070	2,862	7,625	9,515	5,521	5,473	5,884	8,096	6,127
1933	Critical	5,694	2,353	2,839	1,100	2,199	1,500	4,813	5,355	4,059	9,513	9,478	6,917
1934	Critical	1,821	1,100	1,100	1,579	2,380	1,817	4,580	4,793	7,270	6,972	11,721	6,319
1935	Below Normal	8,470	6,819	4,992	6,670	10,428	7,174	9,861	7,636	7,017	7,846	11,612	11,612
1936	Below Normal	9,858	7,549	5,347	5,963	10,918	7,596	10,782	8,541	6,971	7,880	10,166	9,732
1937	Below Normal	7,921	7,062	6,139	4,568	6,310	7,174	9,203	7,314	10,909	11,831	7,143	7,397
1938	Wet	8,629	8,713	10,143	9,680	11,280	11,251	11,170	11,067	10,944	11,342	10,414	7,720
1939	Dry	6,910	1,383	4,411	5,844	10,575	2,914	5,256	7,539	7,002	7,827	12,006	12,006
1940	Above Normal	11,837	8,874	5,810	6,777	7,763	11,215	11,151	10,489	9,643	11,642	12,460	12,746
1941	Wet	11,613	9,707	8,875	7,685	11,267	11,222	11,155	11,037	10,934	11,621	11,749	11,888
1942	Wet	9,587	8,819	8,052	9,525	11,280	11,234	11,161	11,049	10,938	11,480	11,730	11,890
1943	Wet	10,061	8,199	5,547	5,905	7,559	10,609	10,416	9,957	8,613	10,132	10,668	10,668
1944	Dry	8,896	4,395	4,347	6,369	10,988	7,367	9,102	7,555	10,913	11,306	9,392	10,106
1945	Below Normal	5,127	6,305	5,531	7,480	11,245	11,205	11,146	10,675	10,929	11,900	12,726	4,179
1946	Below Normal	8,388	5,511	5,266	6,470	11,210	10,900	9,580	9,332	9,341	11,481	8,665	10,209
1947	Dry	8,549	3,229	3,576	5,810	11,146	7,081	4,966	6,934	8,979	5,267	11,226	11,226
1948	Below Normal	6,175	6,493	5,410	8,153	9,914	11,095	10,833	9,917	8,767	9,660	8,991	7,251
1949	Dry	11,435	3,901	1,749	2,775	10,102	9,304	9,119	6,063	7,534	5,888	11,592	10,965
1950	Below Normal	8,126	6,731	4,038	6,162	6,800	7,931	11,054	9,704	10,911	11,445	7,389	8,136
1951	Above Normal	9,233	7,207	5,706	6,997	8,696	11,207	11,147	10,273	10,617	11,359	12,726	12,726
1952	Wet	11,289	9,131	9,699	9,680	11,280	11,251	11,170	11,067	10,944	11,349	11,545	7,219
1953	Wet	8,567	6,198	6,815	8,437	10,313	8,421	11,147	11,023	10,930	10,994	11,144	11,312
1954	Above Normal	10,403	6,830	4,654	6,037	7,232	9,985	10,205	9,219	10,927	11,266	11,749	8,106
1955	Dry	5,290	3,502	3,989	2,637	8,478	4,426	6,663	5,809	8,458	11,893	11,425	11,425
1956	Wet	8,235	7,295	7,370	9,680	11,256	8,924	11,150	11,028	8,804	10,996	8,452	11,752
1957	Above Normal	11,331	1,100	5,605	6,541	6,750	11,193	10,223	11,007	10,925	11,287	11,123	11,448
1958	Wet	9,626	9,336	9,482	9,680	11,280	11,251	11,170	11,067	10,944	10,956	10,722	11,558
1959	Below Normal	2,601	4,081	4,333	6,730	9,156	6,589	7,598	8,080	8,274	7,806	9,280	9,280
1960	Dry	8,261	1,100	2,696	5,486	10,582	7,696	9,498	5,070	9,423	10,552	9,051	9,359
1961	Dry	7,215	1,597	3,261	6,000	7,792	10,635	7,286	5,610	5,786	10,484	5,819	12,658
1962	Below Normal	10,036	5,699	5,144	6,542	10,497	11,178	8,569	10,992	10,920	11,220	11,560	11,481
1963	Wet	7,905	7,491	6,547	6,901	9,546	11,186	11,136	11,000	10,923	11,267	11,632	11,632
1964	Dry	5,084	1,933	2,879	5,390	11,182	9,965	6,393	7,170	10,913	11,421	12,576	11,747
1965	Wet	7,447	8,265	4,895	6,202	7,316	11,210	10,625	9,381	10,931	11,754	11,523	10,659
1966	Below Normal	10,695	4,668	3,732	6,430	10,070	11,199	10,121	10,671	10,927	11,402	11,848	11,417
1967	Wet	11,422	9,556	9,469	9,680	11,280	11,251	11,170	11,067	10,944	11,306	11,219	11,219
1968	Below Normal	9,166	1,689	4,437	6,943	9,694	10,688	7,790	8,865	9,371	11,285	12,725	11,857
1969	Wet	9,406	8,832	10,151	9,680	11,280	11,251	11,170	11,067	10,944	11,533	11,625	9,093
1970	Wet	9,149	5,395	4,293	6,512	9,355	10,530	8,743	9,006	10,927	11,311	11,750	9,018
1971	Wet	11,527	7,437	6,602	8,422	10,403	11,201	11,144	11,016	10,363	11,284	11,472	11,472
1972	Below Normal	11,070	3,989	4,199	6,745	7,821	10,562	8,439	7,202	10,924	11,267	10,886	11,597
1973	Above Normal	9,861	6,645	4,426	6,401	10,420	11,198	10,183	10,844	10,927	11,728	12,606	11,742
1974	Wet	10,178	8,002	6,181	7,554	11,265	11,221	11,154	11,036	10,934	11,392	10,902	11,844
1975	Wet	11,346	7,506	6,140	9,680	11,235	11,198	11,142	11,012	10,926	11,304	10,744	10,744
1976	Critical	7,303	3,075	2,468	5,045	8,618	6,268	4,744	4,735	6,496	3,856	5,402	2,688
1977	Critical	1,514	1,100	1,272	2,085	1,723	3,363	4,242	4,240	4,250	8,868	11,893	11,706
1978	Above Normal	9,499	8,474	8,153	8,147	11,280	11,247	11,168	11,063	10,310	9,378	12,268	11,743
1979	Below Normal	10,608	6,126	7,070	6,914	9,991	8,484	10,171	9,170	10,926	11,314	12,670	12,670
1980	Above Normal	8,346	7,190	5,438	7,330	8,878	7,755	11,157	9,461	8,387	10,634	11,714	10,907
1981	Dry	11,153	4,652	4,329	6,480	10,869	7,721	8,816	9,992	10,930	11,307	11,915	11,847
1982	Wet	11,131	8,525	9,832	9,680	11,280	11,251	11,170	11,067	10,944	11,905	11,752	11,770
1983	Wet	8,676	8,857	10,141	9,680	11,280	11,251	11,170	11,067	10,944	11,085	8,521	8,521
1984	Wet	9,304	4,672	3,771	6,273	10,373	11,185	10,430	11,000	10,922	11,279	11,455	8,221
1985	Dry	5,980	4,229	4,493	6,126	11,229	11,193	9,852	8,700	9,203	11,301	11,549	12,741
1986	Wet	10,547	8,066	8,355	5,951	7,308	10,025	10,873	10,133	9,356	7,983	9,116	8,307
1987	Dry	8,109	1,100	3,978	5,910	10,748	3,164	4,701	6,374	5,786	11,206	11,449	11,449
1988	Critical	1,706	3,093	1,702	4,528	8,981	1,618	4,395	4,262	5,401	6,679	6,272	2,366
1989	Dry	10,639	4,891	2,686	5,914	11,173	10,493	7,723	7,819	7,309	7,761	11,350	3,582
1990	Critical	4,959	1,100	2,415	3,900	5,225	1,500	4,374	4,580	4,003	3,489	2,452	3,021
1991	Critical	11,410	1,821	2,568	1,800	5,524	2,078	4,038	4,987	3,038	4,399	4,862	4,862
1992	Critical	7,730	2,027	1,100	2,910	2,992	4,985	5,040	3,904	4,234	7,871	12,460	12,138
1993	Above Normal	11,255	6,832	5,346	9,155	11,214	11,182	11,129	10,996	9,152	9,234	9,863	10,757
1994	Critical	4,407	2,735	3,248	5,636	11,236	9,029	5,918	7,429	6,202	10,834	12,135	11,958
1995	Wet	11,350	8,673	10,136	9,680	11,280	11,251	11,170	11,067	10,944	11,316	11,290	11,290
1996	Wet	8,645	8,174	6,779	7,019	7,924	9,751	11,153	8,301	10,933	11,901	11,726	11,862
1997	Wet	9,078	6,041	4,127	5,639	6,875	11,197	9,172	8,042	10,503	11,295	11,428	10,800
1998	Wet	8,588	8,866	9,593	9,680	11,280	11,251	11,170	11,067	10,944	11,479	11,680	10,159
1999	Wet	9,308	7,389	4,369	6,398	9,318	11,200	11,143	10,257	10,927	9,678	10,678	10,678
2000	Above Normal	10,487	7,058	5,343	6,946	7,716	11,209	10,618	10,466	9,694	11,298	11,704	11,776
2001	Dry	10,370	3,481	2,211	2,652	8,823	4,838	5,133	5,670	8,004	11,278	11,237	1,100
2002	Dry	4,940	4,275	3,946	6,000	11,052	10,275	6,879	5,861	10,917	11,239	11,445	1,338
2003	Above Normal	8,828	6,855	6,458	6,833	8,163	11,186	11,061					
	Average	8,253	5,549	5,125	6,257	8,956	8,752	9,054	8,618	8,986	10,054	10,577	9,637
	Wet	9,687	7,950	7,429	8,179	10,157	10,876	10,901	10,529	10,665	11,126	11,026	10,501
	Above Normal	10,205	6,825	5,653	7,243	8,702	10,817	10,823	10,448	9,944	10,798	11,614	10,871
	Below Normal	8,212	5,751	5,082	6,597	9,664	9,498	9,735	9,216	9,567	10,316	10,221	9,589
	Dry	7,344	3,472	3,554	4,699	9,308	7,527	7,588	6,605	8,302	9,238	10,524	8,927
	Critical	4,600	1,949	2,014	3,050	5,252	3,055	4,691	4,968	4,739	7,904	9,064	7,655
	Dry and Critical	6,247	2,863	2,938	4,039	7,685	5,738	6,429	5,951	6,877	8,704	9,940	8,418

Table 152: Simulated Old & Middle River Flow (cfs) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								-9,582	-6,928	-9,151	-9,262	-8,630
1922	Above Normal	-7,494	-6,540	-6,572	-4,506	-9,580	-10,167	-10,324	-9,813	-9,907	-8,668	-7,811	-4,548
1923	Below Normal	-4,831	-6,605	-5,376	-6,024	-10,803	-10,214	-10,139	-9,910	-6,964	-6,533	-5,916	-5,916
1924	Critical	-315	-1,667	-2,985	-5,674	-3,166	-1,617	-4,547	-4,936	-3,565	-8,290	-7,433	-7,745
1925	Dry	-129	-6,300	-5,303	-3,222	-5,987	-7,006	-7,626	-5,152	-5,660	-4,614	-9,626	-8,264
1926	Dry	-4,772	-6,227	-3,414	-4,255	-5,864	-7,070	-9,121	-5,516	-9,932	-9,571	-6,042	-4,517
1927	Wet	-7,052	-6,622	-5,747	-7,495	-9,676	-10,488	-10,468	-8,907	-9,848	-9,281	-9,457	-9,457
1928	Above Normal	-7,416	-6,779	-4,141	-6,607	-5,339	-10,657	-10,086	-9,251	-8,680	-7,203	-7,872	-6,449
1929	Critical	-2,535	-2,357	-1,799	-1,319	-5,029	-1,625	-4,727	-4,696	-3,759	-9,021	-9,590	-6,562
1930	Dry	-6,236	-2,846	-3,189	-2,881	-7,753	-5,600	-7,365	-5,077	-4,684	-3,436	-8,063	-4,154
1931	Critical	-2,043	-1,614	-2,003	-2,014	-6,793	-1,743	-4,560	-4,606	-3,203	-9,117	-9,500	-9,500
1932	Dry	-3,286	-1,702	-3,686	-1,878	-3,745	-7,214	-9,039	-5,024	-4,775	-4,676	-6,763	-4,620
1933	Critical	-4,238	-2,382	-3,047	-1,497	-2,101	-1,760	-4,672	-4,955	-3,550	-7,744	-8,709	-5,264
1934	Critical	-944	-1,593	-1,660	-2,050	-2,952	-2,029	-4,495	-4,480	-6,727	-4,940	-9,452	-4,799
1935	Below Normal	-6,909	-5,864	-4,926	-6,522	-10,039	-6,880	-8,448	-6,909	-6,408	-6,376	-9,506	-9,506
1936	Below Normal	-5,859	-6,148	-5,163	-5,774	-10,172	-7,303	-10,057	-7,666	-6,235	-6,262	-6,870	-1,384
1937	Below Normal	-1,266	-6,269	-5,653	-4,271	-5,814	-6,561	-9,363	-6,272	-9,886	-6,798	-3,572	6,588
1938	Wet	8,931	-6,932	-8,473	-1,827	-7,793	-9,531	-9,970	-9,777	-9,854	-9,266	-8,215	-5,604
1939	Dry	-4,736	-1,434	-4,597	-6,244	-10,688	-2,613	-4,863	-6,599	-6,286	-6,431	-9,132	-9,132
1940	Above Normal	-7,582	-6,991	-5,676	-6,596	-7,732	-10,555	-9,764	-8,529	-8,401	-8,746	-8,842	-3,858
1941	Wet	-4,712	-6,656	-7,980	-5,736	-9,182	-10,034	-10,357	-9,999	-9,735	-8,694	-5,664	-3,673
1942	Wet	-5,960	-6,860	-7,322	-6,893	-8,837	-9,606	-9,986	-9,993	-9,762	-9,046	-4,454	-4,925
1943	Wet	2,650	-6,702	-5,513	-4,608	-7,151	-9,570	-9,424	-8,612	-8,203	-7,502	-8,589	-8,589
1944	Dry	-6,594	-3,866	-4,437	-6,348	-10,774	-7,636	-9,297	-7,007	-9,939	-9,366	-7,436	-4,015
1945	Below Normal	-180	-5,175	-5,330	-7,154	-10,646	-10,186	-10,449	-9,443	-9,915	-7,558	-8,855	-768
1946	Below Normal	-4,989	-4,851	-5,134	-6,133	-10,998	-9,623	-8,882	-8,241	-8,155	-9,111	-6,634	-7,956
1947	Dry	-6,822	-2,204	-4,048	-6,104	-11,108	-6,682	-4,690	-6,821	-8,055	-4,519	-9,701	-9,701
1948	Below Normal	-4,649	-5,888	-5,288	-7,626	-9,204	-10,667	-10,568	-8,804	-6,505	-8,048	-6,510	-395
1949	Dry	-9,211	-3,713	-2,226	-2,985	-9,792	-8,858	-7,862	-5,575	-6,855	-4,541	-9,466	-8,130
1950	Below Normal	-6,311	-6,272	-4,200	-6,053	-7,840	-7,390	-10,461	-8,835	-9,829	-3,143	56	-2,530
1951	Above Normal	-5,780	-5,541	-5,566	-6,879	-8,574	-10,641	-10,477	-9,402	-9,472	-9,063	-8,091	-8,091
1952	Wet	-3,889	-7,278	-8,496	-3,876	-8,039	-9,534	-10,046	-10,178	-9,907	-9,080	-8,420	-4,506
1953	Wet	-6,756	-5,226	-6,567	-7,968	-10,021	-8,855	-10,472	-10,138	-9,942	-9,160	-9,144	-9,458
1954	Above Normal	-8,150	-6,419	-4,826	-6,104	-7,374	-9,563	-9,604	-8,319	-9,979	-9,411	-9,257	-5,666
1955	Dry	-3,840	-3,174	-4,020	-2,967	-9,458	-2,980	-6,642	-5,363	-7,588	-6,831	446	446
1956	Wet	-4,585	-6,052	-6,626	-6,980	-9,208	-8,970	-10,164	-10,026	-8,089	-9,002	-6,353	-9,523
1957	Above Normal	-8,610	-1,214	-5,249	-6,755	-6,633	-10,592	-9,547	-10,072	-10,038	-9,430	-8,906	-8,042
1958	Wet	-2,736	-6,431	-8,237	-4,811	-8,835	-9,542	-9,998	-10,131	-9,959	-8,724	-8,531	-8,695
1959	Below Normal	-1,388	-3,719	-4,553	-7,087	-9,305	-6,194	-6,912	-7,651	-7,392	-6,444	-7,613	-7,613
1960	Dry	-6,716	-1,138	-3,030	-6,095	-10,603	-7,446	-8,993	-4,740	-8,675	-8,977	-7,386	-7,395
1961	Dry	-5,718	-1,850	-3,604	-6,613	-7,878	-10,188	-6,516	-5,337	-5,274	-8,868	-4,703	-8,647
1962	Below Normal	-7,381	-4,851	-5,249	-6,663	-10,377	-10,083	-8,041	-10,189	-10,131	-9,542	-9,465	-9,337
1963	Wet	-5,754	-6,768	-6,601	-6,688	-9,249	-10,536	-10,355	-10,003	-9,950	-9,483	-9,489	-9,489
1964	Dry	-3,844	-1,909	-3,239	-5,560	-11,077	-9,379	-5,798	-6,512	-10,076	-9,061	-7,430	-7,592
1965	Wet	-3,482	-6,802	-4,869	-5,710	-7,134	-9,741	-9,740	-8,235	-9,651	-8,550	-8,417	-7,489
1966	Below Normal	-7,610	-4,386	-4,001	-6,668	-9,934	-10,747	-9,490	-9,792	-9,977	-9,192	-8,780	-9,403
1967	Wet	-7,935	-6,780	-8,350	-3,389	-5,184	-9,410	-9,907	-10,039	-9,989	-9,315	-8,929	-8,929
1968	Below Normal	-7,290	-1,581	-4,566	-7,234	-9,724	-9,819	-7,312	-8,023	-8,292	-9,364	-6,418	5,406
1969	Wet	2,269	-6,974	-8,234	286	-7,824	-9,664	-10,048	-9,719	-9,834	-8,974	-1,941	-4,335
1970	Wet	-5,216	-5,436	-4,458	-6,488	-9,056	-9,934	-8,377	-8,003	-9,819	-8,983	-9,415	-8,028
1971	Wet	-9,171	-6,288	-6,322	-8,315	-10,178	-10,651	-10,511	-10,070	-9,099	-9,333	-9,556	-9,556
1972	Below Normal	-9,012	-3,759	-4,559	-7,086	-8,030	-10,039	-7,883	-6,483	-9,825	-9,306	-8,087	-7,735
1973	Above Normal	-6,922	-5,482	-4,485	-6,055	-10,174	-10,255	-10,284	-9,821	-9,785	-8,536	-8,041	-8,625
1974	Wet	-5,223	-6,889	-5,936	-5,757	-10,234	-10,189	-10,358	-9,807	-9,769	-9,186	-8,542	-7,328
1975	Wet	-5,580	-6,400	-6,067	-7,399	-10,101	-10,009	-10,427	-9,764	-9,820	-9,417	-8,710	-8,710
1976	Critical	-5,917	-3,044	-2,999	-5,164	-8,487	-5,742	-4,535	-4,422	-5,985	-3,013	-4,239	-1,809
1977	Critical	-1,106	-1,564	-1,530	-2,743	-2,450	-3,594	-4,267	-4,107	-3,815	-7,466	-9,107	-6,930
1978	Above Normal	-4,953	-7,118	-7,839	-4,368	-10,099	-10,169	-10,217	-10,285	-9,002	-6,881	-9,122	-7,234
1979	Below Normal	-4,837	-5,257	-6,560	-6,542	-9,885	-8,025	-9,580	-8,239	-9,928	-9,359	-5,294	-5,294
1980	Above Normal	-302	-6,617	-4,917	-3,499	-6,903	-7,451	-10,277	-8,319	-7,240	-8,505	-9,478	-8,757
1981	Dry	-7,485	-4,234	-4,529	-6,646	-10,855	-7,267	-8,312	-9,122	-10,015	-9,389	-8,916	-2,522
1982	Wet	-1,708	-5,949	-8,638	-5,664	-8,238	-9,370	-8,962	-8,806	-7,501	60	4,939	11,153
1983	Wet	21,790	-6,502	-8,104	1,243	-1,772	-7,597	-8,980	-9,512	-6,250	3,104	-606	-606
1984	Wet	-5,330	-4,111	-3,865	-5,888	-9,931	-10,306	-9,371	-9,612	-9,621	-9,500	-9,274	-6,037
1985	Dry	-4,103	-3,972	-4,834	-6,470	-10,974	-10,386	-9,099	-7,782	-8,001	-9,236	-9,482	-2,500
1986	Wet	6,241	-6,961	-7,831	-3,176	-6,747	-9,007	-9,839	-9,032	-8,073	-6,269	-7,261	-6,716
1987	Dry	-6,320	-1,311	-4,376	-6,138	-10,595	-3,164	-4,607	-5,871	-5,352	-9,545	-9,640	-9,640
1988	Critical	-994	-3,227	-2,128	-4,826	-9,231	-1,779	-4,395	-4,167	-4,702	-5,531	-4,921	-1,298
1989	Dry	-9,141	-4,991	-3,244	-6,508	-11,267	-10,425	-7,227	-7,306	-6,756	-6,508	-9,743	-2,443
1990	Critical	-4,088	-1,536	-2,471	-4,874	-5,367	-1,787	-4,371	-4,332	-3,555	-2,475	-2,062	-2,092
1991	Critical	-9,614	-1,897	-2,843	-2,325	-6,118	-2,418	-4,165	-4,638	-2,588	-3,497	-3,943	-3,943
1992	Critical	-6,378	-2,243	-1,828	-3,504	-3,589	-4,977	-5,097	-3,783	-3,772	-6,548	-8,477	-8,760
1993	Above Normal	-8,480	-6,246	-5,153	-7,028	-9,892	-10,032	-10,434	-10,041	-6,476	-8,158	-7,572	-8,851
1994	Critical	-3,492	-2,752	-3,324	-6,325	-11,377	-10,848	-6,812	-6,085	-3,749	-9,113	-8,551	-9,391
1995	Wet	-68	-8,255	-8,444	-4,509	-3,745	-9,414	-10,358	-10,117	-9,912	-9,274	-8,544	-8,544
1996	Wet	-2,024	-7,112	-6,329	-5,446	-7,622	-9,008	-10,362	-7,346	-9,569	315	26,351	1,375
1997	Wet	-3,424	-4,967	-3,878	-5,714	-6,257	-10,435	-8,410	-7,056	-9,310	-9,249	-7,769	5,509
1998	Wet	-1,090	-7,402	-7,965	-1,456	-3,687	-9,191	-9,802	-9,553	-9,692	-9,079	-8,025	-3,444
1999	Wet	-5,495	-6,328	-4,217	-5,882	-9,056	-10,434	-10,388	-9,312	-9,895	-7,080	-9,337	-9,337
2000	Above Normal	-6,042	-6,206	-5,181	-6,622	-7,662	-10,538	-9,794	-9,337	-9,289	-9,396	-9,389	-9,410
2001	Dry	-7,681	-2,728	-2,724	-3,138	-8,736	-3,475	-4,880	-5,349	-7,061	-9,046	-9,319	-137
2002	Dry	-3,125	-4,245	-3,750	-6,378	-11,022	-9,465	-6,407	-5,343	-10,120	-9,208	-9,707	-305
2003	Above Normal	-7,400	-5,604	-6,238	-7,249	-8,273	-10,596	-10,398					
	Average	-4,248	-4,802	-4,980	-5,195	-8,178	-8,082	-8,425	-7,777	-7,948	-7,570	-7,055	-5,491
	Wet	-2,127	-6,488	-6,733	-5,006	-7,875	-9,655	-9,888	-9,375	-9,348	-7,691	-5,898	-5,575
	Above Normal	-6,594	-5,896	-5,487	-6,022	-8,186	-10,101	-10,100	-9,398	-8,767	-8,596	-8,637	-7,347
	Below Normal	-5,179	-5,045	-5,040	-6,488	-9,484	-8,838	-9,113	-8,318	-8,532	-7,645	-6,676	-3,989
	Dry	-5,542	-3,214	-3,792	-5,024	-9,343	-7,047	-7,130	-6,083	-7,506	-7,435	-7,895	-5,181
	Critical	-3,472	-2,156	-2,385	-3,526	-5,555	-3,327	-4,720	-4,600	-4,081	-6,396	-7,165	-5,674
	Dry and Critical	-4,714	-2,791	-3,229	-4,425	-7,828	-5,559	-6,166	-5,490	-6,136	-7,019	-7,603	-5,379

Table 153: Simulated Old & Middle River Flow (cfs) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								-9,631	-7,077	-9,151	-9,262	-8,564
1922	Above Normal	-7,172	-6,782	-6,563	-4,488	-9,578	-10,164	-10,317	-9,862	-9,851	-8,670	-7,841	-4,526
1923	Below Normal	-4,822	-6,813	-5,386	-5,994	-10,796	-10,208	-10,130	-9,826	-6,971	-6,541	-5,896	-5,896
1924	Critical	-159	-1,667	-2,992	-5,675	-3,357	-1,617	-4,547	-4,970	-3,365	-8,607	-7,435	-7,680
1925	Dry	220	-6,409	-5,355	-3,204	-6,011	-6,994	-7,619	-5,173	-6,045	-4,638	-9,622	-8,234
1926	Dry	-4,306	-6,051	-3,433	-4,299	-6,628	-7,067	-9,161	-5,567	-9,876	-9,571	-6,367	-4,479
1927	Wet	-6,709	-6,859	-5,881	-7,488	-9,687	-10,487	-10,460	-8,921	-9,784	-9,269	-9,455	-9,455
1928	Above Normal	-7,140	-6,683	-4,118	-6,578	-5,301	-10,655	-9,984	-9,285	-8,890	-7,108	-7,873	-6,510
1929	Critical	-3,067	-2,365	-1,812	-1,290	-5,129	-1,623	-4,744	-4,721	-3,873	-9,094	-9,590	-6,557
1930	Dry	-5,974	-2,900	-3,215	-2,763	-7,752	-5,603	-7,349	-5,094	-4,684	-3,433	-8,066	-4,152
1931	Critical	-2,184	-1,614	-2,017	-2,013	-6,748	-1,743	-4,560	-4,619	-3,336	-9,115	-9,500	-9,500
1932	Dry	-3,246	-2,402	-3,733	-2,241	-3,132	-7,218	-9,033	-5,062	-4,896	-4,659	-6,425	-4,656
1933	Critical	-4,083	-2,549	-3,065	-1,475	-2,751	-1,634	-4,689	-4,971	-3,641	-7,909	-7,823	-5,260
1934	Critical	-976	-1,586	-1,657	-2,008	-2,946	-2,024	-4,512	-4,496	-6,606	-5,594	-9,451	-4,731
1935	Below Normal	-6,283	-6,031	-4,940	-6,532	-10,063	-6,829	-9,338	-6,939	-6,298	-6,367	-9,505	-9,505
1936	Below Normal	-5,515	-6,893	-5,241	-5,754	-10,686	-6,963	-10,052	-7,734	-6,235	-6,258	-7,758	-2,278
1937	Below Normal	-1,860	-6,243	-5,820	-4,279	-6,199	-6,563	-8,485	-6,536	-9,827	-7,759	-3,692	5,594
1938	Wet	8,711	-7,060	-8,504	-1,983	-7,791	-9,528	-9,964	-9,758	-9,797	-9,266	-8,254	-5,598
1939	Dry	-4,632	-1,443	-4,605	-6,222	-10,527	-2,813	-4,880	-6,787	-6,224	-6,431	-9,132	-9,132
1940	Above Normal	-7,244	-7,947	-5,684	-6,598	-7,732	-10,561	-10,404	-9,618	-8,714	-8,748	-8,845	-4,585
1941	Wet	-4,879	-8,408	-8,062	-5,034	-9,182	-10,033	-10,351	-9,982	-9,679	-8,696	-6,606	-6,423
1942	Wet	-5,768	-7,675	-7,329	-6,873	-8,856	-9,622	-9,989	-9,994	-9,712	-9,048	-5,474	-6,260
1943	Wet	339	-7,153	-5,437	-4,597	-7,123	-9,661	-9,657	-8,910	-7,536	-8,118	-8,510	-8,510
1944	Dry	-6,488	-3,906	-4,448	-6,324	-10,768	-6,943	-8,553	-6,850	-9,883	-9,366	-7,435	-5,175
1945	Below Normal	-488	-5,893	-5,347	-7,184	-10,645	-10,185	-10,444	-9,576	-9,854	-7,443	-8,855	-1,038
1946	Below Normal	-4,991	-5,193	-5,144	-6,106	-11,000	-10,284	-8,868	-8,377	-8,327	-9,096	-6,623	-7,891
1947	Dry	-6,683	-3,195	-4,022	-6,088	-11,072	-6,698	-4,706	-6,237	-8,187	-4,123	-9,477	-9,477
1948	Below Normal	-4,581	-5,981	-5,319	-7,945	-9,804	-10,567	-10,294	-9,163	-7,980	-8,063	-7,329	-5,606
1949	Dry	-8,987	-3,810	-2,186	-2,966	-10,035	-8,825	-8,698	-5,629	-6,813	-4,616	-9,468	-8,913
1950	Below Normal	-6,371	-6,436	-4,283	-6,031	-6,930	-7,619	-10,455	-8,933	-9,771	-4,607	-436	-2,798
1951	Above Normal	-5,442	-6,539	-5,552	-6,913	-8,654	-10,641	-10,472	-9,459	-9,651	-9,051	-7,981	-7,981
1952	Wet	-4,303	-7,716	-8,486	-4,085	-8,037	-9,531	-10,039	-10,159	-9,851	-9,080	-8,420	-4,577
1953	Wet	-6,675	-5,617	-6,579	-7,962	-10,094	-7,948	-10,467	-10,124	-9,884	-9,167	-9,177	-9,461
1954	Above Normal	-8,290	-6,384	-4,815	-6,093	-7,350	-9,469	-9,617	-8,444	-9,923	-9,411	-9,257	-6,368
1955	Dry	-3,756	-3,176	-4,127	-2,916	-8,488	-4,289	-6,273	-5,415	-7,728	-7,542	233	233
1956	Wet	-4,341	-6,608	-6,851	-6,342	-9,207	-7,892	-10,039	-10,002	-7,905	-9,132	-6,663	-9,518
1957	Above Normal	-9,232	-931	-5,309	-6,530	-6,800	-10,591	-9,567	-10,054	-9,981	-9,430	-8,908	-7,996
1958	Wet	-3,341	-7,277	-8,268	-4,879	-8,833	-9,539	-9,992	-10,112	-9,903	-8,920	-8,531	-8,651
1959	Below Normal	-910	-3,897	-4,563	-7,023	-9,364	-6,365	-6,918	-7,375	-7,459	-6,444	-7,609	-7,609
1960	Dry	-6,693	-1,134	-3,040	-6,075	-10,674	-7,435	-8,977	-4,740	-8,674	-8,978	-7,386	-7,663
1961	Dry	-5,660	-1,854	-3,617	-6,613	-8,112	-10,173	-7,064	-5,358	-5,237	-8,926	-4,699	-8,604
1962	Below Normal	-7,275	-5,435	-5,213	-6,744	-10,457	-10,614	-8,166	-10,176	-10,084	-9,556	-9,466	-8,884
1963	Wet	-5,981	-6,664	-6,287	-6,667	-9,227	-10,526	-10,345	-9,974	-9,882	-9,467	-9,486	-9,486
1964	Dry	-3,776	-2,008	-3,261	-5,540	-11,080	-9,404	-5,987	-6,570	-10,020	-9,062	-7,578	-7,968
1965	Wet	-4,298	-7,326	-4,851	-5,740	-7,090	-9,880	-9,693	-8,580	-9,598	-8,550	-8,417	-7,471
1966	Below Normal	-8,330	-4,452	-4,001	-6,676	-9,930	-10,746	-9,515	-9,835	-9,920	-9,190	-8,779	-9,358
1967	Wet	-8,311	-7,582	-8,346	-4,051	-5,062	-9,408	-9,901	-10,020	-9,933	-9,315	-8,929	-8,929
1968	Below Normal	-6,952	-1,577	-4,576	-7,197	-9,690	-9,895	-7,320	-8,061	-8,412	-9,364	-7,095	4,219
1969	Wet	1,795	-6,968	-8,192	-533	-7,826	-9,661	-10,042	-9,700	-9,778	-8,974	-2,188	-4,264
1970	Wet	-4,899	-4,946	-4,468	-6,452	-9,175	-10,028	-8,176	-8,048	-9,762	-8,983	-9,414	-7,068
1971	Wet	-8,939	-6,763	-6,326	-8,315	-10,192	-10,659	-10,510	-10,062	-9,392	-9,334	-9,557	-9,557
1972	Below Normal	-9,473	-3,849	-4,580	-7,070	-7,910	-10,089	-7,876	-6,535	-9,768	-9,305	-8,090	-7,690
1973	Above Normal	-6,538	-6,100	-4,529	-6,011	-10,179	-10,249	-9,375	-9,641	-9,708	-8,554	-8,555	-8,580
1974	Wet	-5,815	-7,047	-6,026	-5,747	-10,232	-10,188	-10,333	-9,777	-9,704	-9,170	-8,701	-7,322
1975	Wet	-6,306	-6,649	-6,074	-7,193	-10,096	-10,005	-10,419	-9,762	-9,811	-9,403	-8,711	-8,711
1976	Critical	-5,839	-3,056	-2,999	-5,134	-8,505	-5,803	-4,546	-4,410	-5,982	-2,937	-4,245	-1,795
1977	Critical	-1,105	-1,564	-1,530	-2,746	-2,450	-3,580	-4,267	-4,133	-3,909	-7,496	-9,107	-7,568
1978	Above Normal	-5,099	-7,227	-7,453	-4,270	-10,097	-10,164	-10,209	-10,262	-9,160	-7,567	-9,121	-6,796
1979	Below Normal	-5,391	-5,586	-6,665	-6,508	-9,843	-7,688	-9,573	-8,229	-9,861	-9,340	-6,163	-6,163
1980	Above Normal	-588	-6,530	-5,139	-3,126	-6,541	-6,836	-10,270	-8,367	-7,388	-8,772	-9,478	-8,736
1981	Dry	-8,621	-4,293	-4,531	-6,637	-10,698	-7,292	-8,306	-9,171	-9,960	-9,389	-8,822	-3,297
1982	Wet	-2,597	-5,962	-8,657	-5,401	-8,235	-9,367	-8,956	-8,787	-7,750	-353	4,704	8,063
1983	Wet	22,145	-6,514	-8,143	1,051	-1,774	-7,594	-8,974	-9,490	-6,341	2,489	-881	-881
1984	Wet	-5,006	-4,184	-3,875	-5,878	-9,994	-10,303	-9,474	-9,530	-9,559	-9,491	-9,267	-6,033
1985	Dry	-3,986	-4,031	-4,835	-6,454	-10,976	-10,387	-9,094	-7,831	-8,145	-9,231	-9,483	-3,365
1986	Wet	5,605	-6,950	-7,831	-2,921	-6,741	-9,019	-9,840	-9,002	-8,167	-6,320	-7,321	-6,488
1987	Dry	-5,998	-1,307	-4,394	-6,095	-10,619	-3,112	-4,623	-5,942	-5,215	-9,539	-9,640	-9,640
1988	Critical	-974	-3,247	-2,140	-4,857	-9,315	-1,877	-4,411	-4,167	-4,915	-5,475	-5,086	-1,377
1989	Dry	-8,924	-5,045	-3,227	-6,425	-11,286	-10,085	-7,221	-7,334	-6,706	-6,508	-9,743	-2,593
1990	Critical	-4,033	-1,525	-2,503	-4,425	-5,747	-1,784	-4,388	-4,366	-3,611	-2,677	-1,746	-2,187
1991	Critical	-9,382	-2,059	-2,967	-2,320	-6,017	-2,317	-4,182	-4,714	-2,746	-3,571	-3,929	-3,929
1992	Critical	-6,346	-2,276	-1,808	-3,560	-3,638	-5,192	-5,127	-3,809	-3,925	-6,573	-8,478	-8,738
1993	Above Normal	-8,193	-6,455	-5,352	-6,219	-9,877	-10,332	-10,419	-10,104	-8,264	-7,760	-8,278	-8,858
1994	Critical	-3,332	-2,782	-3,360	-6,052	-11,370	-8,923	-5,896	-7,059	-5,680	-9,367	-8,552	-9,565
1995	Wet	518	-7,447	-8,595	-4,370	-3,738	-9,408	-10,349	-10,094	-9,853	-9,271	-8,542	-8,542
1996	Wet	-2,321	-7,323	-6,222	-5,431	-7,698	-8,931	-10,356	-7,405	-9,530	-1,161	26,048	1,018
1997	Wet	-4,047	-5,659	-4,161	-4,913	-6,805	-10,416	-8,340	-7,121	-9,372	-9,226	-7,781	3,885
1998	Wet	-919	-7,427	-7,919	-2,397	-3,683	-9,189	-9,796	-9,535	-9,635	-9,079	-8,025	-3,603
1999	Wet	-5,157	-6,577	-4,227	-5,896	-9,030	-10,433	-10,382	-9,346	-9,831	-8,033	-8,421	-8,421
2000	Above Normal	-5,775	-6,465	-5,209	-6,562	-7,708	-10,537	-9,764	-9,292	-8,685	-9,392	-9,389	-9,388
2001	Dry	-7,581	-3,227	-2,722	-3,088	-8,758	-4,667	-4,804	-5,314	-7,261	-9,042	-8,882	-118
2002	Dry	-3,362	-4,305	-3,767	-6,353	-11,031	-9,721	-6,673	-5,560	-10,067	-9,209	-9,708	-293
2003	Above Normal	-7,190	-6,273	-6,389	-7,220	-8,296	-10,596	-10,457					
	Average	-4,300	-5,021	-5,002	-5,166	-8,201	-8,067	-8,415	-7,824	-8,015	-7,682	-7,131	-5,762
	Wet	-2,365	-6,783	-6,754	-5,004	-7,900	-9,587	-9,879	-9,392	-9,306	-7,859	-5,999	-5,856
	Above Normal	-6,492	-6,193	-5,509	-5,884	-8,176	-10,066	-10,071	-9,502	-8,941	-8,634	-8,732	-7,407
	Below Normal	-5,232	-5,306	-5,077	-6,503	-9,523	-8,901	-9,102	-8,378	-8,626	-7,809	-6,950	-4,636
	Dry	-5,470	-3,361	-3,807	-5,017	-9,314	-7,151	-7,168	-6,091	-7,535	-7,459	-7,872	-5,418
	Critical	-3,457	-2,191	-2,404	-3,463	-5,664	-3,176	-4,656	-4,703	-4,299	-6,535	-7,078	-5,741
	Dry and Critical	-4,665	-2,893	-3,246	-4,395	-7,854	-5,561	-6,163	-5,536	-6,240	-7,089	-7,555	-5,547

Table 154: Simulated Previous Month X2 Position (km) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								75	83	85	80	80
1922	Above Normal	69	67	67	61	61	73	83	86	85	85	72	68
1923	Below Normal	72	74	70	71	76	78	84	85	85	86	86	86
1924	Critical	78	77	80	85	83	86	86	89	90	87	84	83
1925	Dry	64	65	68	72	76	82	86	89	87	86	86	80
1926	Dry	68	74	70	74	81	83	85	88	88	78	78	69
1927	Wet	55	59	59	65	73	74	83	86	86	81	81	81
1928	Above Normal	72	58	64	69	77	77	84	86	87	85	84	84
1929	Critical	79	78	80	81	82	86	86	89	89	88	82	76
1930	Dry	74	68	73	76	81	83	86	89	87	86	86	84
1931	Critical	81	82	81	85	83	86	86	89	89	87	78	78
1932	Dry	73	74	75	75	76	82	86	89	87	86	86	81
1933	Critical	81	78	77	81	82	86	86	89	90	88	83	78
1934	Critical	75	75	76	81	81	85	87	89	89	87	85	73
1935	Below Normal	74	70	62	64	72	77	84	88	88	86	85	85
1936	Below Normal	59	63	66	69	76	78	84	87	87	86	85	81
1937	Below Normal	66	61	65	69	74	79	85	87	87	76	63	64
1938	Wet	52	47	52	54	58	72	82	79	79	83	84	83
1939	Dry	80	76	77	78	81	80	86	89	88	86	86	86
1940	Above Normal	62	54	55	65	75	74	83	86	87	86	70	57
1941	Wet	51	52	53	58	68	75	83	81	84	85	66	58
1942	Wet	50	62	60	62	66	75	83	80	84	80	71	59
1943	Wet	58	54	61	67	76	77	84	87	87	86	85	85
1944	Dry	73	72	75	77	79	82	85	88	87	84	80	82
1945	Below Normal	66	66	72	74	76	79	84	87	86	84	64	62
1946	Below Normal	65	70	72	73	77	78	84	88	87	86	81	82
1947	Dry	77	74	75	77	80	81	86	89	88	86	85	85
1948	Below Normal	74	75	70	69	74	79	82	85	87	86	84	83
1949	Dry	73	66	73	74	78	83	84	88	88	86	85	78
1950	Below Normal	69	71	71	73	76	80	85	86	87	68	56	55
1951	Above Normal	55	62	69	72	76	75	83	86	86	85	69	69
1952	Wet	56	56	55	55	59	70	80	75	81	84	69	57
1953	Wet	64	70	72	69	71	76	84	82	85	83	84	72
1954	Above Normal	63	61	62	66	76	75	83	87	87	85	76	75
1955	Dry	75	78	77	78	80	82	85	89	88	86	63	63
1956	Wet	52	59	67	63	68	76	83	80	82	85	85	82
1957	Above Normal	71	64	68	71	76	77	84	87	80	81	75	67
1958	Wet	53	50	50	56	61	73	81	76	80	83	85	72
1959	Below Normal	64	67	74	78	78	78	84	88	87	86	84	84
1960	Dry	73	73	74	76	81	80	86	88	87	86	82	82
1961	Dry	72	73	76	78	81	82	83	88	88	86	83	83
1962	Below Normal	66	69	73	75	78	77	84	88	73	79	72	76
1963	Wet	62	65	56	63	72	73	83	85	85	75	81	81
1964	Dry	75	78	77	77	80	81	84	88	88	84	64	54
1965	Wet	61	67	62	66	75	76	84	86	87	77	78	70
1966	Below Normal	69	69	74	75	78	77	84	87	87	84	71	64
1967	Wet	61	59	58	58	59	68	80	75	79	83	83	83
1968	Below Normal	62	64	70	75	78	78	84	88	88	86	76	58
1969	Wet	51	54	56	56	60	73	83	78	80	83	66	50
1970	Wet	52	59	68	73	76	75	83	88	88	80	65	62
1971	Wet	65	64	67	66	72	74	83	81	84	85	81	81
1972	Below Normal	75	69	74	77	78	79	83	88	88	79	73	60
1973	Above Normal	55	57	67	71	74	76	83	86	85	67	59	52
1974	Wet	59	53	55	64	70	75	83	78	83	84	81	79
1975	Wet	64	56	64	65	68	76	83	79	80	81	82	82
1976	Critical	80	77	79	85	85	85	88	90	87	88	85	85
1977	Critical	82	82	81	85	86	86	87	89	89	89	82	65
1978	Above Normal	60	57	60	66	70	76	84	86	86	86	84	75
1979	Below Normal	67	65	69	71	74	79	85	88	87	85	78	78
1980	Above Normal	51	55	66	70	72	77	84	86	87	86	84	74
1981	Dry	71	69	73	78	80	81	86	89	86	73	59	56
1982	Wet	52	52	49	57	65	75	83	74	72	64	56	52
1983	Wet	47	42	49	52	54	60	67	67	73	60	50	50
1984	Wet	59	62	68	73	76	76	83	87	85	73	73	79
1985	Dry	78	76	76	76	80	81	84	87	87	86	81	76
1986	Wet	53	48	62	69	74	77	84	86	87	86	85	82
1987	Dry	77	71	74	77	80	81	86	89	88	86	82	82
1988	Critical	75	78	78	81	81	85	86	89	89	86	88	81
1989	Dry	80	67	69	74	79	80	84	88	88	86	83	79
1990	Critical	77	79	77	83	86	85	86	89	89	88	87	86
1991	Critical	83	72	74	83	86	85	86	89	90	86	88	88
1992	Critical	72	73	75	80	81	85	88	90	88	88	84	65
1993	Above Normal	60	64	64	65	67	75	83	86	86	86	84	83
1994	Critical	76	76	77	79	81	85	82	88	90	86	84	61
1995	Wet	61	48	53	53	58	64	74	74	80	84	74	74
1996	Wet	53	54	59	59	69	76	83	81	85	80	60	46
1997	Wet	51	62	69	73	77	77	84	88	88	85	79	63
1998	Wet	48	51	55	57	55	62	70	69	75	71	67	64
1999	Wet	55	56	63	67	73	76	83	83	86	85	85	85
2000	Above Normal	57	56	66	70	76	76	83	86	85	86	82	79
2001	Dry	73	71	74	78	81	82	86	89	88	86	73	64
2002	Dry	65	69	72	75	79	81	83	88	88	81	70	62
2003	Above Normal	65	69	68	64	72	75	83					
	Average	66	65	68	71	75	78	84	85	86	83	78	73
	Wet	56	56	59	62	67	73	81	80	82	80	75	70
	Above Normal	62	60	65	68	73	76	83	85	85	84	77	72
	Below Normal	68	68	70	72	76	78	84	87	86	83	76	73
	Dry	73	72	74	76	80	81	85	89	87	85	78	75
	Critical	78	77	78	82	83	85	86	89	89	87	84	77
	Dry and Critical	75	74	76	79	81	83	85	89	88	86	81	75

Table 155: Simulated Previous Month X2 Position (km) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								75	83	85	80	80
1922	Above Normal	69	67	67	61	61	73	83	86	85	85	72	68
1923	Below Normal	72	74	69	71	76	78	84	85	85	86	86	86
1924	Critical	78	77	80	85	83	86	86	89	90	87	84	83
1925	Dry	64	65	67	72	76	82	86	89	87	86	86	80
1926	Dry	67	74	70	74	81	83	85	88	88	78	78	69
1927	Wet	55	59	59	65	73	74	83	86	86	81	81	81
1928	Above Normal	72	58	64	69	77	77	84	86	87	85	84	84
1929	Critical	79	78	80	81	82	86	86	89	89	88	82	76
1930	Dry	74	68	73	76	81	83	86	89	87	86	86	84
1931	Critical	81	82	81	85	83	86	86	89	89	87	78	78
1932	Dry	73	74	75	75	76	82	86	89	87	86	86	80
1933	Critical	80	78	77	81	82	86	86	89	90	87	84	77
1934	Critical	75	75	76	81	81	85	87	89	89	86	86	73
1935	Below Normal	75	70	62	64	72	77	84	88	87	86	85	85
1936	Below Normal	59	63	66	69	76	77	84	87	87	86	86	82
1937	Below Normal	67	61	65	69	74	79	85	89	88	76	63	64
1938	Wet	52	47	52	54	58	72	82	79	79	83	84	83
1939	Dry	79	76	76	78	81	81	86	89	88	86	86	86
1940	Above Normal	62	54	55	65	75	74	83	86	86	86	70	58
1941	Wet	52	52	54	58	68	75	83	81	84	85	66	58
1942	Wet	50	62	60	62	66	75	83	80	84	80	71	59
1943	Wet	58	54	61	67	76	77	84	87	86	86	84	84
1944	Dry	73	72	74	77	79	82	85	89	88	84	80	82
1945	Below Normal	66	66	72	74	76	79	84	87	86	83	64	62
1946	Below Normal	65	70	72	73	77	78	84	88	87	86	81	82
1947	Dry	77	73	75	77	80	81	86	89	88	86	86	86
1948	Below Normal	74	75	70	69	73	79	82	86	87	86	83	84
1949	Dry	80	68	73	74	78	83	84	88	88	86	85	78
1950	Below Normal	69	71	71	72	76	80	85	86	87	68	56	55
1951	Above Normal	55	62	69	72	76	75	83	86	86	85	69	69
1952	Wet	56	56	55	55	59	71	80	75	81	83	69	57
1953	Wet	64	70	71	69	71	76	84	81	84	83	84	72
1954	Above Normal	63	61	62	66	76	75	83	87	87	84	76	75
1955	Dry	75	77	77	78	80	83	86	89	88	86	63	63
1956	Wet	52	59	67	63	68	75	83	79	81	84	85	82
1957	Above Normal	71	65	68	71	76	76	84	87	80	81	75	67
1958	Wet	53	50	50	56	61	73	81	76	80	83	84	72
1959	Below Normal	64	67	74	78	78	78	84	88	87	86	84	84
1960	Dry	73	73	74	76	81	80	86	88	87	86	82	82
1961	Dry	72	73	75	78	81	82	83	88	88	86	83	83
1962	Below Normal	66	69	73	74	78	77	84	88	73	79	72	76
1963	Wet	62	65	56	63	71	73	83	85	85	74	81	81
1964	Dry	75	78	77	77	80	81	84	88	88	84	64	54
1965	Wet	61	67	62	66	75	76	84	86	87	77	78	70
1966	Below Normal	69	69	73	75	78	77	84	87	87	84	71	64
1967	Wet	61	59	58	58	60	68	80	75	79	82	83	83
1968	Below Normal	62	64	70	75	78	78	84	88	88	86	76	58
1969	Wet	51	54	56	56	61	73	83	78	80	82	66	50
1970	Wet	52	59	68	73	76	75	83	88	88	79	65	62
1971	Wet	65	64	67	66	72	74	83	81	84	85	81	81
1972	Below Normal	75	69	74	77	78	79	83	88	88	79	73	60
1973	Above Normal	55	57	67	70	74	76	83	87	86	67	59	52
1974	Wet	59	53	55	64	70	75	83	78	82	84	81	79
1975	Wet	64	56	64	65	68	76	83	79	80	81	82	82
1976	Critical	80	76	79	85	85	84	88	90	87	88	85	86
1977	Critical	82	82	81	85	86	86	87	89	89	89	83	65
1978	Above Normal	61	57	60	66	70	76	84	86	86	86	84	75
1979	Below Normal	67	65	69	71	74	79	85	88	87	84	78	78
1980	Above Normal	51	55	66	70	71	77	84	86	87	86	84	74
1981	Dry	71	69	73	78	80	81	86	89	86	73	59	56
1982	Wet	52	52	49	57	65	74	83	74	71	64	57	52
1983	Wet	47	42	49	52	54	60	67	67	73	60	50	50
1984	Wet	59	62	68	73	76	76	83	87	85	73	73	79
1985	Dry	78	76	76	76	80	81	84	87	87	86	81	76
1986	Wet	53	48	62	69	74	77	84	86	87	86	85	82
1987	Dry	76	70	74	77	80	81	86	89	88	86	82	82
1988	Critical	75	78	78	81	81	85	86	89	89	86	87	82
1989	Dry	80	67	69	74	79	80	84	88	88	86	83	79
1990	Critical	77	78	77	83	86	85	86	89	89	88	88	85
1991	Critical	83	72	74	82	85	86	85	89	90	86	88	88
1992	Critical	72	72	75	80	81	85	88	90	88	88	84	65
1993	Above Normal	60	63	63	65	67	75	83	86	86	86	83	84
1994	Critical	76	76	77	79	82	84	84	88	89	85	84	61
1995	Wet	60	48	53	53	58	64	74	74	80	84	74	74
1996	Wet	53	54	59	59	69	76	83	81	85	80	60	46
1997	Wet	51	62	69	73	77	77	84	88	88	85	79	63
1998	Wet	48	51	55	57	55	62	70	69	75	71	67	64
1999	Wet	55	56	63	67	73	76	83	83	86	84	85	85
2000	Above Normal	57	56	66	70	76	76	83	86	86	86	82	79
2001	Dry	73	71	74	78	81	82	86	89	88	86	72	64
2002	Dry	65	69	72	75	79	81	83	88	87	81	70	62
2003	Above Normal	65	69	68	64	72	75	83					
	Average	66	65	68	71	75	78	84	85	85	83	78	73
	Wet	56	56	59	62	67	73	81	80	82	80	75	70
	Above Normal	62	60	64	67	73	75	83	85	85	84	77	72
	Below Normal	68	68	70	72	76	78	84	87	86	83	76	73
	Dry	74	72	74	76	80	82	85	89	87	85	78	75
	Critical	78	77	78	82	83	85	86	89	89	87	84	77
	Dry and Critical	75	74	75	79	81	83	86	89	88	86	81	76

Table 156: Simulated Electrical Conductivity at Mendota Pool (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								491	552	623	550	375
1922	Normal-Wet	291	102	105	367	355	373	391	491	552	623	140	549
1923	Normal-Wet	544	469	468	438	365	379	475	537	540	630	556	556
1924	Critical High	814	889	882	766	785	693	699	690	742	924	732	760
1925	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
1926	Normal-Dry	620	553	468	440	349	485	610	599	572	630	678	615
1927	Normal-Wet	550	460	470	367	334	364	391	398	500	532	540	540
1928	Normal-Dry	542	463	471	450	355	373	391	491	552	623	550	550
1929	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1930	Dry	620	553	480	440	349	485	610	599	572	630	678	615
1931	Critical High	814	889	882	766	785	693	699	690	742	924	732	732
1932	Normal-Wet	620	553	480	440	349	485	610	599	572	630	678	615
1933	Normal-Dry	814	889	882	766	785	693	699	690	742	924	732	760
1934	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1935	Normal-Wet	544	441	450	432	365	379	475	537	540	630	556	556
1936	Normal-Wet	515	103	116	438	365	379	475	537	540	630	111	111
1937	Normal-Wet	109	102	102	233	365	379	475	537	540	116	110	109
1938	Wet	108	101	102	102	182	364	391	398	500	532	540	550
1939	Dry	620	541	480	440	349	485	610	599	572	630	678	678
1940	Normal-Wet	531	463	333	450	355	373	391	491	552	337	133	113
1941	Wet	428	103	105	103	334	364	391	398	500	298	113	205
1942	Normal-Wet	550	418	383	184	334	364	391	398	500	532	106	272
1943	Normal-Wet	106	102	104	364	334	364	391	398	500	532	540	540
1944	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	119
1945	Normal-Wet	544	452	468	438	365	379	475	537	540	497	227	551
1946	Normal-Wet	544	469	375	438	365	379	475	537	540	630	556	551
1947	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	678
1948	Normal-Dry	544	469	468	438	365	379	475	537	540	630	556	551
1949	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
1950	Normal-Dry	544	469	468	438	365	379	475	537	446	110	107	334
1951	Normal-Wet	542	463	471	450	355	373	391	491	552	623	550	550
1952	Wet	110	103	102	102	290	364	391	398	500	532	140	550
1953	Normal-Dry	550	460	470	407	334	364	391	398	500	532	540	550
1954	Normal-Dry	542	463	471	450	355	373	391	491	552	623	550	550
1955	Normal-Dry	620	553	480	440	349	485	610	599	572	113	110	110
1956	Wet	108	272	170	298	334	364	391	398	500	532	540	550
1957	Normal-Dry	542	463	471	450	355	373	391	491	552	623	550	378
1958	Wet	110	103	104	103	334	364	391	398	500	532	540	543
1959	Normal-Dry	544	469	468	438	365	379	475	537	540	630	556	556
1960	Dry	620	553	480	440	349	485	610	599	572	630	678	615
1961	Critical High	620	553	480	440	349	485	610	599	572	630	678	615
1962	Normal-Wet	544	469	468	438	365	379	475	537	540	630	556	138
1963	Normal-Wet	550	460	470	407	334	364	391	398	500	532	540	540
1964	Dry	620	553	480	440	349	485	610	599	572	630	116	145
1965	Normal-Wet	550	460	470	407	334	364	391	398	500	474	459	550
1966	Normal-Dry	544	469	468	438	365	379	475	537	540	630	535	376
1967	Wet	110	102	102	102	102	364	391	398	165	532	540	540
1968	Dry	544	469	468	438	365	379	475	537	540	630	106	106
1969	Wet	103	101	102	101	102	364	391	398	500	532	107	136
1970	Normal-Dry	536	460	470	407	334	364	391	398	500	532	540	550
1971	Normal-Dry	550	460	470	407	334	364	391	398	500	532	540	540
1972	Normal-Dry	544	469	468	438	365	379	475	537	540	630	556	551
1973	Normal-Wet	542	463	191	318	355	373	391	491	552	623	112	550
1974	Normal-Wet	439	374	169	222	334	364	391	398	500	532	540	550
1975	Normal-Wet	531	412	463	386	334	364	391	398	500	532	540	540
1976	Critical High	814	889	882	766	785	693	699	690	742	924	732	760
1977	Critical Low	814	889	882	766	785	693	699	690	742	924	732	115
1978	Wet	105	101	102	104	224	373	391	491	552	623	230	550
1979	Normal-Wet	395	444	299	436	365	379	475	537	540	630	105	105
1980	Wet	103	102	104	127	245	373	391	491	552	623	550	550
1981	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	121
1982	Wet	110	101	102	103	306	364	391	226	107	103	102	105
1983	Wet	102	101	101	101	101	250	259	104	106	105	103	103
1984	Normal-Wet	544	460	470	407	334	364	391	398	500	532	540	550
1985	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	118
1986	Wet	103	101	102	103	332	364	391	398	500	508	515	550
1987	Dry	620	553	480	440	349	485	610	599	572	630	678	678
1988	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1989	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
1990	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1991	Normal-Dry	814	889	882	766	785	693	699	690	742	924	732	732
1992	Dry	814	889	882	766	785	693	699	690	742	924	732	403
1993	Wet	528	103	220	231	355	373	391	491	552	623	550	550
1994	Dry	814	889	882	766	785	693	699	690	742	924	602	122
1995	Wet	107	101	102	103	102	360	391	398	500	414	540	540
1996	Normal-Wet	109	413	103	393	334	364	391	398	500	111	103	105
1997	Wet	112	415	105	407	334	364	391	398	500	532	528	117
1998	Wet	106	101	102	101	101	363	390	398	488	291	511	516
1999	Normal-Wet	550	460	470	407	334	364	391	398	500	532	540	540
2000	Normal-Wet	498	463	400	450	355	373	391	491	552	623	550	550
2001	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
2002	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
2003	Normal-Wet	542	463	471	450	355	373	391					
	Average	501	460	426	414	392	441	497	517	551	593	498	470
	Wet	153	132	114	143	236	358	383	386	439	457	384	416
	Normal-Wet	471	398	351	390	350	376	427	473	528	533	398	428
	Normal-Dry	601	541	508	464	388	451	535	555	564	598	581	492
	Dry	711	713	680	603	568	580	643	639	654	777	600	534
	Critical High	766	805	782	685	676	641	677	667	700	851	719	717
	Critical Low	814	889	882	766	785	693	699	690	742	924	732	115
	Dry and Critical	730	745	716	632	606	601	654	649	670	803	635	552

Table 157: Simulated Electrical Conductivity at Mendota Pool (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								491	552	623	550	550
1922	Normal-Wet	238	180	331	341	355	373	391	491	552	623	170	550
1923	Normal-Wet	544	469	468	438	365	379	475	537	540	630	556	556
1924	Critical High	814	889	882	766	785	693	699	690	742	924	732	760
1925	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
1926	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
1927	Normal-Wet	550	460	470	400	334	364	391	398	500	532	540	540
1928	Normal-Dry	542	463	471	450	355	373	391	491	552	623	550	550
1929	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1930	Dry	620	553	480	440	349	485	610	599	572	630	678	615
1931	Critical High	814	889	882	766	785	693	699	690	742	924	732	732
1932	Normal-Wet	620	553	480	440	349	485	610	599	572	630	678	615
1933	Normal-Dry	814	889	882	766	785	693	699	690	742	924	732	760
1934	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1935	Normal-Wet	544	469	468	438	365	379	475	537	540	630	556	556
1936	Normal-Wet	544	294	327	438	365	379	475	537	540	630	111	130
1937	Normal-Wet	323	103	103	352	365	379	475	537	540	116	111	114
1938	Wet	145	102	102	103	185	364	391	398	500	532	540	550
1939	Dry	620	553	480	440	349	485	610	599	572	630	678	678
1940	Normal-Wet	542	463	471	450	355	373	391	491	552	339	134	120
1941	Wet	550	460	470	407	334	364	391	398	500	298	134	299
1942	Normal-Wet	550	460	383	245	334	364	391	398	500	532	114	550
1943	Normal-Wet	109	236	192	364	334	364	391	398	500	532	540	540
1944	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	131
1945	Normal-Wet	544	469	468	438	365	379	475	537	540	630	556	551
1946	Normal-Wet	544	469	468	438	365	379	475	537	540	630	556	551
1947	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	678
1948	Normal-Dry	544	469	468	438	365	379	475	537	540	630	556	551
1949	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
1950	Normal-Dry	544	469	468	438	365	379	475	537	540	136	113	551
1951	Normal-Wet	542	463	471	450	355	373	391	491	552	623	550	550
1952	Wet	333	277	103	104	290	364	391	398	500	532	540	550
1953	Normal-Dry	550	460	470	407	334	364	391	398	500	532	540	550
1954	Normal-Dry	542	463	471	450	355	373	391	491	552	623	550	550
1955	Normal-Dry	620	553	480	440	349	485	610	599	572	119	111	111
1956	Wet	108	291	470	407	334	364	391	398	500	532	540	550
1957	Normal-Dry	542	463	471	450	355	373	391	491	552	623	550	550
1958	Wet	332	444	301	172	334	364	391	398	500	532	540	550
1959	Normal-Dry	544	469	468	438	365	379	475	537	540	630	556	556
1960	Dry	620	553	480	440	349	485	610	599	572	630	678	615
1961	Critical High	620	553	480	440	349	485	610	599	572	630	678	615
1962	Normal-Wet	544	469	468	438	365	379	475	537	540	630	556	551
1963	Normal-Wet	550	460	470	407	334	364	391	398	500	532	540	540
1964	Dry	620	553	480	440	349	485	610	599	572	630	678	615
1965	Normal-Wet	550	460	470	407	334	364	391	398	500	532	540	550
1966	Normal-Dry	544	469	468	438	365	379	475	537	540	630	556	551
1967	Wet	479	222	103	103	102	364	391	398	165	532	540	540
1968	Dry	544	469	468	438	365	379	475	537	540	630	108	109
1969	Wet	104	101	102	102	102	364	391	398	500	532	108	136
1970	Normal-Dry	550	460	470	407	334	364	391	398	500	532	540	550
1971	Normal-Dry	550	460	470	407	334	364	391	398	500	532	540	540
1972	Normal-Dry	544	469	468	438	365	379	475	537	540	630	556	551
1973	Normal-Wet	542	463	243	450	355	373	391	491	552	623	550	550
1974	Normal-Wet	550	359	400	303	334	364	391	398	500	532	540	550
1975	Normal-Wet	550	460	470	407	334	364	391	398	500	532	540	540
1976	Critical High	814	889	882	766	785	693	699	690	742	924	732	760
1977	Critical Low	814	889	882	766	785	693	699	690	742	924	732	118
1978	Wet	108	101	103	304	228	373	391	491	552	623	550	550
1979	Normal-Wet	544	463	437	436	365	379	475	537	540	630	108	108
1980	Wet	103	104	172	414	247	373	391	491	552	623	550	550
1981	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	361
1982	Wet	467	102	103	245	304	364	391	398	111	104	103	106
1983	Wet	103	101	102	102	102	250	259	104	107	107	104	104
1984	Normal-Wet	544	460	470	407	334	364	391	398	500	532	540	550
1985	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	121
1986	Wet	104	101	104	164	332	364	391	398	500	508	515	550
1987	Dry	620	553	480	440	349	485	610	599	572	630	678	678
1988	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1989	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
1990	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1991	Normal-Dry	814	889	882	766	785	693	699	690	742	924	732	732
1992	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1993	Wet	542	463	471	450	355	373	391	491	552	623	550	550
1994	Dry	814	889	882	766	785	693	699	690	742	924	732	345
1995	Wet	126	102	102	180	104	360	391	398	500	414	540	540
1996	Normal-Wet	290	460	235	406	334	364	391	398	500	132	104	107
1997	Wet	301	460	470	407	334	364	391	398	500	532	528	126
1998	Wet	110	101	102	102	102	363	390	398	488	291	540	550
1999	Normal-Wet	550	460	470	407	334	364	391	398	500	532	540	540
2000	Normal-Wet	542	463	471	450	355	373	391	491	552	623	550	550
2001	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
2002	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
2003	Normal-Wet	542	463	471	450	355	373	391					
	Average	529	484	463	437	392	441	497	519	552	596	527	506
	Wet	251	221	211	235	237	358	383	397	439	457	433	425
	Normal-Wet	500	421	407	408	350	376	427	473	528	541	433	464
	Normal-Dry	602	541	509	464	388	451	535	555	568	600	582	526
	Dry	711	714	680	603	568	580	643	639	654	777	657	621
	Critical High	766	805	782	684	676	641	677	667	700	851	719	717
	Critical Low	814	889	882	766	785	693	699	690	742	924	732	118
	Dry and Critical	730	746	716	632	606	601	654	649	670	803	676	614

Table 158: Simulated Electrical Conductivity at San Joaquin River below Sack Dam (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								491	552	623	550	375
1922	Normal-Wet	291	102	105	367	355	373	391	491	552	623	140	549
1923	Normal-Wet	544	469	468	438	365	379	475	537	540	630	556	556
1924	Critical High	814	889	882	766	785	693	699	690	742	924	732	760
1925	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
1926	Normal-Dry	620	553	468	440	349	485	610	599	572	630	678	615
1927	Normal-Wet	550	460	470	367	334	364	391	398	500	532	540	540
1928	Normal-Dry	542	463	471	450	355	373	391	491	552	623	550	550
1929	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1930	Dry	620	553	480	440	349	485	610	599	572	630	678	615
1931	Critical High	814	889	882	766	785	693	699	690	742	924	732	732
1932	Normal-Wet	620	553	480	440	349	485	610	599	572	630	678	615
1933	Normal-Dry	814	889	882	766	785	693	699	690	742	924	732	760
1934	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1935	Normal-Wet	544	441	450	432	365	379	475	537	540	630	556	556
1936	Normal-Wet	515	103	116	438	365	379	475	537	540	630	111	111
1937	Normal-Wet	109	102	102	233	365	379	475	537	540	116	110	109
1938	Wet	108	101	102	102	182	364	391	398	500	532	540	550
1939	Dry	620	541	480	440	349	485	610	599	572	630	678	678
1940	Normal-Wet	531	463	333	450	355	373	391	491	552	337	133	113
1941	Wet	428	103	105	103	334	364	391	398	500	298	113	205
1942	Normal-Wet	550	418	383	184	334	364	391	398	500	532	106	272
1943	Normal-Wet	106	102	104	364	334	364	391	398	500	532	540	540
1944	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	119
1945	Normal-Wet	544	452	468	438	365	379	475	537	540	497	227	551
1946	Normal-Wet	544	469	375	438	365	379	475	537	540	630	556	551
1947	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	678
1948	Normal-Dry	544	469	468	438	365	379	475	537	540	630	556	551
1949	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
1950	Normal-Dry	544	469	468	438	365	379	475	537	446	110	107	334
1951	Normal-Wet	542	463	471	450	355	373	391	491	552	623	550	550
1952	Wet	110	103	102	102	290	364	391	398	500	532	140	550
1953	Normal-Dry	550	460	470	407	334	364	391	398	500	532	540	550
1954	Normal-Dry	542	463	471	450	355	373	391	491	552	623	550	550
1955	Normal-Dry	620	553	480	440	349	485	610	599	572	113	110	110
1956	Wet	108	272	170	298	334	364	391	398	500	532	540	550
1957	Normal-Dry	542	463	471	450	355	373	391	491	552	623	550	378
1958	Wet	110	103	104	103	334	364	391	398	500	532	540	543
1959	Normal-Dry	544	469	468	438	365	379	475	537	540	630	556	556
1960	Dry	620	553	480	440	349	485	610	599	572	630	678	615
1961	Critical High	620	553	480	440	349	485	610	599	572	630	678	615
1962	Normal-Wet	544	469	468	438	365	379	475	537	540	630	556	138
1963	Normal-Wet	550	460	470	407	334	364	391	398	500	532	540	540
1964	Dry	620	553	480	440	349	485	610	599	572	630	116	145
1965	Normal-Wet	550	460	470	407	334	364	391	398	500	474	459	550
1966	Normal-Dry	544	469	468	438	365	379	475	537	540	630	535	376
1967	Wet	110	102	102	102	102	364	391	398	165	532	540	540
1968	Dry	544	469	468	438	365	379	475	537	540	630	106	106
1969	Wet	103	101	102	101	102	364	391	398	500	532	107	136
1970	Normal-Dry	536	460	470	407	334	364	391	398	500	532	540	550
1971	Normal-Dry	550	460	470	407	334	364	391	398	500	532	540	540
1972	Normal-Dry	544	469	468	438	365	379	475	537	540	630	556	551
1973	Normal-Wet	542	463	191	318	355	373	391	491	552	623	112	550
1974	Normal-Wet	439	374	169	222	334	364	391	398	500	532	540	550
1975	Normal-Wet	531	412	463	386	334	364	391	398	500	532	540	540
1976	Critical High	814	889	882	766	785	693	699	690	742	924	732	760
1977	Critical Low	814	889	882	766	785	693	699	690	742	924	732	115
1978	Wet	105	101	102	104	224	373	391	491	552	623	230	550
1979	Normal-Wet	395	444	299	436	365	379	475	537	540	630	105	105
1980	Wet	103	102	104	127	245	373	391	491	552	623	550	550
1981	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	121
1982	Wet	110	101	102	103	306	364	391	226	107	103	102	105
1983	Wet	102	101	101	101	101	250	259	104	106	105	103	103
1984	Normal-Wet	544	460	470	407	334	364	391	398	500	532	540	550
1985	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	118
1986	Wet	103	101	102	103	332	364	391	398	500	508	515	550
1987	Dry	620	553	480	440	349	485	610	599	572	630	678	678
1988	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1989	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
1990	Dry	814	889	882	766	785	693	699	690	742	924	732	760
1991	Normal-Dry	814	889	882	766	785	693	699	690	742	924	732	732
1992	Dry	814	889	882	766	785	693	699	690	742	924	732	403
1993	Wet	528	103	220	231	355	373	391	491	552	623	550	550
1994	Dry	814	889	882	766	785	693	699	690	742	924	602	122
1995	Wet	107	101	102	103	102	360	391	398	500	414	540	540
1996	Normal-Wet	109	413	103	393	334	364	391	398	500	111	103	105
1997	Wet	112	415	105	407	334	364	391	398	500	532	528	117
1998	Wet	106	101	102	101	101	363	390	398	488	291	511	516
1999	Normal-Wet	550	460	470	407	334	364	391	398	500	532	540	540
2000	Normal-Wet	498	463	400	450	355	373	391	491	552	623	550	550
2001	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
2002	Normal-Dry	620	553	480	440	349	485	610	599	572	630	678	615
2003	Normal-Wet	542	463	471	450	355	373	391					
	Average	501	460	426	414	392	441	497	517	551	593	498	470
	Wet	153	132	114	143	236	358	383	386	439	457	384	416
	Normal-Wet	471	398	351	390	350	376	427	473	528	533	398	428
	Normal-Dry	601	541	508	464	388	451	535	555	564	598	581	492
	Dry	711	713	680	603	568	580	643	639	654	777	600	534
	Critical High	766	805	782	685	676	641	677	667	700	851	719	717
	Critical Low	814	889	882	766	785	693	699	690	742	924	732	115
	Dry and Critical	730	745	716	632	606	601	654	649	670	803	635	552

Table 159: Simulated Electrical Conductivity at San Joaquin River below Sack Dam (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								410	290	623	550	287
1922	Normal-Wet	131	108	296	313	344	361	365	410	290	623	170	287
1923	Normal-Wet	198	120	413	399	353	367	441	537	540	630	556	556
1924	Critical High	227	889	882	766	785	693	699	539	327	924	732	332
1925	Normal-Dry	215	1,032	423	400	338	468	564	496	298	630	678	314
1926	Normal-Dry	215	1,032	423	400	338	468	564	496	298	630	678	314
1927	Normal-Wet	199	120	414	366	324	352	365	336	268	532	540	540
1928	Normal-Dry	198	880	415	409	344	361	365	410	290	623	550	287
1929	Dry	258	664	764	689	755	667	645	568	369	924	732	374
1930	Dry	215	424	423	400	338	468	564	599	572	630	678	615
1931	Critical High	227	889	882	766	785	693	699	539	328	924	732	732
1932	Normal-Wet	193	124	409	390	335	463	551	471	267	630	678	281
1933	Normal-Dry	227	1,247	735	668	747	660	630	539	327	924	732	332
1934	Dry	227	619	735	668	747	660	630	539	327	924	732	332
1935	Normal-Wet	198	120	413	399	353	367	441	447	285	630	556	556
1936	Normal-Wet	198	113	293	399	353	367	441	447	285	630	111	120
1937	Normal-Wet	149	101	103	323	353	367	441	447	285	116	111	113
1938	Wet	110	102	102	101	181	352	365	336	268	532	540	287
1939	Dry	215	424	423	400	338	468	564	496	298	630	678	678
1940	Normal-Wet	198	120	415	409	344	361	365	410	290	339	134	117
1941	Wet	199	120	100	100	324	352	365	336	268	298	134	183
1942	Normal-Wet	199	120	341	228	324	352	365	336	268	532	114	287
1943	Normal-Wet	104	111	178	333	324	352	365	336	268	532	540	540
1944	Normal-Dry	215	1,032	423	400	338	468	564	496	298	630	678	122
1945	Normal-Wet	198	120	413	399	353	367	441	447	285	630	556	287
1946	Normal-Wet	198	120	413	399	353	367	441	447	285	630	556	287
1947	Normal-Dry	215	1,032	423	400	338	468	564	496	298	630	678	678
1948	Normal-Dry	198	890	413	399	353	367	441	447	285	630	556	287
1949	Normal-Dry	215	1,032	423	400	338	468	564	496	298	630	678	314
1950	Normal-Dry	198	890	413	399	353	367	441	447	285	136	113	287
1951	Normal-Wet	198	120	415	409	344	361	365	410	290	623	550	550
1952	Wet	151	112	103	101	281	352	365	336	268	532	540	287
1953	Normal-Dry	199	875	414	371	324	352	365	336	268	532	540	287
1954	Normal-Dry	198	880	415	409	344	361	365	410	290	623	550	287
1955	Normal-Dry	215	1,032	423	400	338	468	564	496	298	119	111	111
1956	Wet	105	113	100	100	324	352	365	336	268	532	540	287
1957	Normal-Dry	198	880	415	409	344	361	365	410	290	623	550	287
1958	Wet	151	118	100	100	324	352	365	336	268	532	540	287
1959	Normal-Dry	198	890	413	399	353	367	441	447	285	630	556	556
1960	Dry	215	424	423	400	338	468	564	599	572	630	678	615
1961	Critical High	215	553	480	440	349	485	610	496	298	630	678	314
1962	Normal-Wet	198	120	413	399	353	367	441	447	285	630	556	287
1963	Normal-Wet	199	120	414	371	324	352	365	336	268	532	540	540
1964	Dry	215	424	423	400	338	468	564	496	298	630	678	314
1965	Normal-Wet	199	120	414	371	324	352	365	336	268	532	540	287
1966	Normal-Dry	198	890	413	399	353	367	441	447	285	630	556	287
1967	Wet	184	109	103	101	102	352	365	336	127	532	540	540
1968	Dry	198	364	413	399	353	367	441	447	285	630	108	109
1969	Wet	104	101	102	102	102	352	365	336	268	532	108	123
1970	Normal-Dry	199	875	414	371	324	352	365	336	268	532	540	287
1971	Normal-Dry	199	875	414	371	324	352	365	336	268	532	540	540
1972	Normal-Dry	198	890	413	399	353	367	441	447	285	630	556	287
1973	Normal-Wet	198	120	222	409	344	361	365	410	290	623	550	287
1974	Normal-Wet	199	116	355	279	324	352	365	336	268	532	540	287
1975	Normal-Wet	199	120	414	371	324	352	365	398	500	532	540	540
1976	Critical High	258	889	882	766	785	693	699	690	742	924	732	760
1977	Critical Low	814	889	882	766	785	693	699	539	388	924	732	116
1978	Wet	105	101	103	100	223	361	365	410	290	623	550	287
1979	Normal-Wet	198	120	386	397	353	367	441	447	285	630	108	108
1980	Wet	103	101	100	100	241	361	365	410	290	623	550	287
1981	Normal-Dry	215	1,032	423	400	338	468	564	496	298	630	678	209
1982	Wet	181	102	103	100	295	352	365	336	110	104	103	106
1983	Wet	103	101	102	102	102	243	244	103	107	107	104	104
1984	Normal-Wet	198	120	414	371	324	352	365	336	268	532	540	287
1985	Normal-Dry	215	1,032	423	400	338	468	564	496	298	630	678	118
1986	Wet	104	101	103	100	322	352	365	336	268	508	515	287
1987	Dry	215	424	423	400	338	468	564	496	298	630	678	678
1988	Dry	258	664	764	689	755	667	645	568	369	924	732	374
1989	Normal-Dry	215	1,032	423	400	338	468	564	496	298	630	678	314
1990	Dry	258	664	764	689	755	667	645	568	369	924	732	374
1991	Normal-Dry	227	1,247	735	668	747	660	630	539	327	924	732	732
1992	Dry	227	619	735	668	747	660	630	539	327	924	732	332
1993	Wet	198	120	100	100	344	361	365	410	290	623	550	287
1994	Dry	227	619	735	668	747	660	630	539	327	924	732	186
1995	Wet	106	102	102	100	103	349	365	336	268	414	540	540
1996	Normal-Wet	142	120	215	370	324	352	365	336	268	132	104	107
1997	Wet	144	120	100	100	324	352	365	336	268	532	528	120
1998	Wet	104	101	102	102	102	351	364	336	263	291	540	287
1999	Normal-Wet	199	120	414	371	324	352	365	336	268	532	540	540
2000	Normal-Wet	198	120	415	409	344	361	365	410	290	623	550	287
2001	Normal-Dry	215	1,032	423	400	338	468	564	496	298	630	678	314
2002	Normal-Dry	215	1,032	423	400	338	468	564	496	298	630	678	314
2003	Normal-Wet	198	120	415	409	344	361	365					
	Average	199	472	394	378	380	427	463	435	303	596	527	339
	Wet	134	108	102	101	231	347	357	336	243	457	433	269
	Normal-Wet	187	118	360	372	339	364	397	401	298	541	433	335
	Normal-Dry	208	982	445	420	374	435	494	458	293	600	582	328
	Dry	227	528	586	539	546	557	590	538	368	777	657	415
	Critical High	232	805	782	684	676	641	677	566	424	851	719	535
	Critical Low	814	889	882	766	785	693	699	539	388	924	732	116
	Dry and Critical	263	614	649	587	591	585	617	544	382	803	676	426

Table 160: Simulated Electrical Conductivity at San Joaquin River at Merced River Confluence (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								821	905	1,022	972	894
1922	Normal-Wet	932	868	652	314	495	496	832	650	987	824	740	774
1923	Normal-Wet	1,158	998	938	878	1,355	535	741	558	874	986	897	897
1924	Critical High	1,261	1,191	1,355	1,747	1,662	1,459	1,293	767	855	885	810	908
1925	Normal-Dry	1,000	766	917	1,250	1,456	1,276	1,232	873	917	996	926	1,094
1926	Normal-Dry	1,331	969	1,081	1,585	1,652	1,391	1,237	845	975	1,126	992	1,035
1927	Normal-Wet	1,140	926	1,240	1,321	1,406	1,240	1,186	711	940	1,028	1,050	1,050
1928	Normal-Dry	1,094	886	1,077	1,166	1,307	1,252	1,198	814	909	979	882	999
1929	Dry	1,230	866	1,418	1,420	1,653	1,348	1,185	841	875	986	996	1,048
1930	Dry	1,114	973	1,267	1,694	1,731	1,485	1,186	840	908	980	914	1,079
1931	Critical High	1,428	1,701	1,517	1,576	1,536	1,570	1,255	790	896	1,042	1,011	1,011
1932	Normal-Wet	1,027	1,073	1,512	1,450	1,483	1,378	1,275	730	820	920	883	1,015
1933	Normal-Dry	1,035	1,010	1,274	1,520	1,639	1,439	1,326	745	816	906	799	987
1934	Dry	1,203	1,045	1,221	1,475	1,556	1,569	1,337	768	887	936	960	1,062
1935	Normal-Wet	962	743	1,059	1,198	1,316	1,207	1,231	746	887	975	949	949
1936	Normal-Wet	891	762	583	1,356	1,413	512	841	510	862	972	1,083	531
1937	Normal-Wet	809	482	351	899	815	515	839	713	895	637	718	532
1938	Wet	522	388	398	319	413	444	745	495	892	1,008	893	946
1939	Dry	973	891	1,057	1,409	1,596	1,296	1,210	817	834	937	1,000	1,000
1940	Normal-Wet	1,138	995	578	1,223	1,388	956	859	658	835	707	667	623
1941	Wet	709	696	427	577	458	457	799	563	869	752	780	667
1942	Normal-Wet	983	917	644	358	462	451	794	629	812	712	599	586
1943	Normal-Wet	615	671	629	985	861	472	806	645	843	919	904	904
1944	Normal-Dry	1,085	873	1,209	1,029	1,332	1,142	1,190	741	841	943	886	660
1945	Normal-Wet	892	903	948	1,310	620	463	856	454	732	509	569	758
1946	Normal-Wet	957	1,042	923	1,129	1,332	1,158	1,197	559	809	687	728	739
1947	Normal-Dry	1,255	1,271	1,451	1,388	1,605	1,275	1,205	785	882	950	880	880
1948	Normal-Dry	1,269	943	1,376	1,282	1,310	1,218	1,176	751	847	965	878	1,039
1949	Normal-Dry	1,067	937	1,275	1,187	1,450	1,176	1,213	776	896	954	941	1,089
1950	Normal-Dry	1,188	938	1,298	1,090	1,351	1,155	1,203	773	857	705	753	624
1951	Normal-Wet	982	866	1,293	1,118	1,298	1,184	1,220	752	881	1,021	696	696
1952	Wet	729	470	314	351	418	402	729	724	891	1,101	697	814
1953	Normal-Dry	1,190	906	972	1,293	1,398	1,162	1,230	737	888	954	935	992
1954	Normal-Dry	1,132	1,006	1,201	1,163	1,337	1,153	1,197	791	888	966	855	1,005
1955	Normal-Dry	1,256	1,059	1,117	1,385	1,453	1,194	1,233	795	899	880	617	617
1956	Wet	1,084	911	630	385	384	409	731	567	859	947	882	1,000
1957	Normal-Dry	1,113	908	1,033	1,095	1,280	1,104	1,197	682	898	970	878	925
1958	Wet	824	343	361	410	446	436	703	637	862	976	923	957
1959	Normal-Dry	1,241	857	974	1,337	1,487	1,189	1,182	799	873	966	895	895
1960	Dry	1,230	902	1,127	1,355	1,505	1,174	1,241	827	931	980	927	1,072
1961	Critical High	1,377	1,321	1,271	1,399	1,604	1,446	1,262	860	952	1,006	945	932
1962	Normal-Wet	787	816	1,084	975	1,180	1,052	1,200	770	890	976	1,039	1,055
1963	Normal-Wet	958	761	897	975	1,154	1,028	1,103	708	915	984	935	935
1964	Dry	1,282	934	1,161	1,291	1,352	1,197	1,203	762	949	1,015	752	1,046
1965	Normal-Wet	1,047	852	888	982	1,136	362	722	645	685	768	643	860
1966	Normal-Dry	1,186	857	925	1,187	1,261	1,085	1,202	819	931	1,093	1,055	1,070
1967	Wet	936	407	357	268	329	366	653	486	886	1,057	939	939
1968	Dry	1,192	792	929	1,200	1,276	1,066	1,136	848	868	988	773	521
1969	Wet	655	392	358	371	416	411	687	485	979	944	574	707
1970	Normal-Dry	809	784	891	1,096	1,169	984	1,112	712	923	1,091	988	1,032
1971	Normal-Dry	1,205	818	900	1,117	1,170	1,039	1,170	739	900	980	1,100	1,100
1972	Normal-Dry	1,420	793	988	1,149	1,192	985	1,279	798	896	941	974	896
1973	Normal-Wet	971	1,035	652	943	775	435	752	469	675	634	700	777
1974	Normal-Wet	753	834	535	837	638	432	745	512	939	965	1,053	598
1975	Normal-Wet	777	823	956	433	542	430	778	387	924	1,009	888	888
1976	Critical High	1,350	858	942	1,186	1,328	1,016	1,130	743	986	1,044	911	1,309
1977	Critical Low	1,603	957	1,006	1,309	1,476	1,423	1,314	788	963	1,034	1,027	731
1978	Wet	839	495	476	338	332	391	495	601	754	923	634	702
1979	Normal-Wet	725	786	676	1,065	1,165	536	840	507	920	976	505	505
1980	Wet	735	632	868	430	353	389	747	522	934	918	896	960
1981	Normal-Dry	977	799	929	1,210	1,339	1,082	1,177	721	898	983	1,044	747
1982	Wet	693	354	325	498	370	382	542	374	477	646	563	498
1983	Wet	457	413	430	320	265	277	560	550	461	604	760	760
1984	Normal-Wet	924	794	916	1,086	1,112	905	1,038	597	966	1,061	827	791
1985	Normal-Dry	1,060	880	1,025	1,160	1,199	1,012	1,175	708	905	990	976	593
1986	Wet	559	429	357	643	597	417	672	581	912	936	915	1,041
1987	Dry	1,117	879	1,066	1,316	1,428	1,149	1,190	746	940	985	945	945
1988	Dry	1,512	1,080	1,098	1,276	1,523	1,316	1,242	870	1,033	1,052	1,007	1,166
1989	Normal-Dry	1,159	1,330	1,706	1,403	1,612	1,401	1,222	802	972	1,037	1,012	1,143
1990	Dry	1,597	1,537	1,308	1,395	1,602	1,402	1,280	882	1,014	1,105	1,013	1,384
1991	Normal-Dry	1,081	1,280	1,339	1,392	1,539	1,416	1,368	789	945	1,026	976	976
1992	Dry	1,156	1,247	1,392	1,390	1,593	1,485	1,368	889	919	988	951	1,070
1993	Wet	1,077	1,572	1,577	734	480	443	716	503	957	1,044	991	1,069
1994	Dry	1,601	1,111	1,431	1,400	1,678	1,323	1,368	832	947	1,010	981	1,040
1995	Wet	605	398	362	288	265	331	798	629	896	1,023	712	712
1996	Normal-Wet	782	771	515	1,145	1,023	495	815	538	689	555	372	676
1997	Wet	708	965	847	1,211	1,378	1,189	1,192	745	961	1,027	698	510
1998	Wet	721	434	452	325	276	358	671	489	919	1,115	707	564
1999	Normal-Wet	1,099	894	858	1,141	1,323	1,024	1,164	862	932	1,050	1,093	1,093
2000	Normal-Wet	769	934	762	1,213	1,316	1,179	1,219	593	785	965	942	1,078
2001	Normal-Dry	1,052	954	1,081	1,204	1,576	1,245	1,271	895	891	1,040	955	1,149
2002	Normal-Dry	1,251	1,033	1,243	1,337	1,530	1,301	1,297	918	988	1,072	1,043	1,165
2003	Normal-Wet	1,403	1,028	1,019	1,358	1,547	1,284	1,251					
	Average	1,037	878	945	1,061	1,147	954	1,052	699	882	943	868	891
	Wet	741	581	534	467	449	444	715	559	844	939	785	803
	Normal-Wet	939	863	844	1,028	1,086	789	972	629	856	874	818	808
	Normal-Dry	1,144	952	1,137	1,251	1,402	1,195	1,221	784	901	980	927	946
	Dry	1,267	1,021	1,206	1,385	1,541	1,317	1,246	827	925	997	935	1,036
	Critical High	1,354	1,268	1,271	1,477	1,532	1,373	1,235	790	922	994	919	1,040
	Critical Low	1,603	957	1,006	1,309	1,476	1,423	1,314	788	963	1,034	1,027	731
	Dry and Critical	1,307	1,076	1,210	1,402	1,535	1,337	1,247	816	927	998	937	1,019

Table 161: Simulated Electrical Conductivity at San Joaquin River at Merced River Confluence (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Normal-Wet								770	780	1,022	972	871
1922	Normal-Wet	742	788	670	313	494	494	820	620	865	825	758	741
1923	Normal-Wet	744	617	885	859	1,344	533	733	558	874	986	897	897
1924	Critical High	749	1,199	1,364	1,747	1,663	1,459	1,293	736	746	885	810	868
1925	Normal-Dry	690	609	865	1,202	1,441	1,261	1,205	825	790	996	926	1,013
1926	Normal-Dry	808	721	1,063	1,486	1,631	1,372	1,210	799	862	1,126	992	999
1927	Normal-Wet	788	625	1,122	1,265	1,393	1,225	1,158	676	834	1,028	1,050	1,050
1928	Normal-Dry	778	585	1,022	1,118	1,295	1,237	1,169	765	786	979	882	920
1929	Dry	796	848	1,334	1,368	1,637	1,334	1,167	806	771	986	996	974
1930	Dry	737	862	1,295	1,505	1,604	1,389	1,155	840	908	980	914	1,079
1931	Critical High	793	1,701	1,518	1,577	1,536	1,570	1,256	755	766	1,042	1,011	1,011
1932	Normal-Wet	701	520	1,267	1,380	1,467	1,358	1,240	694	685	920	883	922
1933	Normal-Dry	677	650	1,181	1,450	1,619	1,417	1,289	715	706	906	799	916
1934	Dry	732	976	1,125	1,398	1,561	1,572	1,306	736	767	936	960	993
1935	Normal-Wet	732	569	987	1,160	1,305	1,194	1,201	713	761	975	949	949
1936	Normal-Wet	681	551	603	1,301	1,117	510	830	503	749	972	1,083	620
1937	Normal-Wet	774	496	437	877	811	513	828	682	790	637	747	578
1938	Wet	541	446	407	327	413	443	736	477	791	1,008	893	884
1939	Dry	689	842	1,021	1,336	1,577	1,280	1,185	781	733	937	1,000	1,000
1940	Normal-Wet	843	562	576	1,175	1,374	916	847	633	721	707	669	728
1941	Wet	631	506	340	407	457	456	788	541	768	753	951	648
1942	Normal-Wet	741	545	636	356	462	450	783	600	732	712	865	573
1943	Normal-Wet	681	573	657	954	940	471	795	616	749	919	904	904
1944	Normal-Dry	770	543	1,142	996	1,319	1,130	1,166	711	753	943	886	837
1945	Normal-Wet	742	564	912	1,002	618	462	844	451	657	509	569	718
1946	Normal-Wet	672	543	938	1,088	1,319	1,145	967	494	716	687	728	703
1947	Normal-Dry	784	539	1,115	1,314	1,585	1,260	1,180	749	767	950	880	880
1948	Normal-Dry	780	695	1,286	1,228	1,298	1,204	1,150	716	735	965	878	952
1949	Normal-Dry	751	639	1,252	1,140	1,434	1,163	1,187	742	778	955	941	1,020
1950	Normal-Dry	753	597	1,301	1,050	1,338	1,142	1,175	734	788	1,299	938	606
1951	Normal-Wet	695	518	1,098	1,076	1,287	1,171	1,189	713	762	1,021	665	665
1952	Wet	736	417	362	373	417	402	720	682	785	1,101	697	767
1953	Normal-Dry	754	563	930	1,237	1,384	1,149	1,199	694	766	954	935	920
1954	Normal-Dry	754	766	1,154	1,117	1,324	1,140	1,168	746	769	966	855	926
1955	Normal-Dry	784	790	1,122	1,316	1,438	1,181	1,206	758	779	1,131	636	636
1956	Wet	861	508	398	291	384	408	722	548	752	947	882	921
1957	Normal-Dry	727	558	1,007	1,057	1,268	1,092	1,168	654	776	970	878	880
1958	Wet	813	307	321	420	445	435	696	609	744	976	923	900
1959	Normal-Dry	772	494	940	1,267	1,471	1,176	1,156	756	755	966	895	895
1960	Dry	777	841	1,137	1,288	1,489	1,163	1,219	827	931	980	927	1,072
1961	Critical High	823	1,321	1,271	1,399	1,604	1,446	1,262	814	813	1,006	945	909
1962	Normal-Wet	635	437	887	947	1,171	1,042	1,173	733	767	976	1,039	1,026
1963	Normal-Wet	673	555	870	948	1,146	1,019	1,079	672	803	984	935	935
1964	Dry	793	885	1,116	1,231	1,339	1,184	1,178	730	827	1,015	875	980
1965	Normal-Wet	704	553	871	954	1,119	362	714	616	638	768	643	813
1966	Normal-Dry	753	510	893	1,135	1,250	1,074	1,174	773	801	1,093	1,055	999
1967	Wet	838	394	360	310	329	366	647	475	740	1,057	939	939
1968	Dry	756	740	897	1,147	1,265	1,056	1,112	797	758	988	928	567
1969	Wet	693	391	349	417	417	410	680	469	852	944	606	670
1970	Normal-Dry	645	504	864	1,056	1,159	975	1,088	673	784	1,091	988	949
1971	Normal-Dry	760	506	866	1,076	1,160	1,029	1,143	695	776	980	1,100	1,100
1972	Normal-Dry	827	502	1,019	1,101	1,182	977	1,247	756	785	941	974	871
1973	Normal-Wet	791	556	593	1,114	772	434	743	463	616	634	874	736
1974	Normal-Wet	621	592	451	990	636	431	736	497	808	965	1,053	584
1975	Normal-Wet	632	577	899	400	541	428	768	387	922	1,009	888	888
1976	Critical High	836	854	938	1,186	1,328	1,016	1,130	743	986	1,044	911	1,309
1977	Critical Low	1,603	958	1,003	1,309	1,476	1,423	1,314	753	860	1,034	1,027	910
1978	Wet	915	566	491	290	331	391	492	582	675	922	634	687
1979	Normal-Wet	637	538	561	1,029	1,156	534	829	500	790	976	602	602
1980	Wet	790	676	654	287	353	388	738	511	814	918	896	888
1981	Normal-Dry	681	505	899	1,155	1,326	1,071	1,153	696	785	983	1,044	938
1982	Wet	664	357	366	435	370	382	539	372	568	678	575	545
1983	Wet	448	417	442	326	265	277	555	531	487	653	832	832
1984	Normal-Wet	658	489	843	1,045	1,104	898	1,018	464	821	1,061	827	749
1985	Normal-Dry	715	607	962	1,111	1,189	1,003	1,151	684	788	990	976	660
1986	Wet	587	444	378	548	595	416	665	560	795	936	915	955
1987	Dry	737	834	998	1,254	1,414	1,139	1,170	719	806	985	945	945
1988	Dry	884	1,073	1,101	1,232	1,509	1,303	1,222	830	882	1,052	1,007	1,064
1989	Normal-Dry	753	939	1,578	1,325	1,591	1,383	1,200	766	826	1,037	1,012	1,038
1990	Dry	907	1,384	1,264	1,338	1,587	1,387	1,258	841	866	1,105	1,013	1,231
1991	Normal-Dry	789	947	1,290	1,332	1,523	1,399	1,335	755	791	1,026	976	976
1992	Dry	718	1,160	1,329	1,322	1,576	1,465	1,335	835	775	988	951	1,020
1993	Wet	819	664	582	433	479	442	708	495	832	1,044	991	978
1994	Dry	834	1,052	1,376	1,340	1,683	1,309	1,336	790	801	1,010	985	1,536
1995	Wet	569	433	423	280	265	330	788	596	781	1,023	712	712
1996	Normal-Wet	745	500	635	1,100	1,016	494	804	521	661	675	376	705
1997	Wet	558	501	470	477	1,364	1,087	776	684	822	1,027	704	587
1998	Wet	683	448	515	378	276	358	664	471	809	1,115	707	549
1999	Normal-Wet	723	521	860	1,097	1,311	1,014	1,138	802	783	1,050	1,093	1,093
2000	Normal-Wet	627	514	686	1,162	1,303	1,167	1,082	569	687	965	942	994
2001	Normal-Dry	729	598	1,035	1,149	1,557	1,231	1,242	841	774	1,040	955	1,047
2002	Normal-Dry	784	554	1,198	1,267	1,512	1,285	1,265	859	845	1,072	1,043	1,056
2003	Normal-Wet	821	467	891	1,291	1,530	1,268	1,218					
	Average	745	655	887	1,007	1,135	944	1,024	668	777	956	884	878
	Wet	697	467	429	375	447	437	682	538	751	944	804	779
	Normal-Wet	712	551	793	995	1,069	781	942	598	759	879	840	802
	Normal-Dry	751	622	1,082	1,195	1,387	1,181	1,193	744	782	1,015	935	918
	Dry	780	958	1,166	1,313	1,520	1,298	1,220	794	819	997	958	1,039
	Critical High	800	1,268	1,273	1,477	1,533	1,373	1,235	762	828	994	919	1,024
	Critical Low	1,603	958	1,003	1,309	1,476	1,423	1,314	753	860	1,034	1,027	910
	Dry and Critical	833	1,031	1,182	1,352	1,520	1,323	1,229	784	823	998	953	1,028

Table 162: Simulated Electrical Conductivity at San Joaquin River at Tuolumne River Confluence (umhos/cm) - No-Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								678	729	895	912	789
1922	Wet	835	419	529	267	533	586	668	629	743	759	591	552
1923	Above Normal	1,022	453	673	835	1,014	613	625	596	731	907	872	872
1924	Critical	1,170	968	1,004	1,256	1,191	1,128	992	846	783	946	933	921
1925	Below Normal	1,120	584	652	1,042	1,120	950	874	773	784	971	976	1,076
1926	Dry	1,316	746	783	1,129	1,066	963	878	797	794	1,021	1,002	909
1927	Above Normal	1,155	617	701	916	987	828	782	642	717	928	972	972
1928	Below Normal	520	555	753	1,027	1,066	960	868	767	789	960	947	1,043
1929	Critical	1,205	776	904	1,182	1,290	1,153	945	859	788	972	948	1,057
1930	Critical	1,175	817	869	1,213	1,309	1,179	947	866	804	973	959	1,096
1931	Critical	1,324	984	1,018	1,233	1,257	1,134	982	870	816	926	927	927
1932	Above Normal	1,171	674	773	929	1,074	835	802	678	722	896	875	1,024
1933	Dry	1,077	744	810	1,045	1,059	973	899	785	782	958	934	1,053
1934	Critical	1,249	874	960	1,204	1,197	1,131	1,002	851	802	956	891	1,056
1935	Above Normal	987	553	669	895	941	804	779	655	729	914	908	908
1936	Above Normal	394	402	539	946	927	598	670	563	706	910	916	421
1937	Wet	449	319	332	841	825	600	669	647	704	530	599	390
1938	Wet	385	287	307	288	405	537	631	502	690	927	923	868
1939	Dry	753	661	726	1,052	1,055	953	860	774	757	951	876	876
1940	Above Normal	432	392	588	877	881	792	694	661	734	699	624	438
1941	Wet	381	325	400	580	465	538	663	590	706	751	497	375
1942	Wet	505	364	326	405	428	523	623	599	655	801	423	344
1943	Wet	394	361	546	573	677	589	705	622	697	882	880	880
1944	Below Normal	894	572	704	909	1,017	917	893	737	746	995	960	535
1945	Above Normal	420	464	657	991	721	559	683	544	696	412	504	441
1946	Above Normal	466	508	592	838	870	781	776	613	688	750	849	837
1947	Dry	1,151	817	883	1,087	1,118	983	903	770	790	979	959	959
1948	Below Normal	1,208	706	805	881	951	919	892	745	771	975	888	1,057
1949	Below Normal	967	751	817	1,018	1,065	954	906	752	776	948	840	1,056
1950	Below Normal	1,158	641	750	896	1,009	931	882	748	807	477	478	320
1951	Above Normal	499	483	789	1,023	982	917	890	774	810	944	620	620
1952	Wet	502	276	241	330	389	506	619	665	745	989	737	722
1953	Below Normal	1,100	570	627	1,063	958	883	874	769	814	979	954	1,065
1954	Below Normal	1,167	712	775	983	1,019	926	882	784	818	967	810	1,114
1955	Dry	1,204	769	802	1,068	1,082	966	914	823	815	839	401	401
1956	Wet	463	467	557	394	412	507	627	608	750	944	924	1,009
1957	Below Normal	1,032	564	613	965	995	896	862	725	829	973	887	801
1958	Wet	536	237	240	338	438	515	595	623	763	923	906	824
1959	Dry	846	641	712	1,060	1,059	982	870	787	820	1,025	950	950
1960	Critical	1,230	790	838	1,242	1,261	1,118	980	937	856	1,039	977	1,138
1961	Critical	1,296	1,013	1,032	1,329	1,349	1,254	1,065	955	875	1,022	966	779
1962	Below Normal	840	573	642	931	1,005	893	861	771	880	1,048	994	961
1963	Above Normal	1,215	565	676	905	908	814	779	710	807	1,010	973	973
1964	Dry	1,190	775	864	1,122	1,151	1,064	944	828	893	1,011	506	425
1965	Wet	494	425	647	943	902	476	587	685	601	580	699	584
1966	Below Normal	900	657	725	1,117	1,143	1,042	969	838	893	1,016	979	1,134
1967	Wet	692	299	273	261	288	474	568	583	799	1,003	985	985
1968	Dry	979	637	687	1,037	1,030	948	887	840	812	1,033	694	421
1969	Wet	519	310	278	278	380	538	621	448	701	759	339	448
1970	Above Normal	432	568	613	941	1,024	872	816	677	786	935	975	1,117
1971	Below Normal	908	579	614	963	1,025	896	864	767	856	918	1,050	1,050
1972	Dry	1,384	697	757	1,053	1,088	955	964	892	779	899	896	757
1973	Above Normal	849	624	570	689	794	554	649	581	576	549	489	607
1974	Wet	359	451	482	460	663	576	608	495	595	842	984	398
1975	Wet	376	458	580	439	572	545	625	387	668	922	928	928
1976	Critical	1,211	841	903	1,210	1,377	1,150	956	944	904	1,033	1,010	1,290
1977	Critical	1,497	960	1,045	1,362	1,537	1,468	1,184	991	959	1,063	899	694
1978	Wet	796	451	425	354	532	526	505	749	650	920	634	394
1979	Above Normal	370	481	284	915	870	603	684	606	673	794	400	400
1980	Wet	528	422	512	352	382	517	587	590	682	913	817	994
1981	Dry	946	600	717	1,103	1,111	929	886	765	804	896	891	372
1982	Wet	393	251	236	370	381	490	325	224	329	465	436	395
1983	Wet	303	329	308	282	247	225	350	458	274	384	487	487
1984	Above Normal	447	606	618	930	927	779	786	634	648	1,040	951	881
1985	Dry	1,043	732	746	952	1,105	957	915	842	864	1,052	1,105	512
1986	Wet	384	320	269	447	722	552	598	509	541	886	877	1,027
1987	Critical	1,051	830	901	1,244	1,327	1,223	1,064	1,002	923	1,082	1,040	1,040
1988	Critical	1,442	980	1,011	1,378	1,536	1,441	1,137	1,014	1,014	1,121	1,139	1,308
1989	Critical	1,206	1,009	998	1,360	1,526	1,469	1,087	1,028	940	1,125	1,126	1,265
1990	Critical	1,502	977	999	1,370	1,402	1,297	1,098	1,067	960	1,161	1,135	1,436
1991	Critical	1,065	997	920	1,511	1,563	1,412	1,188	1,018	951	1,128	1,108	1,108
1992	Critical	1,309	997	978	1,287	1,392	1,359	1,186	1,051	959	1,086	793	962
1993	Wet	1,085	776	670	421	467	583	674	599	802	989	981	1,083
1994	Critical	1,458	952	1,137	1,402	1,560	1,336	1,216	1,074	987	1,109	847	1,018
1995	Wet	376	277	234	288	235	326	606	645	803	1,048	798	798
1996	Wet	392	436	377	490	825	607	691	641	591	379	271	505
1997	Wet	378	632	670	1,036	1,009	932	877	697	890	1,041	656	370
1998	Wet	429	329	314	252	255	503	611	518	780	988	557	275
1999	Above Normal	427	507	659	1,005	1,027	867	831	781	837	1,076	1,070	1,070
2000	Above Normal	372	461	577	692	988	750	753	625	763	1,063	1,014	1,136
2001	Dry	781	713	798	1,066	1,195	1,079	999	960	927	1,012	1,032	1,302
2002	Dry	1,364	837	831	1,110	1,150	1,024	986	914	948	1,077	1,143	1,318
2003	Below Normal	1,485	730	725	1,191	1,300	1,123	999					
	Average	858	609	665	886	944	854	819	732	773	915	838	826
	Wet	498	384	406	445	518	532	610	571	673	818	705	652
	Above Normal	666	522	624	895	933	748	750	648	727	866	819	795
	Below Normal	1,023	630	708	999	1,052	945	894	765	814	936	897	934
	Dry	1,080	721	778	1,068	1,097	983	916	829	830	981	876	789
	Critical	1,274	923	970	1,299	1,380	1,266	1,064	961	895	1,046	981	1,068
	Dry and Critical	1,187	832	884	1,195	1,253	1,139	998	902	866	1,017	934	943

Table 163: Simulated Electrical Conductivity at San Joaquin River at Tuolumne River Confluence (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								667	673	895	912	773
1922	Wet	696	408	536	267	533	585	664	616	687	760	598	542
1923	Above Normal	803	394	670	826	1,013	612	622	596	731	907	872	872
1924	Critical	877	971	1,006	1,256	1,191	1,128	992	824	717	946	933	887
1925	Below Normal	842	469	641	1,029	1,120	950	869	759	718	971	976	1,018
1926	Dry	955	597	779	1,128	1,069	964	873	779	733	1,021	1,002	884
1927	Above Normal	878	496	699	910	987	828	778	628	666	928	972	972
1928	Below Normal	454	465	744	1,013	1,064	959	861	749	720	960	947	983
1929	Critical	894	773	923	1,175	1,292	1,152	942	841	731	972	948	1,004
1930	Critical	871	796	872	1,220	1,325	1,180	937	866	804	973	959	1,096
1931	Critical	932	984	1,017	1,233	1,257	1,134	982	846	740	926	927	927
1932	Above Normal	871	480	754	927	1,074	838	800	668	656	896	875	964
1933	Dry	815	566	803	1,046	1,063	975	895	769	716	958	934	995
1934	Critical	887	895	943	1,210	1,197	1,131	998	829	732	956	891	1,004
1935	Above Normal	785	457	660	888	940	804	776	646	667	914	908	908
1936	Above Normal	364	363	545	939	902	597	667	558	653	910	916	468
1937	Wet	442	323	389	831	823	599	665	637	654	530	614	411
1938	Wet	394	309	312	293	404	536	627	493	644	927	923	835
1939	Dry	645	651	716	1,045	1,057	953	854	759	697	951	876	876
1940	Above Normal	405	350	585	872	881	783	690	649	672	699	626	480
1941	Wet	366	296	334	452	465	537	659	577	654	753	541	371
1942	Wet	464	325	326	404	428	523	620	588	614	801	517	342
1943	Wet	415	344	562	572	691	588	700	610	649	882	880	880
1944	Below Normal	737	438	699	898	1,016	916	887	723	691	995	960	631
1945	Above Normal	398	424	647	901	720	558	679	539	643	400	504	437
1946	Above Normal	432	440	591	833	870	781	721	571	636	750	849	806
1947	Dry	885	548	798	1,078	1,120	982	897	753	721	979	959	959
1948	Below Normal	868	553	800	877	950	918	885	728	705	975	888	996
1949	Below Normal	773	578	814	1,004	1,063	952	900	738	711	948	840	1,004
1950	Below Normal	848	483	759	888	1,008	930	874	731	750	640	527	319
1951	Above Normal	457	402	775	1,008	981	916	882	753	732	944	597	597
1952	Wet	506	264	259	341	389	505	616	649	685	989	737	701
1953	Below Normal	842	412	622	1,048	958	882	867	745	735	979	954	1,005
1954	Below Normal	868	565	769	971	1,018	924	874	763	741	967	810	1,043
1955	Dry	880	594	801	1,059	1,082	964	907	802	739	1,056	406	406
1956	Wet	433	418	418	335	412	506	624	596	687	944	924	955
1957	Below Normal	837	413	608	952	994	895	855	708	752	973	887	774
1958	Wet	531	225	228	341	438	515	592	611	699	923	906	795
1959	Dry	708	468	703	1,051	1,060	981	862	768	743	1,025	950	950
1960	Critical	900	772	838	1,223	1,260	1,115	974	937	856	1,039	977	1,138
1961	Critical	915	1,013	1,031	1,329	1,348	1,254	1,064	920	782	1,022	966	765
1962	Below Normal	701	403	620	918	1,003	891	855	752	787	1,048	994	941
1963	Above Normal	881	457	671	893	907	812	773	691	733	1,010	973	973
1964	Dry	889	763	850	1,104	1,148	1,061	936	806	802	1,011	543	422
1965	Wet	456	372	641	928	899	476	584	669	570	580	699	573
1966	Below Normal	732	471	716	1,097	1,140	1,038	959	814	795	1,016	979	1,070
1967	Wet	643	293	274	281	288	474	565	573	707	1,003	985	985
1968	Dry	775	625	678	1,023	1,028	945	879	815	736	1,033	810	447
1969	Wet	540	309	274	296	380	537	617	442	651	759	347	438
1970	Above Normal	403	426	608	927	1,023	870	809	661	708	935	975	1,049
1971	Below Normal	732	422	607	949	1,022	893	856	744	768	918	1,050	1,050
1972	Dry	976	519	747	1,036	1,085	952	955	862	714	899	896	741
1973	Above Normal	722	466	530	825	792	553	645	573	523	549	542	593
1974	Wet	343	405	450	442	662	575	605	489	561	842	984	402
1975	Wet	355	421	574	410	571	544	622	387	667	922	928	928
1976	Critical	930	839	901	1,210	1,377	1,150	956	944	904	1,033	1,010	1,290
1977	Critical	1,497	960	1,044	1,362	1,537	1,468	1,184	948	883	1,063	899	846
1978	Wet	861	504	435	320	531	525	503	729	609	920	634	391
1979	Above Normal	357	432	275	904	869	602	680	598	626	794	454	454
1980	Wet	552	434	460	305	382	516	584	582	637	913	817	943
1981	Dry	751	475	707	1,086	1,109	927	880	749	734	896	879	401
1982	Wet	388	252	249	351	381	489	325	225	360	479	442	420
1983	Wet	300	331	312	286	247	225	349	449	280	400	511	511
1984	Above Normal	417	475	615	919	926	778	780	555	604	1,040	951	845
1985	Dry	804	554	746	942	1,102	954	909	820	782	1,052	1,105	551
1986	Wet	394	326	276	421	721	551	595	503	516	886	877	970
1987	Critical	809	812	884	1,222	1,325	1,219	1,055	962	821	1,082	1,040	1,040
1988	Critical	994	970	1,011	1,351	1,533	1,436	1,127	973	895	1,121	1,139	1,212
1989	Critical	864	697	1,013	1,333	1,524	1,464	1,075	982	832	1,125	1,126	1,171
1990	Critical	1,018	992	997	1,350	1,403	1,296	1,090	1,022	856	1,161	1,135	1,313
1991	Critical	833	696	923	1,478	1,560	1,410	1,177	972	834	1,128	1,108	1,108
1992	Critical	890	973	985	1,278	1,392	1,359	1,175	1,001	839	1,086	793	926
1993	Wet	853	513	482	353	466	582	669	591	732	989	981	1,017
1994	Critical	1,005	941	1,126	1,382	1,562	1,334	1,204	1,023	862	1,109	850	1,469
1995	Wet	365	289	248	283	235	326	603	630	733	1,048	798	798
1996	Wet	386	382	410	492	823	605	687	628	574	421	272	519
1997	Wet	352	457	482	623	1,009	920	713	674	793	1,041	660	397
1998	Wet	418	335	335	272	255	502	608	508	716	988	557	274
1999	Above Normal	403	450	652	992	1,026	865	825	760	749	1,076	1,070	1,070
2000	Above Normal	352	410	501	658	987	750	730	609	697	1,063	1,014	1,067
2001	Dry	669	560	793	1,051	1,195	1,077	991	927	825	1,012	1,032	1,203
2002	Dry	944	557	844	1,097	1,149	1,022	978	886	839	1,077	1,143	1,212
2003	Below Normal	987	459	695	1,172	1,297	1,120	988					
	Average	688	526	654	869	943	853	811	714	710	921	844	815
	Wet	477	356	386	412	518	531	600	561	628	821	714	642
	Above Normal	558	433	611	889	931	747	741	631	669	865	824	784
	Below Normal	786	471	700	986	1,050	944	887	746	739	949	901	903
	Dry	823	575	767	1,057	1,097	981	909	807	752	998	887	773
	Critical	945	880	970	1,288	1,380	1,264	1,058	931	818	1,046	981	1,075
	Dry and Critical	890	743	879	1,185	1,253	1,138	991	875	789	1,024	939	939

Table 164: Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								684	649	765	798	647
1922	Wet	551	349	351	335	530	515	520	554	572	653	563	540
1923	Above Normal	737	365	376	559	633	528	495	521	578	787	821	821
1924	Critical	1,008	656	662	698	667	644	623	669	654	815	898	904
1925	Below Normal	951	418	420	654	671	616	582	616	632	821	861	1,000
1926	Dry	1,001	526	547	699	679	626	587	641	605	815	853	767
1927	Above Normal	795	402	392	647	663	586	552	538	541	773	779	779
1928	Below Normal	494	414	456	678	672	612	576	591	618	814	821	1,000
1929	Critical	1,000	581	589	698	679	637	598	659	660	864	898	1,000
1930	Critical	1,000	576	589	698	677	635	593	656	654	856	904	1,000
1931	Critical	1,005	693	694	698	673	644	622	685	692	749	845	845
1932	Above Normal	900	542	507	667	656	600	573	600	618	832	871	1,000
1933	Dry	1,000	581	585	692	672	626	601	645	674	829	881	1,001
1934	Critical	1,001	676	661	696	667	644	624	682	685	851	811	1,023
1935	Above Normal	882	398	409	641	626	599	566	585	619	837	841	841
1936	Above Normal	329	356	412	593	643	528	525	540	593	793	762	403
1937	Wet	376	275	264	592	633	528	524	556	553	520	549	368
1938	Wet	328	249	256	249	382	348	346	418	511	736	759	838
1939	Dry	802	476	507	698	673	617	569	594	637	835	722	722
1940	Above Normal	327	330	378	531	636	583	524	549	579	645	621	409
1941	Wet	306	261	271	466	485	479	504	507	523	653	443	293
1942	Wet	419	313	278	411	463	363	357	490	497	658	336	263
1943	Wet	303	293	373	452	615	508	517	526	529	723	750	750
1944	Below Normal	792	405	466	643	657	609	585	584	592	785	776	495
1945	Above Normal	347	382	370	502	600	495	511	492	553	492	564	456
1946	Above Normal	496	385	375	534	651	578	547	532	557	710	744	844
1947	Dry	1,000	563	575	679	688	639	599	616	628	807	849	849
1948	Below Normal	1,000	542	551	624	638	613	592	615	635	821	865	1,000
1949	Below Normal	952	588	604	648	678	629	603	635	630	807	845	1,000
1950	Below Normal	991	497	448	587	669	625	586	618	627	377	320	249
1951	Above Normal	446	387	252	525	662	614	588	587	616	757	549	549
1952	Wet	422	224	200	300	383	345	360	539	548	730	603	635
1953	Below Normal	912	346	345	521	612	601	572	579	622	792	803	949
1954	Below Normal	979	491	487	662	675	626	601	615	639	780	759	1,000
1955	Dry	1,000	579	598	697	698	650	610	658	663	699	356	356
1956	Wet	363	381	374	406	488	470	425	509	571	762	773	901
1957	Below Normal	944	353	360	559	650	602	569	564	621	783	782	726
1958	Wet	465	203	193	327	431	354	359	521	561	725	747	713
1959	Dry	838	441	482	689	681	631	573	614	663	827	834	834
1960	Critical	1,000	572	583	698	692	666	635	698	687	842	911	1,030
1961	Critical	1,000	657	662	698	698	691	659	717	698	835	948	723
1962	Below Normal	733	487	485	693	663	616	588	633	681	839	856	837
1963	Above Normal	941	427	423	590	638	591	559	588	609	834	821	821
1964	Dry	1,000	579	587	698	687	647	610	648	669	750	455	389
1965	Wet	515	347	346	475	640	450	477	542	459	616	644	601
1966	Below Normal	877	470	509	698	696	653	623	628	690	759	752	922
1967	Wet	543	258	224	287	298	335	343	496	578	745	755	755
1968	Dry	925	425	454	684	688	628	597	614	647	799	640	367
1969	Wet	401	273	243	242	381	357	365	408	508	629	268	336
1970	Above Normal	365	353	398	476	644	600	552	545	613	784	760	934
1971	Below Normal	843	354	371	554	623	604	572	549	639	808	817	817
1972	Dry	1,000	525	542	698	692	640	620	634	628	808	810	681
1973	Above Normal	609	421	438	514	653	520	511	500	515	620	521	614
1974	Wet	308	367	391	439	587	490	466	428	488	718	727	327
1975	Wet	315	377	371	430	576	483	503	424	514	775	771	771
1976	Critical	999	565	578	698	699	637	627	658	675	831	886	1,000
1977	Critical	1,000	631	634	699	685	718	726	762	755	871	756	653
1978	Wet	677	379	321	401	554	486	446	587	519	763	670	357
1979	Above Normal	320	387	300	440	658	527	535	516	562	782	382	382
1980	Wet	396	354	363	385	463	458	492	478	510	741	745	912
1981	Dry	863	459	452	697	664	639	602	586	637	797	712	278
1982	Wet	302	223	207	366	418	338	246	202	266	381	338	322
1983	Wet	253	281	269	238	222	185	233	352	203	302	339	339
1984	Above Normal	365	362	359	525	633	525	455	446	498	790	771	833
1985	Dry	886	505	506	689	699	610	562	579	587	777	821	442
1986	Wet	305	241	222	405	608	484	440	433	443	729	774	996
1987	Critical	911	552	566	698	698	659	624	648	665	829	872	872
1988	Critical	1,005	636	643	699	698	711	661	745	702	841	937	1,185
1989	Critical	1,001	617	620	697	656	662	595	694	693	849	949	1,169
1990	Critical	1,000	637	654	699	682	683	660	698	686	868	994	1,282
1991	Critical	981	656	650	699	691	693	696	736	730	903	1,023	1,023
1992	Critical	1,000	697	851	712	675	707	719	799	797	919	670	752
1993	Wet	843	551	568	473	568	541	511	574	613	847	961	1,000
1994	Critical	1,008	616	641	751	703	707	683	758	737	889	705	825
1995	Wet	348	250	208	324	258	337	480	507	534	763	748	748
1996	Wet	321	359	314	449	637	512	499	507	438	312	238	309
1997	Wet	234	330	361	542	643	567	520	530	618	792	643	335
1998	Wet	335	281	274	242	253	299	323	357	480	663	535	218
1999	Above Normal	404	378	348	465	664	566	534	545	597	807	769	769
2000	Above Normal	322	389	386	555	669	583	520	507	555	784	773	942
2001	Dry	729	539	543	699	698	655	603	642	656	808	787	1,001
2002	Dry	1,000	547	585	698	698	646	615	698	701	835	906	1,001
2003	Below Normal	1,000	513	540	699	692	643	618					
	Average	703	443	447	567	613	565	543	578	599	755	728	727
	Wet	401	309	302	385	480	426	427	477	502	664	612	568
	Above Normal	537	392	383	548	646	564	534	546	580	752	714	708
	Below Normal	882	452	465	632	661	619	590	602	635	766	771	833
	Dry	926	519	536	694	686	635	596	628	646	799	740	668
	Critical	995	626	642	702	684	671	646	704	698	851	876	955
	Dry and Critical	964	578	595	698	685	655	624	670	675	828	815	827

Table 165: Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								676	615	765	798	637
1922	Wet	496	342	354	335	530	514	518	549	546	654	568	532
1923	Above Normal	772	336	378	558	633	528	494	521	573	777	821	821
1924	Critical	990	654	661	698	667	644	623	665	621	815	898	876
1925	Below Normal	785	372	418	655	673	617	583	609	591	802	852	988
1926	Dry	936	468	548	699	682	628	588	637	579	814	852	750
1927	Above Normal	688	362	380	644	664	587	550	533	514	765	776	776
1928	Below Normal	446	377	446	676	673	613	576	587	586	812	819	977
1929	Critical	918	585	599	698	683	639	601	657	633	864	897	999
1930	Critical	869	581	584	699	698	646	595	656	654	856	903	1,000
1931	Critical	1,002	690	692	698	673	644	622	679	650	747	844	844
1932	Above Normal	758	443	496	671	658	602	574	596	593	848	870	999
1933	Dry	896	537	592	698	675	628	604	641	636	822	880	999
1934	Critical	959	678	663	698	667	644	628	675	640	841	809	980
1935	Above Normal	740	358	410	641	627	600	566	581	580	830	840	840
1936	Above Normal	312	327	409	596	652	527	524	533	562	789	754	444
1937	Wet	372	275	286	590	633	528	523	552	528	519	559	385
1938	Wet	329	263	259	251	382	348	346	414	494	736	759	814
1939	Dry	704	478	507	699	675	619	569	592	606	835	722	722
1940	Above Normal	317	310	379	542	637	582	523	546	552	645	622	443
1941	Wet	299	246	248	401	484	478	503	501	503	654	470	291
1942	Wet	398	291	278	410	463	363	357	487	479	658	384	263
1943	Wet	312	284	376	453	622	508	516	522	510	723	750	750
1944	Below Normal	695	365	468	643	658	610	586	581	567	785	776	573
1945	Above Normal	335	364	370	541	600	494	510	490	526	478	564	452
1946	Above Normal	464	367	375	533	651	578	534	512	526	703	743	819
1947	Dry	915	485	551	686	690	640	600	611	610	829	847	847
1948	Below Normal	881	461	548	627	639	614	592	608	602	818	860	990
1949	Below Normal	796	536	605	651	680	630	604	631	599	807	844	964
1950	Below Normal	801	420	454	588	670	625	586	610	597	444	335	249
1951	Above Normal	422	359	258	536	663	615	588	582	577	750	531	531
1952	Wet	423	217	210	306	383	345	360	534	524	730	603	624
1953	Below Normal	820	322	347	525	613	602	572	573	587	788	803	949
1954	Below Normal	808	437	482	660	676	627	599	610	604	779	758	981
1955	Dry	868	513	597	698	698	651	611	652	625	837	359	359
1956	Wet	348	362	329	361	488	469	384	502	536	747	773	904
1957	Below Normal	831	330	361	561	651	603	569	560	591	783	782	708
1958	Wet	462	196	186	328	431	354	359	517	539	725	747	697
1959	Dry	736	394	481	696	683	632	572	610	627	827	834	834
1960	Critical	931	576	582	698	695	668	638	698	687	842	911	1,000
1961	Critical	939	656	662	698	698	691	659	710	652	835	948	711
1962	Below Normal	645	388	473	691	663	616	588	628	649	851	855	824
1963	Above Normal	774	377	422	589	638	591	558	579	569	821	817	817
1964	Dry	923	581	584	698	689	648	611	643	630	750	481	387
1965	Wet	482	320	347	482	640	450	476	537	445	615	643	591
1966	Below Normal	752	393	486	698	697	654	622	624	643	757	750	887
1967	Wet	517	254	225	306	294	335	343	493	539	745	755	755
1968	Dry	783	428	453	687	689	629	596	610	611	799	736	385
1969	Wet	412	273	240	254	381	357	365	406	489	629	271	332
1970	Above Normal	350	332	399	487	644	600	551	541	576	784	760	900
1971	Below Normal	726	329	371	567	623	604	571	544	603	808	816	816
1972	Dry	895	459	541	698	693	640	620	627	595	807	809	669
1973	Above Normal	549	367	415	498	651	519	510	497	485	624	572	602
1974	Wet	302	345	378	428	587	490	456	422	467	711	740	330
1975	Wet	304	360	373	410	575	482	502	424	510	765	771	771
1976	Critical	924	566	578	698	699	637	627	659	675	831	887	1,000
1977	Critical	1,000	631	635	699	685	718	726	752	722	870	756	783
1978	Wet	722	412	326	365	554	486	445	582	502	762	670	355
1979	Above Normal	312	366	292	442	658	526	534	514	532	769	429	429
1980	Wet	408	360	345	344	462	458	491	476	494	741	745	880
1981	Dry	735	410	452	698	665	639	602	583	604	797	705	291
1982	Wet	301	223	215	352	418	338	246	203	282	390	341	336
1983	Wet	251	282	272	240	222	185	233	348	205	310	348	348
1984	Above Normal	353	346	361	527	633	525	455	423	478	784	771	809
1985	Dry	751	442	510	690	699	610	563	576	561	773	821	469
1986	Wet	311	244	226	389	607	483	439	431	432	729	774	953
1987	Critical	767	554	571	699	698	660	626	644	623	823	872	872
1988	Critical	1,001	643	647	699	698	699	664	730	663	841	937	1,095
1989	Critical	943	579	627	697	662	665	596	687	650	849	949	998
1990	Critical	997	649	656	699	688	686	663	693	652	866	992	1,204
1991	Critical	808	625	652	699	697	697	701	726	681	899	1,020	1,020
1992	Critical	930	698	695	710	683	712	725	785	730	915	670	732
1993	Wet	713	452	474	400	568	541	509	568	579	844	958	998
1994	Critical	1,004	622	643	700	703	710	688	747	682	883	707	1,078
1995	Wet	338	257	217	318	258	337	478	500	513	760	746	746
1996	Wet	318	334	330	451	636	511	498	503	433	336	239	313
1997	Wet	231	321	341	476	644	571	487	524	572	776	646	353
1998	Wet	329	285	288	259	253	299	323	355	465	663	535	218
1999	Above Normal	388	362	349	473	665	566	534	542	559	796	769	769
2000	Above Normal	308	366	368	541	670	583	517	501	527	775	773	906
2001	Dry	653	473	547	699	698	656	604	639	617	805	788	999
2002	Dry	867	495	587	698	698	647	616	692	654	834	904	999
2003	Below Normal	898	418	520	699	694	644	617					
	Average	643	418	442	563	615	565	542	573	570	756	732	724
	Wet	391	300	297	371	480	426	423	473	483	663	617	564
	Above Normal	490	359	379	551	646	564	533	539	549	747	718	706
	Below Normal	760	396	460	634	662	620	590	597	601	770	771	825
	Dry	820	474	535	696	687	636	597	624	612	810	749	670
	Critical	936	624	634	699	687	672	649	698	664	849	875	950
	Dry and Critical	884	557	590	698	687	656	625	665	640	831	819	824

Table 166: Simulated San Luis Storage (TAF) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								538	617	1,010	1,579	1,921
1922	Wet	2,039	2,039	1,892	1,556	1,256	1,041	1,089	1,134	1,381	1,686	1,905	1,975
1923	Above Normal	2,024	1,976	1,646	1,142	872	680	719	817	883	1,016	1,166	1,166
1924	Critical	1,009	920	848	869	705	517	589	770	927	1,484	1,778	1,964
1925	Below Normal	1,884	1,906	1,796	1,336	934	800	904	986	1,198	1,433	1,834	1,968
1926	Dry	2,039	2,039	1,786	1,389	1,041	898	1,043	1,102	1,536	1,974	2,039	2,039
1927	Above Normal	2,039	1,984	1,667	1,255	917	686	724	797	1,048	1,375	1,757	1,757
1928	Below Normal	2,039	2,023	1,678	1,260	715	607	683	882	1,141	1,399	1,708	1,836
1929	Critical	1,821	1,724	1,436	1,013	798	443	399	478	598	1,159	1,815	2,039
1930	Critical	2,039	1,925	1,682	1,248	1,103	887	981	1,061	1,215	1,375	1,886	2,021
1931	Critical	2,024	1,845	1,572	1,175	1,031	690	666	770	875	1,494	1,920	1,920
1932	Above Normal	2,039	1,888	1,730	1,326	983	1,005	1,263	1,400	1,605	1,884	2,039	2,039
1933	Dry	2,039	1,932	1,749	1,336	913	581	560	685	804	1,290	1,880	2,039
1934	Critical	1,991	1,806	1,499	1,093	686	355	323	418	745	1,045	1,705	1,929
1935	Above Normal	2,039	2,039	1,752	1,366	1,188	810	766	738	767	874	1,482	1,482
1936	Above Normal	2,039	2,039	1,888	1,473	1,292	959	1,064	1,139	1,219	1,407	1,722	2,025
1937	Wet	2,039	2,039	2,039	1,727	1,280	1,035	1,169	1,264	1,675	2,039	2,039	2,039
1938	Wet	2,039	2,039	2,039	1,805	1,536	1,273	1,309	1,466	1,642	1,794	1,916	1,967
1939	Dry	2,039	1,740	1,493	1,152	1,076	519	353	417	552	783	1,327	1,327
1940	Above Normal	2,012	1,975	1,705	1,221	754	528	508	568	712	1,060	1,539	1,911
1941	Wet	2,039	2,039	1,995	1,696	1,391	1,174	1,224	1,381	1,600	1,865	2,039	2,039
1942	Wet	2,039	1,998	1,849	1,607	1,320	1,110	1,166	1,332	1,565	1,730	1,953	2,039
1943	Wet	2,039	2,039	1,907	1,463	909	727	799	964	1,201	1,494	1,777	1,777
1944	Below Normal	2,000	1,836	1,539	1,172	1,062	783	827	868	1,196	1,604	1,903	2,039
1945	Above Normal	2,006	1,845	1,529	1,088	833	647	697	783	1,055	1,445	1,843	1,698
1946	Above Normal	1,768	1,590	1,306	853	653	399	368	432	584	933	1,266	1,623
1947	Dry	1,941	1,662	1,347	976	897	570	375	458	706	824	1,332	1,332
1948	Below Normal	1,693	1,797	1,534	1,189	847	736	822	992	1,113	1,440	1,701	1,539
1949	Below Normal	1,882	1,789	1,429	942	774	753	855	958	1,248	1,478	1,916	2,039
1950	Below Normal	2,039	2,038	1,764	1,430	1,114	894	1,055	1,271	1,664	2,039	2,039	2,039
1951	Above Normal	2,039	1,920	1,605	1,124	695	476	477	597	821	1,160	1,573	1,573
1952	Wet	2,039	2,039	2,021	1,789	1,447	1,184	1,220	1,375	1,552	1,704	1,890	1,960
1953	Below Normal	2,039	1,925	1,714	1,363	1,048	722	818	1,032	1,335	1,692	1,869	1,995
1954	Below Normal	2,039	1,981	1,632	1,138	668	376	399	484	778	1,146	1,546	1,625
1955	Dry	1,698	1,603	1,428	1,031	1,015	665	750	873	1,237	1,599	1,884	1,884
1956	Wet	2,039	1,990	1,832	1,546	1,241	911	965	1,132	1,245	1,545	1,679	1,938
1957	Below Normal	2,039	1,713	1,505	1,161	767	685	764	1,048	1,411	1,634	1,826	1,995
1958	Wet	2,039	2,039	1,991	1,754	1,380	1,113	1,147	1,298	1,449	1,644	1,766	1,875
1959	Dry	1,734	1,553	1,290	984	794	432	399	519	715	940	1,255	1,255
1960	Critical	1,960	1,672	1,344	993	899	664	773	757	1,087	1,558	1,955	2,039
1961	Critical	2,039	1,790	1,478	1,119	777	667	615	635	753	1,214	1,442	1,711
1962	Below Normal	1,835	1,685	1,397	976	761	551	492	702	998	1,370	1,771	1,987
1963	Above Normal	1,930	1,908	1,676	1,209	861	688	725	895	1,153	1,468	1,763	1,763
1964	Dry	1,823	1,547	1,205	830	765	636	532	608	1,000	1,489	1,837	2,039
1965	Wet	1,990	1,958	1,680	1,259	869	694	806	935	1,271	1,698	1,910	2,025
1966	Below Normal	2,039	1,853	1,458	999	720	570	537	729	1,033	1,465	1,749	1,896
1967	Wet	2,039	2,039	1,999	1,763	1,546	1,279	1,313	1,466	1,684	1,836	1,988	1,988
1968	Dry	2,039	1,725	1,425	1,061	828	637	591	722	968	1,389	1,799	1,992
1969	Wet	2,039	2,039	2,039	1,818	1,646	1,379	1,413	1,565	1,694	1,847	2,039	2,039
1970	Above Normal	2,039	1,930	1,555	1,086	730	449	398	477	772	1,143	1,516	1,687
1971	Below Normal	1,968	1,887	1,640	1,272	985	819	887	1,058	1,177	1,508	1,842	1,842
1972	Dry	2,039	1,907	1,622	1,265	910	736	766	867	1,280	1,617	1,823	1,994
1973	Above Normal	2,039	1,922	1,624	1,195	907	744	759	936	1,224	1,614	1,885	2,034
1974	Wet	2,039	2,030	1,806	1,414	1,113	900	952	1,117	1,354	1,686	1,828	1,975
1975	Wet	2,039	2,005	1,717	1,410	1,146	960	1,019	1,185	1,434	1,696	1,889	1,889
1976	Critical	2,039	1,913	1,605	1,287	1,147	890	733	704	865	935	1,160	1,193
1977	Critical	1,155	1,019	833	601	325	213	235	335	492	973	1,659	1,942
1978	Wet	2,039	2,039	1,985	1,633	1,336	1,064	1,094	1,116	1,290	1,417	1,812	1,967
1979	Above Normal	2,039	1,941	1,806	1,401	1,091	800	860	981	1,302	1,699	1,996	1,996
1980	Wet	2,039	2,039	1,868	1,556	1,168	844	953	1,083	1,237	1,567	1,922	2,014
1981	Dry	2,039	1,889	1,565	1,147	883	568	573	765	1,107	1,522	1,754	1,942
1982	Wet	2,039	2,039	2,026	1,765	1,414	1,151	1,188	1,392	1,627	1,795	1,994	2,039
1983	Wet	2,039	2,039	2,039	1,850	1,700	1,507	1,607	1,758	1,921	2,039	2,039	2,039
1984	Above Normal	2,039	1,848	1,460	1,003	751	579	592	802	1,101	1,476	1,810	1,921
1985	Dry	1,945	1,700	1,322	814	576	409	319	343	477	800	1,321	1,852
1986	Wet	2,039	2,039	2,027	1,742	1,270	1,123	1,257	1,467	1,709	1,923	2,039	2,039
1987	Critical	2,039	1,743	1,474	1,138	1,061	531	337	360	448	920	1,444	1,444
1988	Critical	1,286	1,238	1,012	839	910	605	574	633	827	1,167	1,487	1,534
1989	Critical	1,734	1,574	1,151	728	597	443	341	345	465	580	1,192	1,266
1990	Critical	1,437	1,286	1,143	1,025	934	682	673	763	894	1,033	1,167	1,275
1991	Critical	1,822	1,664	1,429	1,013	804	442	365	459	510	681	914	914
1992	Critical	1,837	1,663	1,322	935	478	279	254	282	401	784	1,472	1,781
1993	Wet	1,916	1,905	1,628	1,381	1,133	885	947	1,074	1,105	1,334	1,558	1,805
1994	Critical	1,672	1,454	1,119	720	573	502	400	482	499	958	1,564	1,791
1995	Wet	1,979	2,039	2,039	1,775	1,558	1,293	1,327	1,480	1,621	1,854	2,009	2,009
1996	Wet	2,039	2,025	1,909	1,478	994	709	822	882	1,201	1,645	1,865	2,039
1997	Wet	2,039	1,985	1,764	1,353	898	769	811	938	1,297	1,698	1,909	2,039
1998	Wet	2,039	2,039	2,016	1,755	1,540	1,276	1,312	1,468	1,675	1,837	2,018	2,039
1999	Above Normal	2,039	1,999	1,663	1,222	919	717	835	1,019	1,340	1,570	1,794	1,794
2000	Above Normal	2,039	1,955	1,628	1,137	642	469	402	537	753	1,080	1,458	1,767
2001	Dry	1,943	1,823	1,513	1,066	957	569	503	595	903	1,478	1,770	1,718
2002	Dry	1,666	1,572	1,292	935	785	688	603	600	1,001	1,495	1,751	1,678
2003	Below Normal	1,837	1,734	1,473	1,021	609	440	475					
	Average	1,940	1,846	1,621	1,257	981	750	771	885	1,104	1,419	1,732	1,834
	Wet	2,028	1,998	1,849	1,517	1,197	969	1,025	1,180	1,410	1,676	1,881	1,943
	Above Normal	2,010	1,937	1,685	1,282	887	680	712	833	1,039	1,342	1,693	1,869
	Below Normal	1,955	1,859	1,604	1,211	942	706	736	854	1,090	1,405	1,689	1,767
	Dry	1,930	1,761	1,476	1,075	899	670	664	730	985	1,334	1,701	1,799
	Critical	1,678	1,539	1,297	992	775	516	481	565	703	1,083	1,544	1,693
	Dry and Critical	1,829	1,672	1,405	1,042	850	608	591	664	872	1,234	1,638	1,757

Table 167: Simulated San Luis Storage (TAF) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								542	634	1,028	1,597	1,911
1922	Above Normal	2,039	2,039	1,826	1,502	1,201	987	1,036	1,086	1,333	1,633	1,852	1,923
1923	Below Normal	1,976	1,954	1,630	1,134	873	689	728	828	897	1,033	1,182	1,182
1924	Critical	1,026	935	862	882	728	539	610	794	941	1,520	1,784	1,969
1925	Dry	1,889	1,924	1,811	1,347	941	803	905	989	1,230	1,467	1,845	1,978
1926	Dry	2,039	2,039	1,773	1,364	1,046	887	1,024	1,081	1,509	1,954	2,039	2,039
1927	Wet	2,039	2,010	1,705	1,276	935	701	740	812	1,062	1,389	1,769	1,769
1928	Above Normal	2,039	2,039	1,692	1,272	722	603	678	881	1,157	1,408	1,717	1,838
1929	Critical	1,858	1,761	1,472	1,044	831	472	428	508	639	1,203	1,859	2,039
1930	Dry	2,039	1,929	1,687	1,247	1,102	886	979	1,059	1,213	1,373	1,883	2,018
1931	Critical	2,031	1,852	1,580	1,181	1,033	692	667	774	891	1,510	1,920	1,920
1932	Dry	2,039	1,946	1,792	1,409	1,023	1,040	1,295	1,432	1,645	1,918	2,039	2,039
1933	Critical	2,039	1,952	1,770	1,355	972	628	606	731	856	1,352	1,882	2,039
1934	Critical	1,994	1,809	1,503	1,096	689	358	327	425	749	1,093	1,753	1,950
1935	Below Normal	2,039	2,039	1,738	1,339	1,150	760	760	727	745	841	1,463	1,463
1936	Below Normal	2,039	2,039	1,826	1,401	1,247	880	977	1,051	1,128	1,310	1,697	2,010
1937	Below Normal	2,039	2,039	2,039	1,673	1,244	991	1,063	1,168	1,572	2,039	2,039	2,039
1938	Wet	2,039	2,039	2,039	1,804	1,534	1,271	1,307	1,464	1,640	1,792	1,914	1,967
1939	Dry	2,039	1,738	1,491	1,147	1,068	511	347	424	557	789	1,330	1,330
1940	Above Normal	2,000	2,023	1,692	1,170	657	456	450	575	737	1,077	1,511	1,847
1941	Wet	1,993	2,034	1,902	1,485	1,177	958	1,009	1,168	1,398	1,649	1,865	2,028
1942	Wet	2,039	2,039	1,867	1,559	1,227	984	1,030	1,191	1,420	1,579	1,789	1,923
1943	Wet	2,039	2,039	1,875	1,429	875	691	777	963	1,161	1,495	1,753	1,753
1944	Dry	2,011	1,875	1,583	1,221	1,115	799	800	838	1,171	1,584	1,886	2,039
1945	Below Normal	2,039	1,930	1,607	1,158	892	701	750	826	1,087	1,459	1,823	1,698
1946	Below Normal	1,791	1,646	1,331	869	659	443	403	479	648	996	1,294	1,620
1947	Dry	1,934	1,743	1,428	1,055	967	637	444	494	756	850	1,352	1,352
1948	Below Normal	1,724	1,849	1,564	1,217	871	728	800	960	1,147	1,436	1,701	1,812
1949	Dry	2,028	1,942	1,551	1,023	800	731	865	957	1,231	1,452	1,862	2,019
1950	Below Normal	2,039	2,039	1,771	1,449	1,091	899	1,071	1,271	1,636	2,039	2,039	2,039
1951	Above Normal	2,039	1,999	1,684	1,202	775	555	553	680	921	1,263	1,676	1,676
1952	Wet	2,039	2,039	2,012	1,780	1,438	1,175	1,212	1,368	1,543	1,695	1,864	1,939
1953	Wet	2,039	1,972	1,758	1,402	1,053	692	787	999	1,301	1,658	1,835	1,960
1954	Above Normal	2,039	2,001	1,650	1,152	676	373	396	490	784	1,152	1,550	1,672
1955	Dry	1,757	1,675	1,496	1,085	992	718	773	897	1,272	1,601	1,885	1,885
1956	Wet	2,039	2,030	1,826	1,515	1,171	784	840	1,008	1,137	1,447	1,602	1,862
1957	Above Normal	2,039	1,720	1,514	1,155	769	685	765	1,050	1,415	1,634	1,825	1,982
1958	Wet	2,039	2,039	1,952	1,689	1,315	1,049	1,083	1,234	1,398	1,580	1,702	1,812
1959	Below Normal	1,666	1,519	1,261	960	786	448	416	519	722	947	1,265	1,265
1960	Dry	1,985	1,691	1,355	992	889	639	740	719	1,044	1,511	1,945	2,039
1961	Dry	2,039	1,787	1,471	1,105	770	651	630	650	767	1,230	1,457	1,705
1962	Below Normal	1,829	1,736	1,444	1,018	797	615	555	765	1,062	1,433	1,818	1,969
1963	Wet	1,931	1,914	1,674	1,222	892	732	776	949	1,209	1,529	1,803	1,803
1964	Dry	1,885	1,608	1,268	889	825	691	596	667	1,051	1,530	1,832	2,027
1965	Wet	2,039	2,039	1,739	1,287	854	645	745	891	1,222	1,621	1,817	1,920
1966	Below Normal	2,029	1,871	1,474	1,014	731	578	545	740	1,044	1,474	1,746	1,879
1967	Wet	2,004	2,039	1,998	1,763	1,545	1,278	1,312	1,464	1,683	1,836	1,987	1,987
1968	Below Normal	2,039	1,725	1,426	1,061	826	640	594	730	986	1,408	1,802	1,995
1969	Wet	2,039	2,039	2,039	1,818	1,646	1,379	1,413	1,565	1,694	1,847	2,039	2,039
1970	Wet	2,039	1,921	1,553	1,091	754	479	429	512	806	1,178	1,554	1,674
1971	Wet	1,962	1,933	1,673	1,283	969	784	845	1,012	1,139	1,465	1,771	1,771
1972	Below Normal	2,015	1,913	1,629	1,272	909	738	767	873	1,285	1,619	1,825	1,997
1973	Above Normal	2,039	1,979	1,676	1,196	915	692	699	888	1,177	1,568	1,837	1,989
1974	Wet	2,039	2,039	1,760	1,332	1,029	815	867	1,032	1,279	1,585	1,736	1,881
1975	Wet	2,023	1,997	1,715	1,403	1,131	949	1,009	1,175	1,425	1,688	1,882	1,882
1976	Critical	2,039	1,915	1,606	1,286	1,148	896	740	710	871	936	1,163	1,195
1977	Critical	1,157	1,022	835	603	326	213	235	338	503	986	1,672	1,953
1978	Above Normal	2,039	2,039	1,987	1,602	1,309	1,042	1,073	1,101	1,289	1,464	1,797	1,931
1979	Below Normal	2,039	1,972	1,806	1,398	1,062	770	831	952	1,273	1,669	1,965	1,965
1980	Above Normal	2,039	2,039	1,872	1,490	1,080	717	829	964	1,132	1,481	1,814	1,906
1981	Dry	2,039	1,917	1,591	1,170	884	572	577	774	1,116	1,531	1,753	1,924
1982	Wet	2,039	2,039	2,020	1,704	1,355	1,092	1,130	1,287	1,523	1,691	1,890	2,039
1983	Wet	2,039	2,039	2,039	1,850	1,700	1,507	1,607	1,758	1,921	2,039	2,039	2,039
1984	Wet	2,039	1,868	1,479	1,023	775	602	623	833	1,132	1,507	1,810	1,923
1985	Dry	1,953	1,741	1,360	844	597	424	328	354	500	823	1,329	1,847
1986	Wet	2,039	2,039	2,027	1,718	1,246	1,101	1,237	1,446	1,699	1,916	2,039	2,039
1987	Dry	2,039	1,743	1,476	1,138	1,061	526	335	364	447	920	1,443	1,443
1988	Critical	1,295	1,246	1,016	840	909	606	574	633	843	1,178	1,508	1,555
1989	Dry	1,759	1,618	1,190	759	625	443	340	345	478	587	1,197	1,289
1990	Critical	1,468	1,315	1,173	1,024	956	701	693	785	923	1,075	1,188	1,305
1991	Critical	1,827	1,690	1,460	1,040	819	442	363	461	523	697	927	927
1992	Critical	1,855	1,680	1,333	943	474	280	254	282	413	795	1,480	1,763
1993	Above Normal	1,901	1,847	1,551	1,262	1,039	846	915	1,045	1,197	1,405	1,681	1,930
1994	Critical	1,789	1,551	1,216	816	701	453	346	458	571	1,009	1,540	1,863
1995	Wet	2,039	2,039	2,039	1,746	1,528	1,263	1,297	1,450	1,605	1,824	1,980	1,980
1996	Wet	2,039	2,026	1,872	1,436	951	667	780	845	1,164	1,603	1,823	2,001
1997	Wet	2,039	1,992	1,714	1,308	873	744	803	936	1,302	1,677	1,888	2,039
1998	Wet	2,039	2,039	2,007	1,745	1,530	1,266	1,302	1,459	1,665	1,828	2,007	2,039
1999	Wet	2,039	2,010	1,673	1,229	922	716	833	1,020	1,340	1,635	1,792	1,792
2000	Above Normal	2,039	1,986	1,640	1,146	650	492	422	555	736	1,064	1,441	1,752
2001	Dry	1,939	1,859	1,548	1,097	987	674	604	696	1,020	1,595	1,839	1,786
2002	Dry	1,747	1,663	1,369	988	803	703	627	629	1,023	1,506	1,750	1,669
2003	Above Normal	1,828	1,785	1,533	1,074	654	480	514					
	Average	1,947	1,868	1,633	1,257	977	741	761	876	1,102	1,417	1,723	1,830
	Wet	2,028	2,010	1,844	1,496	1,170	936	992	1,148	1,380	1,644	1,844	1,918
	Above Normal	2,007	1,958	1,693	1,268	871	661	694	821	1,043	1,348	1,691	1,863
	Below Normal	1,950	1,876	1,610	1,212	938	706	733	849	1,088	1,407	1,690	1,781
	Dry	1,953	1,802	1,513	1,104	916	685	678	743	1,002	1,346	1,704	1,802
	Critical	1,698	1,561	1,319	1,009	799	523	487	575	727	1,113	1,556	1,707
	Dry and Critical	1,851	1,705	1,435	1,066	869	620	602	676	892	1,252	1,645	1,764

Attachment 2

Delta Simulation Modeling Output – DSM2

Modeling

June 2009

Table 1: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Collinsville (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	703	696	-8 (-1%)
Apr	914	893	-22 (-2%)
May	1,385	1,373	-12 (-1%)
Jun	2,282	2,274	-9 (0%)
Jul	2,869	2,864	-5 (0%)
Aug	4,807	4,825	18 (0%)
Sep	6,407	6,423	16 (0%)
Oct	7,190	7,170	-21 (0%)
Nov	6,584	6,527	-57 (-1%)
Dec	4,406	4,383	-23 (-1%)
Jan	2,500	2,508	8 (0%)
Feb	1,466	1,507	41 (3%)

Source: DSM2 Modeling (Node RSAC081)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 2: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Collinsville (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	206	205	-1 (0%)
Apr	243	242	-1 (0%)
May	313	312	-1 (0%)
Jun	693	683	-10 (-1%)
Jul	1,294	1,292	-2 (0%)
Aug	3,523	3,532	9 (0%)
Sep	4,001	3,975	-26 (-1%)
Oct	4,687	4,611	-75 (-2%)
Nov	4,657	4,581	-77 (-2%)
Dec	3,207	3,145	-62 (-2%)
Jan	1,829	1,823	-6 (0%)
Feb	1,291	1,279	-12 (-1%)

Source: DSM2 Modeling (Node RSAC081)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 3: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Collinsville (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	207	207	0 (0%)
Apr	259	257	-2 (-1%)
May	386	377	-9 (-2%)
Jun	1,129	1,106	-23 (-2%)
Jul	1,617	1,592	-25 (-2%)
Aug	3,910	3,898	-12 (0%)
Sep	6,349	6,358	9 (0%)
Oct	7,159	7,146	-13 (0%)
Nov	6,793	6,757	-36 (-1%)
Dec	3,798	3,753	-44 (-1%)
Jan	2,118	2,118	0 (0%)
Feb	927	935	9 (1%)

Source: DSM2 Modeling (Node RSAC081)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 4: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Collinsville (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	410	402	-7 (-2%)
Apr	635	600	-35 (-5%)
May	985	970	-15 (-2%)
Jun	1,890	1,891	1 (0%)
Jul	2,437	2,430	-7 (0%)
Aug	4,540	4,522	-18 (0%)
Sep	6,938	6,947	9 (0%)
Oct	7,569	7,579	10 (0%)
Nov	6,208	6,164	-44 (-1%)
Dec	3,771	3,745	-26 (-1%)
Jan	2,390	2,434	45 (2%)
Feb	1,452	1,714	262 (18%)

Source: DSM2 Modeling (Node RSAC081)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 5: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Collinsville (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	845	831	-15 (-2%)
Apr	1,234	1,180	-54 (-4%)
May	1,758	1,736	-22 (-1%)
Jun	3,299	3,293	-6 (0%)
Jul	3,950	3,959	9 (0%)
Aug	5,751	5,792	41 (1%)
Sep	7,950	8,005	55 (1%)
Oct	8,721	8,751	30 (0%)
Nov	7,528	7,525	-3 (0%)
Dec	4,909	4,935	26 (1%)
Jan	2,886	2,892	6 (0%)
Feb	1,307	1,314	7 (1%)

Source: DSM2 Modeling (Node RSAC081)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 6: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Collinsville (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	2,406	2,387	-19 (-1%)
Apr	2,872	2,849	-22 (-1%)
May	4,615	4,591	-25 (-1%)
Jun	5,813	5,807	-6 (0%)
Jul	6,415	6,406	-9 (0%)
Aug	7,383	7,457	74 (1%)
Sep	8,744	8,810	66 (1%)
Oct	9,909	9,885	-25 (0%)
Nov	9,574	9,442	-132 (-1%)
Dec	7,597	7,611	14 (0%)
Jan	3,884	3,891	7 (0%)
Feb	2,640	2,624	-16 (-1%)

Source: DSM2 Modeling (Node RSAC081)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 7: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Emmanton (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	251	250	-1 (0%)
Apr	278	275	-2 (-1%)
May	383	382	-2 (0%)
Jun	584	584	0 (0%)
Jul	667	665	-2 (0%)
Aug	1,280	1,286	6 (1%)
Sep	1,967	1,978	11 (1%)
Oct	2,260	2,250	-10 (0%)
Nov	1,920	1,896	-24 (-1%)
Dec	1,185	1,178	-7 (-1%)
Jan	659	662	3 (1%)
Feb	428	436	8 (2%)

Source: DSM2 Modeling (Node RSAC092)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 8: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Emmanton (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	184	184	0 (0%)
Apr	186	186	0 (0%)
May	192	192	0 (0%)
Jun	233	232	-1 (0%)
Jul	293	293	0 (0%)
Aug	807	813	5 (1%)
Sep	1,001	995	-6 (-1%)
Oct	1,238	1,211	-27 (-2%)
Nov	1,153	1,134	-19 (-2%)
Dec	818	792	-26 (-3%)
Jan	489	487	-1 (0%)
Feb	369	367	-3 (-1%)

Source: DSM2 Modeling (Node RSAC092)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 9: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Emmanton (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	185	185	0 (0%)
Apr	188	188	0 (0%)
May	197	197	0 (0%)
Jun	276	275	-2 (-1%)
Jul	322	319	-3 (-1%)
Aug	878	877	-1 (0%)
Sep	1,722	1,730	7 (0%)
Oct	1,987	1,975	-11 (-1%)
Nov	1,889	1,869	-20 (-1%)
Dec	953	933	-21 (-2%)
Jan	548	548	1 (0%)
Feb	289	292	3 (1%)

Source: DSM2 Modeling (Node RSAC092)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 10: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Emmanton (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	203	203	0 (0%)
Apr	219	216	-3 (-1%)
May	258	257	-1 (0%)
Jun	387	389	2 (1%)
Jul	460	459	-1 (0%)
Aug	1,084	1,077	-7 (-1%)
Sep	2,031	2,038	8 (0%)
Oct	2,322	2,326	4 (0%)
Nov	1,727	1,707	-19 (-1%)
Dec	1,002	997	-5 (-1%)
Jan	650	663	13 (2%)
Feb	443	495	52 (12%)

Source: DSM2 Modeling (Node RSAC092)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 11: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Emmanton (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	247	246	-2 (-1%)
Apr	291	285	-7 (-2%)
May	350	349	-1 (0%)
Jun	726	726	1 (0%)
Jul	829	831	2 (0%)
Aug	1,577	1,586	9 (1%)
Sep	2,635	2,661	27 (1%)
Oct	2,892	2,911	18 (1%)
Nov	2,203	2,208	5 (0%)
Dec	1,344	1,363	19 (1%)
Jan	696	699	3 (0%)
Feb	379	382	3 (1%)

Source: DSM2 Modeling (Node RSAC092)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 12: Monthly Averages of Simulated Electrical Conductivity at Sacramento River at Emmanton (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	523	521	-2 (0%)
Apr	613	609	-4 (-1%)
May	1,180	1,171	-9 (-1%)
Jun	1,667	1,667	0 (0%)
Jul	1,821	1,811	-9 (-1%)
Aug	2,486	2,515	28 (1%)
Sep	3,228	3,262	34 (1%)
Oct	3,725	3,695	-30 (-1%)
Nov	3,412	3,324	-89 (-3%)
Dec	2,188	2,196	8 (0%)
Jan	1,094	1,101	6 (1%)
Feb	749	745	-4 (-1%)

Source: DSM2 Modeling (Node RSAC092)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 13: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Jersey Point (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	295	294	-1 (0%)
Apr	265	262	-3 (-1%)
May	328	327	-1 (0%)
Jun	490	487	-3 (-1%)
Jul	740	741	1 (0%)
Aug	1,202	1,205	3 (0%)
Sep	1,902	1,905	3 (0%)
Oct	2,017	2,010	-7 (0%)
Nov	1,945	1,909	-36 (-2%)
Dec	1,546	1,537	-9 (-1%)
Jan	975	984	9 (1%)
Feb	642	657	14 (2%)

Source: DSM2 Modeling (Node RSAN018)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 14: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Jersey Point (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	227	226	0 (0%)
Apr	215	215	0 (0%)
May	215	215	0 (0%)
Jun	227	226	-1 (-1%)
Jul	295	296	1 (0%)
Aug	836	833	-3 (0%)
Sep	1,193	1,177	-15 (-1%)
Oct	1,242	1,211	-32 (-3%)
Nov	1,441	1,378	-63 (-4%)
Dec	1,223	1,198	-26 (-2%)
Jan	816	813	-3 (0%)
Feb	625	619	-7 (-1%)

Source: DSM2 Modeling (Node RSAN018)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 15: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Jersey Point (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	220	220	0 (0%)
Apr	211	212	1 (0%)
May	222	223	1 (0%)
Jun	257	257	-1 (0%)
Jul	338	336	-2 (-1%)
Aug	1,017	1,011	-6 (-1%)
Sep	2,108	2,101	-7 (0%)
Oct	2,282	2,286	3 (0%)
Nov	2,179	2,171	-8 (0%)
Dec	1,519	1,507	-12 (-1%)
Jan	885	894	9 (1%)
Feb	514	526	12 (2%)

Source: DSM2 Modeling (Node RSAN018)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 16: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Jersey Point (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	246	245	0 (0%)
Apr	235	231	-4 (-2%)
May	269	269	0 (0%)
Jun	383	385	2 (1%)
Jul	614	613	-1 (0%)
Aug	1,177	1,177	0 (0%)
Sep	2,210	2,209	-1 (0%)
Oct	2,359	2,364	5 (0%)
Nov	1,922	1,901	-21 (-1%)
Dec	1,375	1,358	-16 (-1%)
Jan	865	900	35 (4%)
Feb	669	755	86 (13%)

Source: DSM2 Modeling (Node RSAN018)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 17: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Jersey Point (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	306	311	5 (2%)
Apr	265	256	-9 (-3%)
May	324	324	0 (0%)
Jun	615	612	-4 (-1%)
Jul	1,153	1,154	1 (0%)
Aug	1,539	1,558	19 (1%)
Sep	2,352	2,384	32 (1%)
Oct	2,327	2,336	10 (0%)
Nov	2,200	2,179	-21 (-1%)
Dec	1,630	1,631	1 (0%)
Jan	1,124	1,125	1 (0%)
Feb	657	662	5 (1%)

Source: DSM2 Modeling (Node RSAN018)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 18: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Jersey Point (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	557	543	-13 (-2%)
Apr	465	459	-6 (-1%)
May	755	750	-5 (-1%)
Jun	1,229	1,217	-13 (-1%)
Jul	1,634	1,638	4 (0%)
Aug	1,700	1,707	7 (0%)
Sep	2,202	2,216	14 (1%)
Oct	2,565	2,560	-5 (0%)
Nov	2,449	2,398	-52 (-2%)
Dec	2,346	2,368	23 (1%)
Jan	1,313	1,329	16 (1%)
Feb	754	747	-7 (-1%)

Source: DSM2 Modeling (Node RSAN018)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 19: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Brandt Bridge (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	707	650	-58 (-8%)
Apr	469	437	-33 (-7%)
May	446	443	-4 (-1%)
Jun	572	568	-4 (-1%)
Jul	618	618	1 (0%)
Aug	573	573	0 (0%)
Sep	549	548	-1 (0%)
Oct	578	573	-5 (-1%)
Nov	599	572	-27 (-5%)
Dec	747	747	-1 (0%)
Jan	735	738	3 (0%)
Feb	729	727	-3 (0%)

Source: DSM2 Modeling (Node RSAN072)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 20: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Brandt Bridge (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	442	419	-24 (-5%)
Apr	321	306	-15 (-5%)
May	311	309	-2 (-1%)
Jun	420	415	-6 (-1%)
Jul	510	511	0 (0%)
Aug	461	461	0 (0%)
Sep	449	445	-4 (-1%)
Oct	481	476	-5 (-1%)
Nov	515	494	-21 (-4%)
Dec	685	683	-3 (0%)
Jan	649	653	4 (1%)
Feb	632	628	-4 (-1%)

Source: DSM2 Modeling (Node RSAN072)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 21: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Brandt Bridge (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	637	584	-53 (-8%)
Apr	429	390	-39 (-9%)
May	409	395	-13 (-3%)
Jun	531	517	-14 (-3%)
Jul	620	620	0 (0%)
Aug	574	574	0 (0%)
Sep	545	544	-1 (0%)
Oct	566	562	-4 (-1%)
Nov	584	558	-26 (-4%)
Dec	740	738	-2 (0%)
Jan	721	723	2 (0%)
Feb	728	718	-10 (-1%)

Source: DSM2 Modeling (Node RSAN072)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 22: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Brandt Bridge (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	705	633	-72 (-10%)
Apr	448	398	-50 (-11%)
May	427	426	-1 (0%)
Jun	614	617	3 (1%)
Jul	658	659	1 (0%)
Aug	595	595	0 (0%)
Sep	568	567	-1 (0%)
Oct	579	574	-6 (-1%)
Nov	613	583	-30 (-5%)
Dec	719	719	0 (0%)
Jan	705	715	10 (1%)
Feb	649	651	2 (0%)

Source: DSM2 Modeling (Node RSAN072)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 23: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Brandt Bridge (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	937	832	-105 (-11%)
Apr	580	527	-53 (-9%)
May	548	547	-1 (0%)
Jun	692	693	1 (0%)
Jul	689	691	2 (0%)
Aug	647	648	2 (0%)
Sep	607	608	1 (0%)
Oct	639	635	-4 (-1%)
Nov	648	619	-29 (-4%)
Dec	801	807	6 (1%)
Jan	805	806	1 (0%)
Feb	785	777	-8 (-1%)

Source: DSM2 Modeling (Node RSAN072)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 24: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Brandt Bridge (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	1,009	961	-48 (-5%)
Apr	688	675	-14 (-2%)
May	647	643	-4 (-1%)
Jun	716	708	-8 (-1%)
Jul	696	695	-1 (0%)
Aug	675	676	1 (0%)
Sep	658	661	2 (0%)
Oct	706	699	-7 (-1%)
Nov	705	669	-37 (-5%)
Dec	842	836	-6 (-1%)
Jan	865	864	-1 (0%)
Feb	953	963	10 (1%)

Source: DSM2 Modeling (Node RSAN072)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 25: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	703	643	-60 (-8%)
Apr	443	418	-26 (-6%)
May	447	442	-5 (-1%)
Jun	567	563	-3 (-1%)
Jul	613	615	1 (0%)
Aug	565	565	0 (0%)
Sep	543	542	-1 (0%)
Oct	578	573	-5 (-1%)
Nov	599	570	-28 (-5%)
Dec	755	755	1 (0%)
Jan	728	732	3 (0%)
Feb	727	724	-4 (0%)

Source: DSM2 Modeling (Node RSAN112)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 26: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	439	414	-25 (-6%)
Apr	313	300	-13 (-4%)
May	308	306	-2 (-1%)
Jun	416	411	-5 (-1%)
Jul	509	510	0 (0%)
Aug	453	453	0 (0%)
Sep	445	441	-4 (-1%)
Oct	480	475	-5 (-1%)
Nov	515	493	-22 (-4%)
Dec	692	690	-2 (0%)
Jan	643	646	4 (1%)
Feb	629	624	-5 (-1%)

Source: DSM2 Modeling (Node RSAN112)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 27: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	632	577	-56 (-9%)
Apr	411	378	-33 (-8%)
May	408	394	-14 (-4%)
Jun	526	513	-13 (-3%)
Jul	619	619	0 (0%)
Aug	565	565	0 (0%)
Sep	540	538	-1 (0%)
Oct	566	561	-4 (-1%)
Nov	584	557	-27 (-5%)
Dec	746	744	-1 (0%)
Jan	714	716	3 (0%)
Feb	725	714	-11 (-2%)

Source: DSM2 Modeling (Node RSAN112)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 28: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	704	629	-75 (-11%)
Apr	424	381	-43 (-10%)
May	427	425	-1 (0%)
Jun	610	613	4 (1%)
Jul	655	656	1 (0%)
Aug	585	585	0 (0%)
Sep	563	561	-1 (0%)
Oct	578	573	-6 (-1%)
Nov	613	582	-31 (-5%)
Dec	725	726	1 (0%)
Jan	696	706	11 (2%)
Feb	643	645	2 (0%)

Source: DSM2 Modeling (Node RSAN112)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 29: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	933	824	-108 (-12%)
Apr	540	501	-39 (-7%)
May	551	550	-1 (0%)
Jun	686	687	1 (0%)
Jul	682	684	3 (0%)
Aug	639	640	2 (0%)
Sep	600	601	1 (0%)
Oct	639	635	-4 (-1%)
Nov	647	617	-30 (-5%)
Dec	810	818	8 (1%)
Jan	800	800	0 (0%)
Feb	783	774	-9 (-1%)

Source: DSM2 Modeling (Node RSAN112)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 30: Monthly Averages of Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	1,001	952	-48 (-5%)
Apr	636	632	-4 (-1%)
May	653	643	-11 (-2%)
Jun	703	700	-4 (-1%)
Jul	683	685	2 (0%)
Aug	671	671	1 (0%)
Sep	653	656	3 (0%)
Oct	708	701	-7 (-1%)
Nov	704	666	-38 (-5%)
Dec	852	849	-3 (0%)
Jan	859	858	-1 (0%)
Feb	958	967	10 (1%)

Source: DSM2 Modeling (Node RSAN112)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 31: Monthly Averages of Simulated Electrical Conductivity at Old River near Tracy Road Bridge (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	720	665	-55 (-8%)
Apr	557	514	-43 (-8%)
May	498	497	-2 (0%)
Jun	573	571	-3 (0%)
Jul	614	616	1 (0%)
Aug	579	580	1 (0%)
Sep	562	562	-1 (0%)
Oct	580	576	-4 (-1%)
Nov	605	581	-24 (-4%)
Dec	748	747	-1 (0%)
Jan	769	772	3 (0%)
Feb	754	752	-2 (0%)

Source: DSM2 Modeling (Node ROLD059)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 32: Monthly Averages of Simulated Electrical Conductivity at Old River near Tracy Road Bridge (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	457	434	-23 (-5%)
Apr	376	354	-21 (-6%)
May	363	361	-2 (0%)
Jun	426	421	-6 (-1%)
Jul	512	511	0 (0%)
Aug	480	480	0 (0%)
Sep	464	460	-4 (-1%)
Oct	485	480	-5 (-1%)
Nov	520	501	-19 (-4%)
Dec	686	683	-3 (0%)
Jan	678	682	4 (1%)
Feb	655	651	-4 (-1%)

Source: DSM2 Modeling (Node ROLD059)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 33: Monthly Averages of Simulated Electrical Conductivity at Old River near Tracy Road Bridge (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	658	606	-51 (-8%)
Apr	513	469	-45 (-9%)
May	475	465	-9 (-2%)
Jun	537	522	-14 (-3%)
Jul	622	621	0 (0%)
Aug	594	594	0 (0%)
Sep	566	565	-1 (0%)
Oct	570	566	-4 (-1%)
Nov	590	566	-23 (-4%)
Dec	742	739	-3 (0%)
Jan	762	764	3 (0%)
Feb	764	755	-10 (-1%)

Source: DSM2 Modeling (Node ROLD059)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 34: Monthly Averages of Simulated Electrical Conductivity at Old River near Tracy Road Bridge (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	715	647	-69 (-10%)
Apr	563	495	-68 (-12%)
May	502	500	-2 (0%)
Jun	618	621	2 (0%)
Jul	662	663	1 (0%)
Aug	619	619	0 (0%)
Sep	590	589	-1 (0%)
Oct	585	579	-5 (-1%)
Nov	618	591	-27 (-4%)
Dec	720	719	-1 (0%)
Jan	748	759	11 (1%)
Feb	676	678	3 (0%)

Source: DSM2 Modeling (Node ROLD059)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 35: Monthly Averages of Simulated Electrical Conductivity at Old River near Tracy Road Bridge (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	945	846	-99 (-10%)
Apr	698	628	-70 (-10%)
May	599	600	2 (0%)
Jun	698	701	3 (0%)
Jul	693	696	2 (0%)
Aug	660	666	5 (1%)
Sep	630	634	3 (1%)
Oct	641	638	-3 (0%)
Nov	655	629	-26 (-4%)
Dec	802	806	5 (1%)
Jan	830	831	1 (0%)
Feb	805	799	-6 (-1%)

Source: DSM2 Modeling (Node ROLD059)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 36: Monthly Averages of Simulated Electrical Conductivity at Old River near Tracy Road Bridge (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	1,017	970	-46 (-5%)
Apr	775	754	-21 (-3%)
May	662	663	1 (0%)
Jun	688	689	2 (0%)
Jul	656	661	5 (1%)
Aug	611	612	1 (0%)
Sep	638	639	1 (0%)
Oct	699	697	-2 (0%)
Nov	715	684	-31 (-4%)
Dec	842	836	-6 (-1%)
Jan	905	904	-1 (0%)
Feb	971	983	11 (1%)

Source: DSM2 Modeling (Node ROLD059)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 37: Monthly Averages of Simulated Electrical Conductivity at Old River at Middle River (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	707	650	-58 (-8%)
Apr	483	452	-31 (-6%)
May	452	449	-4 (-1%)
Jun	573	569	-4 (-1%)
Jul	618	618	1 (0%)
Aug	572	573	0 (0%)
Sep	550	549	-1 (0%)
Oct	579	574	-5 (-1%)
Nov	601	573	-27 (-5%)
Dec	751	750	0 (0%)
Jan	736	739	3 (0%)
Feb	731	728	-3 (0%)

Source: DSM2 Modeling (Node RMID041)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 38: Monthly Averages of Simulated Electrical Conductivity at Old River at Middle River (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	443	419	-24 (-5%)
Apr	336	323	-13 (-4%)
May	316	314	-2 (-1%)
Jun	421	416	-6 (-1%)
Jul	511	511	0 (0%)
Aug	462	462	0 (0%)
Sep	450	446	-4 (-1%)
Oct	482	477	-5 (-1%)
Nov	516	495	-21 (-4%)
Dec	688	685	-3 (0%)
Jan	650	653	4 (1%)
Feb	633	629	-4 (-1%)

Source: DSM2 Modeling (Node RMID041)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 39: Monthly Averages of Simulated Electrical Conductivity at Old River at Middle River (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	638	584	-54 (-8%)
Apr	448	410	-38 (-8%)
May	416	402	-13 (-3%)
Jun	532	519	-14 (-3%)
Jul	621	621	0 (0%)
Aug	574	574	0 (0%)
Sep	546	545	-1 (0%)
Oct	567	563	-4 (-1%)
Nov	586	560	-26 (-4%)
Dec	742	740	-2 (0%)
Jan	722	724	2 (0%)
Feb	730	719	-10 (-1%)

Source: DSM2 Modeling (Node RMID041)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 40: Monthly Averages of Simulated Electrical Conductivity at Old River at Middle River (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	706	634	-72 (-10%)
Apr	464	415	-49 (-10%)
May	433	432	-1 (0%)
Jun	615	618	3 (1%)
Jul	659	660	1 (0%)
Aug	594	594	0 (0%)
Sep	569	568	-1 (0%)
Oct	581	575	-6 (-1%)
Nov	615	585	-30 (-5%)
Dec	722	722	0 (0%)
Jan	705	715	10 (1%)
Feb	649	651	2 (0%)

Source: DSM2 Modeling (Node RMID041)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 41: Monthly Averages of Simulated Electrical Conductivity at Old River at Middle River (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	937	832	-105 (-11%)
Apr	595	544	-52 (-9%)
May	555	555	-1 (0%)
Jun	693	693	1 (0%)
Jul	687	689	2 (0%)
Aug	646	648	2 (0%)
Sep	608	608	1 (0%)
Oct	640	636	-4 (-1%)
Nov	650	621	-29 (-4%)
Dec	805	812	7 (1%)
Jan	806	806	1 (0%)
Feb	787	778	-8 (-1%)

Source: DSM2 Modeling (Node RMID041)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 42: Monthly Averages of Simulated Electrical Conductivity at Old River at Middle River (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	1,008	960	-48 (-5%)
Apr	689	679	-10 (-1%)
May	653	647	-5 (-1%)
Jun	716	709	-7 (-1%)
Jul	693	694	1 (0%)
Aug	675	676	1 (0%)
Sep	659	662	2 (0%)
Oct	707	701	-6 (-1%)
Nov	707	671	-36 (-5%)
Dec	847	843	-4 (-1%)
Jan	866	866	-1 (0%)
Feb	956	966	10 (1%)

Source: DSM2 Modeling (Node RMID041)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 43: Monthly Averages of Simulated Electrical Conductivity at Old R. at Hwy 4 (CCWD Intake) (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	384	389	5 (1%)
Apr	338	346	7 (2%)
May	337	339	2 (1%)
Jun	315	317	2 (1%)
Jul	330	330	0 (0%)
Aug	384	384	0 (0%)
Sep	546	547	1 (0%)
Oct	639	638	-1 (0%)
Nov	621	613	-9 (-1%)
Dec	634	624	-10 (-2%)
Jan	574	576	2 (0%)
Feb	514	516	2 (0%)

Source: DSM2 Modeling (Node ROLD034)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 44: Monthly Averages of Simulated Electrical Conductivity at Old R. at Hwy 4 (CCWD Intake) (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	343	344	1 (0%)
Apr	302	304	1 (0%)
May	285	285	0 (0%)
Jun	271	275	4 (2%)
Jul	267	268	1 (0%)
Aug	287	287	0 (0%)
Sep	402	400	-2 (-1%)
Oct	417	411	-6 (-1%)
Nov	461	447	-13 (-3%)
Dec	528	512	-16 (-3%)
Jan	516	513	-3 (-1%)
Feb	458	458	1 (0%)

Source: DSM2 Modeling (Node ROLD034)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 45: Monthly Averages of Simulated Electrical Conductivity at Old R. at Hwy 4 (CCWD Intake) (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	330	337	7 (2%)
Apr	301	309	8 (3%)
May	308	309	0 (0%)
Jun	274	276	2 (1%)
Jul	259	259	0 (0%)
Aug	302	302	0 (0%)
Sep	560	558	-2 (0%)
Oct	661	660	-1 (0%)
Nov	646	641	-5 (-1%)
Dec	657	653	-5 (-1%)
Jan	540	539	-2 (0%)
Feb	470	476	6 (1%)

Source: DSM2 Modeling (Node ROLD034)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 46: Monthly Averages of Simulated Electrical Conductivity at Old R. at Hwy 4 (CCWD Intake) (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	362	365	3 (1%)
Apr	316	322	6 (2%)
May	320	320	0 (0%)
Jun	274	275	1 (0%)
Jul	278	278	0 (0%)
Aug	351	351	1 (0%)
Sep	579	579	1 (0%)
Oct	719	718	-1 (0%)
Nov	630	624	-6 (-1%)
Dec	596	587	-9 (-1%)
Jan	543	545	2 (0%)
Feb	527	532	6 (1%)

Source: DSM2 Modeling (Node ROLD034)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 47: Monthly Averages of Simulated Electrical Conductivity at Old R. at Hwy 4 (CCWD Intake) (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	386	397	12 (3%)
Apr	350	364	14 (4%)
May	368	372	4 (1%)
Jun	321	321	1 (0%)
Jul	380	381	0 (0%)
Aug	474	477	2 (1%)
Sep	645	651	6 (1%)
Oct	767	771	5 (1%)
Nov	686	683	-4 (-1%)
Dec	671	665	-6 (-1%)
Jan	603	606	3 (0%)
Feb	585	586	0 (0%)

Source: DSM2 Modeling (Node ROLD034)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 48: Monthly Averages of Simulated Electrical Conductivity at Old R. at Hwy 4 (CCWD Intake) (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	547	552	5 (1%)
Apr	460	472	12 (3%)
May	453	460	7 (2%)
Jun	491	492	1 (0%)
Jul	524	523	-1 (0%)
Aug	578	577	-1 (0%)
Sep	656	659	4 (1%)
Oct	815	816	1 (0%)
Nov	839	825	-14 (-2%)
Dec	832	822	-11 (-1%)
Jan	728	742	14 (2%)
Feb	561	559	-2 (0%)

Source: DSM2 Modeling (Node ROLD034)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 49: Monthly Averages of Simulated Electrical Conductivity at Delta Mendota Canal at Tracy Pumping Plant (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	549	535	-14 (-2%)
Apr	426	418	-7 (-2%)
May	392	393	2 (0%)
Jun	379	380	1 (0%)
Jul	371	371	0 (0%)
Aug	399	399	0 (0%)
Sep	498	499	1 (0%)
Oct	570	569	-1 (0%)
Nov	568	559	-9 (-2%)
Dec	638	633	-6 (-1%)
Jan	635	638	4 (1%)
Feb	618	620	2 (0%)

Source: DSM2 Modeling (Node CHDMC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 50: Monthly Averages of Simulated Electrical Conductivity at Delta Mendota Canal at Tracy Pumping Plant (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	399	390	-8 (-2%)
Apr	317	311	-6 (-2%)
May	308	308	0 (0%)
Jun	346	346	0 (0%)
Jul	335	335	0 (0%)
Aug	323	323	0 (0%)
Sep	392	390	-2 (0%)
Oct	411	407	-4 (-1%)
Nov	445	435	-10 (-2%)
Dec	554	546	-9 (-2%)
Jan	567	568	1 (0%)
Feb	528	529	1 (0%)

Source: DSM2 Modeling (Node CHDMC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 51: Monthly Averages of Simulated Electrical Conductivity at Delta Mendota Canal at Tracy Pumping Plant (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	485	475	-10 (-2%)
Apr	382	373	-9 (-2%)
May	375	371	-5 (-1%)
Jun	358	352	-7 (-2%)
Jul	348	348	0 (0%)
Aug	337	337	0 (0%)
Sep	504	503	-1 (0%)
Oct	581	580	-1 (0%)
Nov	576	569	-7 (-1%)
Dec	652	647	-4 (-1%)
Jan	627	627	-1 (0%)
Feb	598	601	2 (0%)

Source: DSM2 Modeling (Node CHDMC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 52: Monthly Averages of Simulated Electrical Conductivity at Delta Mendota Canal at Tracy Pumping Plant (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	522	504	-18 (-3%)
Apr	407	393	-14 (-3%)
May	376	377	1 (0%)
Jun	360	363	3 (1%)
Jul	324	325	1 (0%)
Aug	374	374	0 (0%)
Sep	519	520	1 (0%)
Oct	622	620	-1 (0%)
Nov	576	568	-8 (-1%)
Dec	613	609	-4 (-1%)
Jan	621	628	8 (1%)
Feb	579	582	3 (1%)

Source: DSM2 Modeling (Node CHDMC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 53: Monthly Averages of Simulated Electrical Conductivity at Delta Mendota Canal at Tracy Pumping Plant (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	647	623	-24 (-4%)
Apr	503	490	-13 (-3%)
May	446	450	4 (1%)
Jun	374	377	4 (1%)
Jul	387	388	1 (0%)
Aug	469	472	2 (1%)
Sep	571	575	4 (1%)
Oct	666	669	3 (0%)
Nov	622	616	-6 (-1%)
Dec	679	678	-1 (0%)
Jan	660	663	3 (0%)
Feb	695	696	1 (0%)

Source: DSM2 Modeling (Node CHDMC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 54: Monthly Averages of Simulated Electrical Conductivity at Delta Mendota Canal at Tracy Pumping Plant (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	820	812	-8 (-1%)
Apr	611	617	7 (1%)
May	524	534	11 (2%)
Jun	499	505	6 (1%)
Jul	500	500	0 (0%)
Aug	547	544	-3 (-1%)
Sep	588	590	2 (0%)
Oct	700	702	1 (0%)
Nov	735	720	-15 (-2%)
Dec	776	765	-11 (-1%)
Jan	768	777	9 (1%)
Feb	764	766	2 (0%)

Source: DSM2 Modeling (Node CHDMC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 55: Monthly Averages of Simulated Electrical Conductivity at Contra Costa Canal Pumping Plant #1 (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	378	381	3 (1%)
Apr	328	332	4 (1%)
May	317	318	1 (0%)
Jun	304	304	0 (0%)
Jul	339	339	0 (0%)
Aug	417	418	1 (0%)
Sep	614	615	1 (0%)
Oct	734	733	-1 (0%)
Nov	700	690	-10 (-1%)
Dec	725	711	-13 (-2%)
Jan	665	665	1 (0%)
Feb	577	581	3 (1%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 56: Monthly Averages of Simulated Electrical Conductivity at Contra Costa Canal Pumping Plant #1 (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	387	390	3 (1%)
Apr	341	343	1 (0%)
May	293	291	-2 (-1%)
Jun	259	260	1 (0%)
Jul	254	254	1 (0%)
Aug	291	291	0 (0%)
Sep	441	438	-3 (-1%)
Oct	448	442	-7 (-1%)
Nov	499	484	-16 (-3%)
Dec	595	571	-24 (-4%)
Jan	625	619	-5 (-1%)
Feb	547	549	2 (0%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 57: Monthly Averages of Simulated Electrical Conductivity at Contra Costa Canal Pumping Plant #1 (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	320	324	4 (1%)
Apr	285	291	6 (2%)
May	294	296	2 (1%)
Jun	249	251	3 (1%)
Jul	246	247	1 (0%)
Aug	311	310	-1 (0%)
Sep	628	625	-3 (0%)
Oct	759	758	-1 (0%)
Nov	727	721	-5 (-1%)
Dec	765	760	-5 (-1%)
Jan	616	613	-3 (0%)
Feb	530	538	8 (2%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 58: Monthly Averages of Simulated Electrical Conductivity at Contra Costa Canal Pumping Plant #1 (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	337	333	-4 (-1%)
Apr	295	298	3 (1%)
May	306	306	0 (0%)
Jun	256	257	1 (0%)
Jul	282	282	0 (0%)
Aug	377	377	1 (0%)
Sep	648	649	1 (0%)
Oct	829	828	-1 (0%)
Nov	715	710	-5 (-1%)
Dec	672	662	-10 (-1%)
Jan	609	606	-3 (0%)
Feb	603	616	12 (2%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 59: Monthly Averages of Simulated Electrical Conductivity at Contra Costa Canal Pumping Plant #1 (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	347	357	9 (3%)
Apr	310	315	5 (2%)
May	326	329	4 (1%)
Jun	304	303	0 (0%)
Jul	409	408	0 (0%)
Aug	533	535	2 (0%)
Sep	727	735	8 (1%)
Oct	897	903	6 (1%)
Nov	773	770	-4 (0%)
Dec	773	766	-7 (-1%)
Jan	681	683	2 (0%)
Feb	622	621	-1 (0%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 60: Monthly Averages of Simulated Electrical Conductivity at Contra Costa Canal Pumping Plant #1 (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	510	508	-2 (0%)
Apr	410	414	4 (1%)
May	391	395	4 (1%)
Jun	510	508	-2 (0%)
Jul	577	576	-1 (0%)
Aug	673	673	0 (0%)
Sep	767	771	4 (1%)
Oct	970	970	0 (0%)
Nov	983	965	-19 (-2%)
Dec	954	940	-14 (-1%)
Jan	841	861	20 (2%)
Feb	594	590	-3 (-1%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 61: Monthly Averages of Simulated Electrical Conductivity at West Canal at mouth of CCForebay Intake (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	505	498	-7 (-1%)
Apr	400	399	-1 (0%)
May	372	374	2 (1%)
Jun	346	348	1 (0%)
Jul	333	334	0 (0%)
Aug	367	367	0 (0%)
Sep	484	484	1 (0%)
Oct	564	564	0 (0%)
Nov	557	550	-7 (-1%)
Dec	611	604	-7 (-1%)
Jan	593	596	3 (0%)
Feb	571	574	3 (1%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 62: Monthly Averages of Simulated Electrical Conductivity at West Canal at mouth of CCForebay Intake (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	373	368	-5 (-1%)
Apr	306	303	-3 (-1%)
May	294	294	0 (0%)
Jun	312	314	2 (1%)
Jul	289	289	0 (0%)
Aug	287	287	0 (0%)
Sep	373	371	-2 (0%)
Oct	392	387	-4 (-1%)
Nov	427	418	-9 (-2%)
Dec	517	507	-10 (-2%)
Jan	528	529	0 (0%)
Feb	486	489	3 (1%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 63: Monthly Averages of Simulated Electrical Conductivity at West Canal at mouth of CCForebay Intake (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	437	431	-6 (-1%)
Apr	355	354	-2 (0%)
May	351	348	-3 (-1%)
Jun	318	314	-4 (-1%)
Jul	289	289	0 (0%)
Aug	293	294	0 (0%)
Sep	492	491	-1 (0%)
Oct	580	579	-1 (0%)
Nov	570	566	-4 (-1%)
Dec	626	622	-5 (-1%)
Jan	580	578	-2 (0%)
Feb	545	549	4 (1%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 64: Monthly Averages of Simulated Electrical Conductivity at West Canal at mouth of CCForebay Intake (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	477	465	-12 (-3%)
Apr	385	378	-7 (-2%)
May	355	356	0 (0%)
Jun	314	316	2 (1%)
Jul	280	280	0 (0%)
Aug	333	334	1 (0%)
Sep	503	504	1 (0%)
Oct	623	622	0 (0%)
Nov	563	558	-5 (-1%)
Dec	587	582	-6 (-1%)
Jan	574	579	5 (1%)
Feb	538	543	4 (1%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 65: Monthly Averages of Simulated Electrical Conductivity at West Canal at mouth of CCForebay Intake (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	594	578	-16 (-3%)
Apr	468	466	-3 (-1%)
May	422	426	4 (1%)
Jun	344	346	2 (1%)
Jul	363	364	1 (0%)
Aug	443	445	2 (0%)
Sep	560	564	4 (1%)
Oct	665	669	4 (1%)
Nov	611	609	-3 (0%)
Dec	651	649	-3 (0%)
Jan	613	616	2 (0%)
Feb	652	654	3 (0%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 66: Monthly Averages of Simulated Electrical Conductivity at West Canal at mouth of CCForebay Intake (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	758	763	5 (1%)
Apr	566	577	11 (2%)
May	505	515	10 (2%)
Jun	489	493	4 (1%)
Jul	492	491	-1 (0%)
Aug	537	533	-4 (-1%)
Sep	580	582	2 (0%)
Oct	702	703	1 (0%)
Nov	738	725	-13 (-2%)
Dec	766	754	-12 (-2%)
Jan	737	747	11 (1%)
Feb	701	700	0 (0%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 67: Monthly Averages of Simulated Electrical Conductivity at Middle River at Victoria Canal (umhos/cm) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	451	462	11 (2%)
Apr	394	408	14 (4%)
May	376	378	2 (0%)
Jun	346	348	2 (1%)
Jul	319	319	0 (0%)
Aug	322	322	0 (0%)
Sep	378	379	1 (0%)
Oct	437	437	0 (0%)
Nov	446	442	-3 (-1%)
Dec	472	466	-7 (-1%)
Jan	514	515	2 (0%)
Feb	507	512	5 (1%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 68: Monthly Averages of Simulated Electrical Conductivity at Middle River at Victoria Canal (umhos/cm) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	382	385	3 (1%)
Apr	331	332	1 (0%)
May	301	301	0 (0%)
Jun	319	321	2 (1%)
Jul	314	314	0 (0%)
Aug	286	286	0 (0%)
Sep	319	318	-1 (0%)
Oct	347	346	-2 (0%)
Nov	367	363	-3 (-1%)
Dec	404	397	-7 (-2%)
Jan	471	471	0 (0%)
Feb	444	451	6 (1%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 69: Monthly Averages of Simulated Electrical Conductivity at Middle River at Victoria Canal (umhos/cm) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	423	433	10 (2%)
Apr	365	378	13 (4%)
May	352	349	-3 (-1%)
Jun	334	333	-1 (0%)
Jul	303	302	-1 (0%)
Aug	278	279	1 (0%)
Sep	369	369	0 (0%)
Oct	431	431	-1 (0%)
Nov	438	434	-3 (-1%)
Dec	481	476	-5 (-1%)
Jan	512	510	-2 (0%)
Feb	513	519	6 (1%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 70: Monthly Averages of Simulated Electrical Conductivity at Middle River at Victoria Canal (umhos/cm) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	436	449	13 (3%)
Apr	388	400	12 (3%)
May	359	357	-1 (0%)
Jun	318	320	2 (1%)
Jul	278	278	1 (0%)
Aug	293	293	0 (0%)
Sep	380	380	1 (0%)
Oct	461	461	0 (0%)
Nov	445	442	-3 (-1%)
Dec	462	457	-5 (-1%)
Jan	512	514	2 (0%)
Feb	502	508	6 (1%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 71: Monthly Averages of Simulated Electrical Conductivity at Middle River at Victoria Canal (umhos/cm) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	491	510	18 (4%)
Apr	432	461	29 (7%)
May	429	432	4 (1%)
Jun	347	350	3 (1%)
Jul	313	314	1 (0%)
Aug	351	351	0 (0%)
Sep	420	422	1 (0%)
Oct	495	497	2 (0%)
Nov	482	480	-1 (0%)
Dec	501	496	-5 (-1%)
Jan	510	512	2 (0%)
Feb	552	557	5 (1%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 72: Monthly Averages of Simulated Electrical Conductivity at Middle River at Victoria Canal (umhos/cm) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (UMHOS/CM)	Proposed Action (UMHOS/CM)	Change from No-Action (UMHOS/CM)
Mar	586	600	13 (2%)
Apr	510	534	24 (5%)
May	502	512	11 (2%)
Jun	449	455	6 (1%)
Jul	407	406	-1 (0%)
Aug	433	431	-2 (0%)
Sep	452	454	2 (0%)
Oct	520	521	1 (0%)
Nov	571	564	-7 (-1%)
Dec	582	569	-13 (-2%)
Jan	615	624	8 (1%)
Feb	574	575	1 (0%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 73: Monthly Averages of Simulated Chloride Concentration at Contra Costa Canal Pumping Plant #1 (mg/L) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	106	102	-4 (-3%)
Apr	72	70	-2 (-3%)
May	63	63	1 (1%)
Jun	60	60	0 (1%)
Jul	57	57	0 (0%)
Aug	65	65	0 (0%)
Sep	92	92	0 (0%)
Oct	112	112	0 (0%)
Nov	111	109	-2 (-2%)
Dec	130	129	-2 (-1%)
Jan	129	130	1 (1%)
Feb	125	125	0 (0%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 74: Monthly Averages of Simulated Chloride Concentration at Contra Costa Canal Pumping Plant #1 (mg/L) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	65	63	-2 (-3%)
Apr	43	41	-2 (-4%)
May	40	40	0 (0%)
Jun	51	51	0 (0%)
Jul	48	48	0 (0%)
Aug	44	44	0 (0%)
Sep	63	63	-1 (-1%)
Oct	68	67	-1 (-2%)
Nov	77	75	-3 (-4%)
Dec	107	105	-2 (-2%)
Jan	111	111	0 (0%)
Feb	100	100	0 (0%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 75: Monthly Averages of Simulated Chloride Concentration at Contra Costa Canal Pumping Plant #1 (mg/L) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	88	86	-3 (-3%)
Apr	60	58	-2 (-4%)
May	59	57	-1 (-2%)
Jun	54	52	-2 (-3%)
Jul	51	51	0 (0%)
Aug	48	48	0 (0%)
Sep	94	93	0 (0%)
Oct	115	114	0 (0%)
Nov	113	111	-2 (-2%)
Dec	134	133	-1 (-1%)
Jan	127	127	0 (0%)
Feb	119	120	1 (1%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 76: Monthly Averages of Simulated Chloride Concentration at Contra Costa Canal Pumping Plant #1 (mg/L) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	99	94	-5 (-5%)
Apr	67	63	-4 (-6%)
May	59	59	0 (0%)
Jun	54	55	1 (2%)
Jul	45	45	0 (1%)
Aug	58	58	0 (0%)
Sep	98	98	0 (0%)
Oct	126	125	0 (0%)
Nov	113	111	-2 (-2%)
Dec	123	122	-1 (-1%)
Jan	126	128	2 (2%)
Feb	114	115	1 (1%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 77: Monthly Averages of Simulated Chloride Concentration at Contra Costa Canal Pumping Plant #1 (mg/L) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	133	126	-7 (-5%)
Apr	93	90	-4 (-4%)
May	78	79	1 (1%)
Jun	58	59	1 (2%)
Jul	62	62	0 (1%)
Aug	84	85	1 (1%)
Sep	112	113	1 (1%)
Oct	138	139	1 (1%)
Nov	126	124	-2 (-1%)
Dec	141	141	0 (0%)
Jan	136	137	1 (1%)
Feb	146	146	0 (0%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 78: Monthly Averages of Simulated Chloride Concentration at Contra Costa Canal Pumping Plant #1 (mg/L) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	180	178	-2 (-1%)
Apr	123	125	2 (1%)
May	99	102	3 (3%)
Jun	92	94	2 (2%)
Jul	93	93	0 (0%)
Aug	105	105	-1 (-1%)
Sep	117	117	1 (1%)
Oct	147	148	0 (0%)
Nov	157	153	-4 (-3%)
Dec	168	165	-3 (-2%)
Jan	166	168	2 (1%)
Feb	165	165	1 (0%)

Source: DSM2 Modeling (Node CHCCC006)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 79: Monthly Averages of Simulated Chloride Concentration at West Canal at mouth of CCForebay Intake (mg/L) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	77	78	1 (1%)
Apr	64	65	1 (1%)
May	61	61	0 (1%)
Jun	57	57	0 (0%)
Jul	67	67	0 (0%)
Aug	88	88	0 (0%)
Sep	141	141	0 (0%)
Oct	173	172	0 (0%)
Nov	164	161	-3 (-2%)
Dec	170	167	-4 (-2%)
Jan	154	154	0 (0%)
Feb	131	132	1 (1%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 80: Monthly Averages of Simulated Chloride Concentration at West Canal at mouth of CCForebay Intake (mg/L) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	80	81	1 (1%)
Apr	67	68	0 (1%)
May	55	54	0 (-1%)
Jun	45	46	0 (1%)
Jul	44	44	0 (0%)
Aug	54	54	0 (0%)
Sep	94	93	-1 (-1%)
Oct	96	94	-2 (-2%)
Nov	110	106	-4 (-4%)
Dec	136	129	-6 (-5%)
Jan	143	142	-1 (-1%)
Feb	123	123	0 (0%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 81: Monthly Averages of Simulated Chloride Concentration at West Canal at mouth of CCForebay Intake (mg/L) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	62	63	1 (2%)
Apr	52	54	2 (3%)
May	55	55	1 (1%)
Jun	43	43	1 (2%)
Jul	42	42	0 (0%)
Aug	59	59	0 (0%)
Sep	144	143	-1 (0%)
Oct	179	179	0 (0%)
Nov	171	169	-1 (-1%)
Dec	181	180	-1 (-1%)
Jan	141	140	-1 (-1%)
Feb	118	120	2 (2%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 82: Monthly Averages of Simulated Chloride Concentration at West Canal at mouth of CCForebay Intake (mg/L) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	66	65	-1 (-2%)
Apr	55	56	1 (2%)
May	58	58	0 (0%)
Jun	45	45	0 (0%)
Jul	52	52	0 (0%)
Aug	77	77	0 (0%)
Sep	150	150	0 (0%)
Oct	198	198	0 (0%)
Nov	168	166	-1 (-1%)
Dec	156	153	-3 (-2%)
Jan	139	138	-1 (-1%)
Feb	138	141	3 (2%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 83: Monthly Averages of Simulated Chloride Concentration at West Canal at mouth of CCForebay Intake (mg/L) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	69	72	2 (4%)
Apr	59	60	1 (2%)
May	63	64	1 (2%)
Jun	57	57	0 (0%)
Jul	86	85	0 (0%)
Aug	119	119	1 (1%)
Sep	171	173	2 (1%)
Oct	217	218	2 (1%)
Nov	183	182	-1 (-1%)
Dec	183	181	-2 (-1%)
Jan	159	159	1 (0%)
Feb	143	142	0 (0%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 84: Monthly Averages of Simulated Chloride Concentration at West Canal at mouth of CCForebay Intake (mg/L) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	113	112	-1 (0%)
Apr	86	87	1 (1%)
May	81	82	1 (1%)
Jun	113	112	-1 (-1%)
Jul	131	130	0 (0%)
Aug	156	156	0 (0%)
Sep	181	183	1 (1%)
Oct	236	236	0 (0%)
Nov	240	234	-5 (-2%)
Dec	232	228	-4 (-2%)
Jan	201	207	5 (3%)
Feb	135	134	-1 (-1%)

Source: DSM2 Modeling (Node CHSWP003)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 85: Monthly Averages of Simulated Chloride Concentration at Middle River at Victoria Canal (mg/L) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	94	92	-2 (-2%)
Apr	65	65	0 (-1%)
May	58	58	1 (1%)
Jun	51	51	0 (1%)
Jul	47	47	0 (0%)
Aug	56	56	0 (0%)
Sep	88	88	0 (0%)
Oct	110	110	0 (0%)
Nov	108	106	-2 (-2%)
Dec	123	121	-2 (-2%)
Jan	118	119	1 (1%)
Feb	112	113	1 (1%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Key: WY = Water Year

Table 86: Monthly Averages of Simulated Chloride Concentration at Middle River at Victoria Canal (mg/L) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	58	57	-1 (-2%)
Apr	40	39	-1 (-2%)
May	36	36	0 (0%)
Jun	41	42	1 (1%)
Jul	35	35	0 (0%)
Aug	35	35	0 (0%)
Sep	58	57	0 (-1%)
Oct	63	62	-1 (-2%)
Nov	73	70	-3 (-4%)
Dec	97	94	-3 (-3%)
Jan	100	100	0 (0%)
Feb	89	90	1 (1%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 87: Monthly Averages of Simulated Chloride Concentration at Middle River at Victoria Canal (mg/L) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	75	74	-2 (-2%)
Apr	53	53	0 (-1%)
May	52	51	-1 (-2%)
Jun	43	42	-1 (-2%)
Jul	35	35	0 (0%)
Aug	36	36	0 (0%)
Sep	90	90	0 (0%)
Oct	114	114	0 (0%)
Nov	112	111	-1 (-1%)
Dec	127	126	-1 (-1%)
Jan	114	114	0 (0%)
Feb	105	106	1 (1%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: WY = Water Year

Table 88: Monthly Averages of Simulated Chloride Concentration at Middle River at Victoria Canal (mg/L) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	86	83	-3 (-4%)
Apr	61	59	-2 (-3%)
May	53	53	0 (0%)
Jun	42	42	0 (1%)
Jul	33	33	0 (0%)
Aug	47	47	0 (0%)
Sep	93	94	0 (0%)
Oct	126	126	0 (0%)
Nov	110	109	-1 (-1%)
Dec	116	115	-2 (-1%)
Jan	113	114	1 (1%)
Feb	103	104	1 (1%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: WY = Water Year

Table 89: Monthly Averages of Simulated Chloride Concentration at Middle River at Victoria Canal (mg/L) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	118	114	-4 (-4%)
Apr	84	83	-1 (-1%)
May	71	72	1 (2%)
Jun	50	51	0 (1%)
Jul	55	55	0 (0%)
Aug	77	78	1 (1%)
Sep	109	110	1 (1%)
Oct	138	139	1 (1%)
Nov	123	122	-1 (-1%)
Dec	134	133	-1 (-1%)
Jan	124	124	1 (1%)
Feb	134	135	1 (1%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 90: Monthly Averages of Simulated Chloride Concentration at Middle River at Victoria Canal (mg/L) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative mg/L	Proposed Action mg/L	Change from No-Action mg/L
Mar	163	164	1 (1%)
Apr	111	114	3 (3%)
May	94	97	3 (3%)
Jun	90	91	1 (1%)
Jul	90	90	0 (0%)
Aug	103	102	-1 (-1%)
Sep	114	115	1 (1%)
Oct	148	148	0 (0%)
Nov	158	154	-4 (-2%)
Dec	165	162	-3 (-2%)
Jan	157	160	3 (2%)
Feb	147	147	0 (0%)

Source: DSM2 Modeling (Node CHVCT000)

Notes: Simulation Period: WY 1922 -2003

(%) indicates percent change from No-Action Alternative

Year type as defined by the Sacramento Valley Index Year Type

Key: WY = Water Year

Table 91: Simulated Electrical Conductivity at Sacramento River at Collinsville (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								6,947	7,243	4,338	2,969	500
1922	Above Normal	223	231	186	187	930	3,873	6,289	7,245	7,158	1,253	242	477
1923	Below Normal	1,003	578	468	1,614	2,383	4,461	6,228	7,070	8,002	7,774	6,379	6,379
1924	Critical	1,849	3,439	5,829	6,189	6,785	7,411	8,392	10,231	10,054	7,524	6,683	439
1925	Dry	213	280	690	1,668	3,670	6,183	8,258	9,175	8,827	8,822	4,981	477
1926	Dry	809	653	893	3,397	5,254	6,366	7,561	8,829	3,567	1,925	436	187
1927	Wet	189	181	225	921	1,198	3,478	6,030	7,352	4,829	3,720	1,401	1,401
1928	Above Normal	186	199	379	1,726	2,216	4,009	6,169	7,867	8,088	7,258	6,722	3,808
1929	Critical	2,536	3,602	4,108	4,943	6,116	7,382	8,737	9,990	10,234	5,892	2,179	971
1930	Dry	261	685	1,746	3,894	4,719	6,717	8,689	9,164	8,744	8,513	6,842	5,132
1931	Critical	4,762	4,996	6,591	6,468	6,534	7,496	8,438	10,050	9,916	3,324	1,167	1,167
1932	Dry	1,016	1,599	1,373	1,634	3,469	6,272	8,133	8,573	8,362	8,345	5,248	3,828
1933	Critical	2,930	2,310	3,644	5,164	6,322	7,331	8,506	10,032	9,938	7,337	2,994	1,366
1934	Critical	1,211	1,646	3,750	4,393	5,770	7,530	8,924	9,744	9,135	8,342	1,477	791
1935	Below Normal	435	192	210	760	2,000	4,674	7,347	8,818	8,654	7,895	769	769
1936	Below Normal	215	241	398	1,404	2,154	4,558	6,647	8,166	8,498	8,111	5,308	516
1937	Below Normal	237	236	410	1,017	2,673	5,107	6,975	8,135	2,357	203	203	207
1938	Wet	191	194	189	197	919	3,819	3,185	2,680	4,581	5,710	5,601	3,796
1939	Dry	1,893	1,956	2,129	3,963	3,494	5,856	8,605	8,414	8,035	7,410	1,164	1,164
1940	Above Normal	185	181	328	1,543	1,362	3,380	6,460	7,484	7,977	875	194	192
1941	Wet	189	185	186	346	1,543	4,108	4,357	4,984	6,623	553	194	182
1942	Wet	208	191	193	232	1,272	4,132	3,730	4,447	3,885	571	194	192
1943	Wet	193	203	287	1,418	2,177	4,113	6,908	8,346	8,048	7,363	6,075	6,075
1944	Dry	498	1,315	1,910	3,125	3,675	5,552	7,488	8,818	7,161	4,218	4,604	553
1945	Below Normal	243	619	1,063	1,892	2,346	4,550	6,694	7,656	7,195	451	185	210
1946	Below Normal	487	827	898	1,930	2,473	4,492	7,336	8,514	8,768	5,450	4,945	2,636
1947	Dry	859	1,123	2,041	3,558	3,466	5,778	8,494	9,220	8,477	8,002	5,489	5,489
1948	Below Normal	1,231	510	297	911	2,479	3,912	5,588	7,396	8,106	7,096	6,438	1,442
1949	Dry	212	721	1,238	2,352	3,929	5,243	7,364	8,755	8,571	8,073	3,695	379
1950	Below Normal	394	604	746	1,730	3,069	5,183	6,541	7,763	638	188	204	193
1951	Above Normal	198	433	679	1,655	1,486	3,545	5,839	6,856	7,278	844	202	202
1952	Wet	192	187	180	187	689	2,931	1,707	2,621	5,296	760	184	213
1953	Wet	418	694	290	393	1,493	4,241	4,598	5,080	5,349	5,330	1,004	190
1954	Above Normal	183	183	224	1,505	1,659	3,552	6,300	7,989	7,503	2,206	1,104	1,250
1955	Dry	2,059	2,601	2,286	3,395	4,031	6,275	8,002	8,461	8,733	498	190	190
1956	Wet	190	321	192	337	1,474	4,280	3,537	3,722	5,478	5,901	5,141	637
1957	Above Normal	189	273	523	1,494	1,992	3,998	6,929	3,953	3,434	1,583	251	187
1958	Wet	189	191	183	188	1,127	3,562	2,108	2,840	5,461	6,503	1,022	199
1959	Below Normal	235	1,287	2,286	2,992	2,421	4,578	7,510	8,854	8,464	7,239	6,880	6,880
1960	Dry	576	1,125	1,737	3,552	3,548	5,819	7,969	8,548	8,293	5,895	5,638	1,085
1961	Dry	669	1,416	2,442	3,999	4,437	4,835	7,272	8,804	9,060	6,117	6,108	584
1962	Below Normal	273	909	1,213	2,654	2,099	4,103	7,552	1,094	1,418	749	1,272	265
1963	Wet	205	184	227	754	1,038	3,283	5,975	6,894	2,006	2,599	1,514	1,514
1964	Dry	2,256	2,571	1,979	3,456	4,004	5,304	7,752	8,454	6,946	413	183	194
1965	Wet	275	192	228	1,338	2,043	4,328	6,668	8,096	3,437	2,300	476	282
1966	Below Normal	301	1,063	1,410	2,626	2,343	4,060	6,623	7,272	6,816	971	221	190
1967	Wet	187	202	188	188	373	2,501	1,686	2,165	5,152	5,453	1,030	1,030
1968	Below Normal	191	507	1,583	2,771	2,193	4,129	7,302	8,096	7,226	2,464	210	205
1969	Wet	223	211	197	211	1,012	3,942	2,992	2,586	4,535	386	182	188
1970	Wet	187	337	929	1,863	1,584	3,605	6,868	7,964	4,301	312	184	190
1971	Wet	189	244	226	736	1,146	3,504	3,982	5,421	7,194	5,399	3,999	3,999
1972	Below Normal	274	916	2,155	3,069	2,791	4,494	7,271	8,815	3,731	805	205	194
1973	Above Normal	187	313	608	1,240	1,604	3,984	6,139	6,993	501	183	180	185
1974	Wet	182	182	282	566	1,430	4,130	2,973	3,592	5,534	4,050	3,074	351
1975	Wet	186	216	224	323	1,463	4,176	3,189	3,018	4,024	4,727	5,517	5,517
1976	Critical	2,008	3,072	5,426	6,940	6,412	7,806	9,784	9,616	9,653	8,405	7,758	6,254
1977	Critical	5,158	4,989	6,603	7,876	7,824	8,203	9,261	9,761	9,752	6,720	382	200
1978	Above Normal	202	214	281	579	1,744	4,355	6,539	7,560	8,156	7,219	2,432	295
1979	Below Normal	214	397	652	1,091	2,691	5,263	7,514	8,319	7,039	3,393	236	236
1980	Above Normal	210	308	536	834	1,912	4,569	6,536	7,970	8,403	7,243	1,552	387
1981	Dry	273	854	2,176	3,691	3,901	5,963	8,134	8,038	1,155	185	196	188
1982	Wet	201	185	189	272	1,406	4,343	1,556	398	203	196	221	197
1983	Wet	186	196	194	195	208	344	263	722	203	184	200	200
1984	Wet	188	313	882	1,810	1,667	3,820	6,889	7,369	1,249	675	2,355	2,695
1985	Dry	1,909	2,112	1,697	3,427	3,805	5,024	7,084	7,681	7,582	4,706	1,880	191
1986	Wet	193	248	571	1,317	2,132	4,398	6,536	7,880	8,303	8,187	5,977	2,592
1987	Dry	512	986	2,266	3,878	3,859	6,179	8,481	9,306	9,077	6,220	1,247	1,247
1988	Critical	2,296	3,222	4,033	4,477	5,666	7,404	8,672	10,321	9,165	9,128	5,816	4,527
1989	Dry	413	334	1,105	3,050	3,554	4,956	7,602	8,848	8,782	6,988	3,656	2,227
1990	Critical	2,665	2,763	4,765	7,114	6,888	7,525	8,920	10,024	10,029	9,874	9,242	7,517
1991	Critical	1,197	924	3,894	7,226	7,140	7,385	8,932	10,615	9,681	9,850	8,053	8,053
1992	Critical	683	1,359	3,654	4,492	6,168	8,292	9,496	9,505	9,120	7,646	472	207
1993	Above Normal	206	192	213	265	1,325	4,209	6,419	7,626	8,238	7,085	6,027	2,447
1994	Critical	1,573	2,142	3,087	4,472	5,357	4,834	6,865	9,019	8,212	7,122	380	191
1995	Wet	181	192	182	187	249	1,299	1,227	2,568	5,555	1,503	214	214
1996	Wet	192	188	188	416	1,786	4,445	4,246	5,405	4,934	248	186	200
1997	Wet	231	491	989	2,356	2,358	4,253	7,479	8,662	7,875	3,861	294	189
1998	Wet	199	192	191	187	214	601	388	1,064	546	210	190	188
1999	Wet	184	202	331	1,080	1,637	3,958	4,941	5,977	6,493	6,685	1,127	1,127
2000	Above Normal	189	273	482	1,820	1,791	3,808	6,527	7,419	7,535	5,485	3,540	1,191
2001	Dry	417	1,074	2,492	4,249	4,475	6,330	8,543	9,263	9,182	1,413	203	208
2002	Dry	373	804	1,439	3,091	3,804	4,864	7,662	8,629	4,949	616	188	204
2003	Above Normal	329	308	190	702	1,387	3,639	6,048					
	Average	703	914	1,385	2,282	2,869	4,807	6,407	7,190	6,584	4,406	2,500	1,466
	Wet	206	243	313	693	1,294	3,523	4,001	4,687	4,657	3,207	1,829	1,291
	Above Normal	207	259	386	1,129	1,617	3,910	6,349	7,159	6,793	3,798	2,118	927
	Below Normal	410	635	985	1,890	2,437	4,540	6,938	7,569	6,208	3,771	2,390	1,452
	Dry	845	1,234	1,758	3,299	3,950	5,751	7,950	8,721	7,528	4,909	2,886	1,307
	Critical	2,406	2,872	4,615	5,813	6,415	7,383	8,744	9,909	9,574	7,597	3,884	2,640

Table 92: Simulated Electrical Conductivity at Sacramento River at Collinsville (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								6,921	7,221	4,329	2,967	499
1922	Above Normal	221	231	186	187	930	3,873	6,292	7,215	7,165	1,255	240	470
1923	Below Normal	990	539	459	1,608	2,419	4,428	6,175	7,099	8,032	7,782	6,371	6,371
1924	Critical	1,865	3,439	5,831	6,190	6,771	7,406	8,386	10,217	9,738	7,468	6,794	442
1925	Dry	217	275	688	1,665	3,668	6,197	8,276	9,152	8,793	8,805	4,970	475
1926	Dry	817	591	895	3,416	5,072	6,355	7,601	8,828	3,505	1,891	439	187
1927	Wet	189	181	225	916	1,195	3,478	6,033	7,343	4,710	3,622	1,383	1,383
1928	Above Normal	186	199	378	1,727	2,214	4,005	6,221	7,859	8,112	7,227	6,670	3,808
1929	Critical	2,532	3,590	4,125	4,942	6,109	7,381	8,737	9,970	10,184	5,897	2,193	969
1930	Dry	258	674	1,742	3,901	4,740	6,729	8,710	9,182	8,755	8,512	6,842	5,134
1931	Critical	4,768	4,993	6,585	6,430	6,505	7,496	8,446	10,012	9,882	3,305	1,164	1,164
1932	Dry	1,000	1,610	1,282	1,600	3,466	6,255	8,123	8,557	8,350	8,334	5,072	3,695
1933	Critical	2,870	2,297	3,614	5,159	6,286	7,366	8,487	9,993	9,842	7,371	2,776	1,239
1934	Critical	1,188	1,634	3,763	4,394	5,767	7,536	8,932	9,717	8,887	8,607	1,605	804
1935	Below Normal	414	192	210	756	1,990	4,684	7,043	8,586	8,617	8,064	798	798
1936	Below Normal	215	238	395	1,405	2,072	4,498	6,620	8,147	8,523	8,198	5,855	597
1937	Below Normal	237	236	408	1,032	2,666	5,099	7,458	8,522	2,280	199	203	207
1938	Wet	192	194	189	197	921	3,822	3,127	2,620	4,563	5,697	5,614	3,785
1939	Dry	1,786	1,865	2,110	3,948	3,529	5,876	8,623	8,408	8,065	7,488	1,180	1,180
1940	Above Normal	185	182	314	1,520	1,359	3,386	6,152	6,985	7,831	917	194	191
1941	Wet	189	184	186	351	1,540	4,105	4,347	4,978	6,671	539	193	181
1942	Wet	205	191	192	231	1,270	4,130	3,728	4,443	3,786	551	192	191
1943	Wet	191	202	286	1,410	2,197	4,136	6,804	7,885	8,095	7,258	5,953	5,953
1944	Dry	486	1,165	1,858	3,097	3,685	5,806	8,023	9,162	7,142	4,162	4,602	553
1945	Below Normal	241	632	1,077	1,888	2,351	4,554	6,701	7,583	6,974	434	185	209
1946	Below Normal	447	735	896	1,924	2,485	4,426	7,308	8,517	8,767	5,429	4,924	2,641
1947	Dry	846	1,174	1,953	3,584	3,547	5,867	8,524	9,273	8,444	8,635	5,762	5,762
1948	Below Normal	1,198	466	296	822	2,365	3,906	5,735	7,490	7,996	6,577	6,475	4,963
1949	Dry	477	642	1,193	2,327	3,905	5,247	7,270	8,743	8,606	8,129	3,726	387
1950	Below Normal	387	555	694	1,676	3,095	5,150	6,520	7,708	614	187	204	193
1951	Above Normal	197	430	702	1,652	1,489	3,559	5,848	6,826	7,308	846	202	202
1952	Wet	191	186	180	187	692	2,930	1,701	2,590	5,284	758	184	213
1953	Wet	402	661	289	392	1,486	4,299	4,340	4,861	5,157	5,192	968	189
1954	Above Normal	183	183	224	1,504	1,657	3,558	6,295	7,973	7,329	2,130	1,095	1,237
1955	Dry	1,970	2,439	2,314	3,414	4,377	6,555	8,223	8,562	8,780	496	190	190
1956	Wet	190	319	192	295	1,389	4,297	3,274	3,030	4,944	5,721	5,189	650
1957	Above Normal	190	277	493	1,470	1,962	3,971	6,907	3,919	3,329	1,536	249	187
1958	Wet	189	190	183	188	1,129	3,561	2,100	2,807	5,452	6,387	1,001	199
1959	Below Normal	238	1,207	2,253	3,042	2,412	4,543	7,493	8,887	8,480	7,291	6,927	6,927
1960	Dry	551	1,101	1,733	3,541	3,520	5,797	7,970	8,557	8,299	5,896	5,645	1,059
1961	Dry	643	1,389	2,415	3,982	4,343	4,873	7,293	8,830	9,104	6,150	6,134	585
1962	Below Normal	266	851	1,174	2,733	2,129	4,086	7,533	1,113	1,393	736	1,272	265
1963	Wet	205	184	227	752	1,037	3,282	5,978	6,915	1,935	2,521	1,494	1,494
1964	Dry	2,166	2,558	1,974	3,439	3,986	5,303	7,751	8,470	6,838	402	183	194
1965	Wet	273	192	226	1,340	2,055	4,325	6,696	8,083	3,413	2,245	477	282
1966	Below Normal	314	984	1,388	2,624	2,339	4,057	6,609	7,236	6,667	948	220	190
1967	Wet	187	201	188	187	365	2,473	1,674	2,138	5,014	5,339	1,022	1,022
1968	Below Normal	190	503	1,571	2,804	2,185	4,109	7,295	8,098	7,213	2,453	209	205
1969	Wet	223	211	197	211	1,039	3,960	2,989	2,557	4,406	374	182	188
1970	Wet	187	338	933	1,885	1,571	3,594	6,887	7,970	4,227	303	184	191
1971	Wet	187	237	223	733	1,142	3,500	3,982	5,424	7,085	5,332	3,986	3,986
1972	Below Normal	278	869	2,133	3,078	2,813	4,476	7,253	8,804	3,844	842	205	194
1973	Above Normal	187	307	539	1,240	1,617	3,976	6,593	7,487	506	183	180	185
1974	Wet	182	182	278	556	1,435	4,140	2,949	3,484	5,458	4,010	3,124	357
1975	Wet	186	215	223	310	1,439	4,162	3,180	3,011	3,911	4,624	5,476	5,476
1976	Critical	1,937	2,986	5,393	6,976	6,349	7,793	9,808	9,567	9,608	8,520	7,858	6,282
1977	Critical	5,167	4,993	6,605	7,876	7,825	8,201	9,258	9,742	9,728	6,725	383	199
1978	Above Normal	200	211	284	528	1,670	4,323	6,527	7,567	8,173	6,995	2,373	299
1979	Below Normal	214	395	627	1,080	2,696	5,288	7,517	8,325	6,897	3,285	233	233
1980	Above Normal	210	310	519	687	1,771	4,524	6,496	7,949	8,407	7,122	1,443	373
1981	Dry	276	790	2,162	3,659	3,936	5,938	8,092	8,048	1,158	185	196	188
1982	Wet	201	184	190	264	1,383	4,326	1,549	395	203	196	221	196
1983	Wet	186	196	194	195	208	344	262	713	202	184	200	200
1984	Wet	188	315	890	1,794	1,673	3,837	6,843	7,143	1,160	634	2,314	2,657
1985	Dry	1,789	1,850	1,659	3,424	3,814	4,995	7,049	7,668	7,598	4,706	1,895	191
1986	Wet	193	250	602	1,251	2,151	4,477	6,563	7,900	8,320	8,224	6,041	2,549
1987	Dry	476	981	2,252	3,865	3,833	6,169	8,489	9,303	9,115	6,204	1,242	1,242
1988	Critical	2,303	3,197	4,036	4,477	5,656	7,420	8,696	10,283	9,171	9,112	5,881	4,605
1989	Dry	414	318	1,108	3,104	3,549	5,068	7,717	8,886	8,832	6,855	3,588	2,220
1990	Critical	2,580	2,689	4,727	7,130	6,840	7,521	8,934	10,015	9,938	9,953	9,117	7,327
1991	Critical	1,166	907	3,654	6,949	7,371	7,422	8,788	10,542	9,643	9,849	8,063	8,063
1992	Critical	663	1,341	3,682	4,456	6,160	8,272	9,494	9,469	9,080	7,641	471	207
1993	Above Normal	205	191	208	237	1,250	4,146	6,401	7,609	8,020	6,634	6,076	2,579
1994	Critical	1,603	2,127	3,071	4,705	5,232	5,675	7,754	9,088	7,600	6,880	386	190
1995	Wet	181	192	182	187	249	1,295	1,220	2,530	5,534	1,498	213	213
1996	Wet	192	188	188	417	1,784	4,472	4,252	5,398	4,850	245	186	200
1997	Wet	233	499	940	2,244	2,376	4,323	7,567	8,681	7,843	3,818	288	189
1998	Wet	200	191	191	186	214	601	387	1,051	534	209	190	188
1999	Wet	184	201	329	1,081	1,647	3,967	4,912	5,947	6,337	6,288	1,112	1,112
2000	Above Normal	189	271	488	1,812	1,795	3,815	6,545	7,434	7,644	5,820	3,722	1,204
2001	Dry	404	1,063	2,487	4,245	4,479	6,467	8,810	9,311	9,205	1,376	202	208
2002	Dry	374	753	1,423	3,067	3,818	4,759	7,538	8,581	4,853	608	188	204
2003	Above Normal	330	292	190	701	1,390	3,643	6,021					
	Average	696	893	1,373	2,274	2,864	4,825	6,423	7,169	6,527	4,382	2,508	1,507
	Wet	205	242	312	683	1,292	3,532	3,975	4,611	4,581	3,145	1,823	1,279
	Above Normal	207	257	377	1,106	1,592	3,898	6,358	7,145	6,754	3,750	2,118	936
	Below Normal	402	600	970	1,891	2,430	4,522	6,947	7,579	6,164	3,745	2,434	1,714
	Dry	831	1,180	1,736	3,293	3,959	5,792	8,005	8,751	7,525	4,935	2,892	1,314
	Critical	2,387	2,849	4,591	5,807	6,406	7,457	8,810	9,885	9,442	7,611	3,891	2,624

Table 93: Simulated Electrical Conductivity at Sacramento River at Emmanton (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1,949	2,124	892	607	234
1922	Above Normal	190	185	179	182	252	875	1,687	1,899	1,779	357	203	210
1923	Below Normal	233	205	202	338	435	1,036	1,641	1,829	2,368	2,139	1,555	1,555
1924	Critical	379	772	1,578	1,629	2,146	2,574	3,051	3,871	3,728	1,853	1,642	210
1925	Dry	193	191	217	361	813	1,683	2,740	3,178	2,822	2,817	1,009	235
1926	Dry	241	215	242	802	1,311	1,704	2,222	3,162	683	378	218	184
1927	Wet	183	179	185	232	250	766	1,577	2,219	1,061	770	335	335
1928	Above Normal	180	183	195	352	413	853	1,625	2,214	2,245	1,923	1,656	770
1929	Critical	486	794	916	1,365	1,678	2,553	3,207	3,722	3,796	1,249	446	259
1930	Dry	190	219	335	947	1,052	2,017	2,952	3,098	2,769	2,666	1,637	1,228
1931	Critical	1,118	1,144	1,909	1,934	1,736	2,578	3,014	3,711	3,601	629	275	275
1932	Dry	248	326	287	337	793	1,696	2,535	2,842	2,609	2,517	1,060	768
1933	Critical	508	422	816	1,449	1,942	2,490	3,040	3,709	3,599	1,741	587	308
1934	Critical	280	322	845	1,090	1,659	2,610	3,346	3,559	2,755	2,469	400	242
1935	Below Normal	201	183	185	219	375	1,189	2,220	2,840	2,621	2,176	273	273
1936	Below Normal	192	186	196	305	383	1,126	1,801	2,476	2,594	2,305	1,144	233
1937	Below Normal	209	198	201	251	542	1,308	1,966	2,744	480	181	194	195
1938	Wet	183	182	180	185	273	893	585	457	951	1,335	1,307	774
1939	Dry	356	419	403	879	683	1,945	3,234	2,780	2,484	2,136	351	351
1940	Above Normal	182	178	194	334	273	706	1,812	2,282	2,425	293	188	187
1941	Wet	182	180	180	190	319	922	931	1,212	1,809	225	187	179
1942	Wet	188	183	183	183	295	983	728	1,033	772	223	186	184
1943	Wet	183	187	190	342	399	927	1,998	2,482	2,217	1,950	1,400	1,400
1944	Dry	207	296	384	635	726	1,415	2,190	2,834	1,742	831	1,002	222
1945	Below Normal	208	230	253	356	434	1,045	1,832	2,118	1,784	208	182	190
1946	Below Normal	204	227	235	374	455	1,046	2,240	2,580	2,571	1,178	1,115	515
1947	Dry	240	258	378	763	664	1,598	3,119	3,005	2,350	2,365	1,149	1,149
1948	Below Normal	271	199	187	226	467	800	1,385	2,026	2,336	1,731	1,591	346
1949	Dry	189	227	261	492	809	1,239	2,270	2,875	2,488	2,370	733	213
1950	Below Normal	192	201	218	341	601	1,306	1,691	2,391	220	182	189	183
1951	Above Normal	184	195	214	327	286	760	1,499	1,940	2,054	296	193	193
1952	Wet	185	179	177	182	225	595	340	522	1,303	284	181	187
1953	Wet	192	214	186	187	302	986	993	1,224	1,225	1,265	342	183
1954	Above Normal	180	179	184	331	316	783	1,700	2,326	1,884	474	267	268
1955	Dry	380	482	420	768	806	2,009	2,609	2,909	2,778	218	183	183
1956	Wet	183	190	182	188	307	988	707	773	1,347	1,430	1,251	247
1957	Above Normal	181	191	207	301	375	882	2,023	796	685	354	205	184
1958	Wet	184	182	179	182	293	790	379	530	1,294	1,679	320	189
1959	Below Normal	190	306	452	576	455	1,178	2,475	2,747	2,459	1,882	1,768	1,768
1960	Dry	211	268	339	769	693	1,577	2,433	2,816	2,248	1,321	1,347	313
1961	Dry	216	295	436	873	976	1,078	2,375	2,903	2,905	1,342	1,618	237
1962	Below Normal	194	233	256	528	395	949	2,481	332	329	244	304	188
1963	Wet	189	181	186	219	231	698	1,577	1,771	467	518	338	338
1964	Dry	423	492	359	754	802	1,285	2,681	2,845	1,788	205	181	185
1965	Wet	188	181	187	305	380	1,034	1,910	2,409	595	428	213	190
1966	Below Normal	185	252	282	508	435	905	1,857	2,057	1,807	328	211	184
1967	Wet	185	191	180	182	210	545	334	373	1,173	1,243	324	324
1968	Below Normal	181	206	328	530	410	918	2,326	2,510	1,975	504	191	192
1969	Wet	194	188	183	194	280	922	564	495	1,030	203	180	182
1970	Wet	182	190	241	353	299	782	2,062	2,511	911	199	182	182
1971	Wet	180	183	184	211	246	733	845	1,258	1,858	1,196	788	788
1972	Below Normal	191	248	405	617	532	1,005	2,292	3,152	761	253	194	187
1973	Above Normal	182	191	210	265	302	912	1,614	1,973	206	181	179	182
1974	Wet	180	179	189	202	287	953	574	796	1,378	892	612	198
1975	Wet	182	186	186	186	300	946	628	544	762	969	1,247	1,247
1976	Critical	375	664	1,460	2,002	1,653	2,604	3,901	3,467	3,220	2,605	2,221	1,607
1977	Critical	1,260	1,151	2,064	2,685	2,648	2,795	3,545	3,849	3,778	1,690	219	192
1978	Above Normal	192	194	198	217	342	1,004	1,794	1,997	2,350	1,912	521	213
1979	Below Normal	192	199	218	251	516	1,366	2,221	2,713	1,867	712	189	189
1980	Above Normal	189	200	213	246	406	1,165	1,765	2,371	2,454	1,800	407	203
1981	Dry	186	232	433	783	810	1,663	2,599	2,369	322	180	192	181
1982	Wet	192	180	182	188	328	1,050	341	186	184	184	196	186
1983	Wet	181	184	182	182	190	190	180	212	178	180	187	187
1984	Wet	181	192	248	355	314	869	2,078	1,967	312	214	440	513
1985	Dry	365	404	306	724	768	1,180	2,071	2,373	2,177	1,038	412	183
1986	Wet	184	201	215	314	403	1,009	1,804	2,288	2,440	2,403	1,393	504
1987	Dry	213	258	425	852	789	2,004	3,122	3,123	2,914	1,400	350	350
1988	Critical	480	627	871	1,004	1,366	2,613	3,212	3,958	2,949	2,835	1,315	1,074
1989	Dry	195	188	242	615	709	1,166	2,549	2,737	2,619	1,769	712	465
1990	Critical	497	510	1,279	2,194	1,920	2,636	3,336	3,772	3,713	3,605	3,226	2,094
1991	Critical	331	256	987	2,542	2,024	2,486	3,335	4,169	3,556	3,513	2,349	2,349
1992	Critical	230	295	803	1,094	1,833	2,826	3,580	3,634	3,410	2,183	233	198
1993	Above Normal	188	181	182	181	288	979	1,743	2,068	2,522	1,786	1,434	517
1994	Critical	332	397	631	1,011	1,241	1,073	2,171	3,275	2,845	1,888	217	185
1995	Wet	179	182	178	181	199	299	255	536	1,447	384	191	191
1996	Wet	183	182	181	196	353	1,053	884	1,531	1,098	186	181	187
1997	Wet	193	203	261	485	439	971	2,424	3,020	2,322	891	199	185
1998	Wet	184	182	181	179	191	207	185	251	197	179	183	183
1999	Wet	180	183	195	257	309	876	1,140	1,591	1,647	1,835	338	338
2000	Above Normal	181	188	203	368	337	838	1,832	2,026	1,939	1,171	712	304
2001	Dry	202	260	524	1,066	950	1,992	3,137	3,165	2,865	391	190	190
2002	Dry	197	217	316	642	762	1,133	2,586	3,047	1,097	256	184	187
2003	Above Normal	188	187	181	211	275	782	1,576					
	Average	251	278	383	584	667	1,280	1,967	2,260	1,920	1,185	659	428
	Wet	184	186	192	233	293	807	1,001	1,238	1,153	818	489	369
	Above Normal	185	188	197	276	322	878	1,722	1,987	1,889	953	548	289
	Below Normal	203	219	258	387	460	1,084	2,031	2,322	1,727	1,002	650	443
	Dry	247	291	350	726	829	1,577	2,635	2,892	2,203	1,344	696	379
	Critical	523	613	1,180	1,667	1,821	2,486	3,228	3,725	3,412	2,188	1,094	749

Table 94: Simulated Electrical Conductivity at Sacramento River at Emmanton (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1,935	2,114	890	607	234
1922	Above Normal	190	185	179	182	252	875	1,689	1,884	1,790	354	203	209
1923	Below Normal	232	203	201	338	443	1,020	1,622	1,847	2,381	2,142	1,553	1,553
1924	Critical	388	775	1,580	1,630	2,122	2,569	3,048	3,862	3,559	1,827	1,688	210
1925	Dry	195	194	217	361	811	1,692	2,752	3,166	2,781	2,811	1,006	235
1926	Dry	245	208	243	808	1,215	1,716	2,238	3,161	671	370	218	184
1927	Wet	183	179	185	231	250	766	1,580	2,215	1,027	741	331	331
1928	Above Normal	180	184	195	353	413	852	1,652	2,204	2,255	1,912	1,635	770
1929	Critical	479	792	923	1,368	1,669	2,554	3,207	3,709	3,766	1,248	449	259
1930	Dry	190	219	335	956	1,059	2,021	2,971	3,105	2,774	2,664	1,636	1,228
1931	Critical	1,120	1,144	1,906	1,915	1,727	2,579	3,019	3,686	3,580	624	275	275
1932	Dry	249	335	279	329	813	1,687	2,531	2,833	2,603	2,511	1,013	731
1933	Critical	497	423	810	1,451	1,876	2,522	3,032	3,684	3,543	1,750	556	286
1934	Critical	277	322	852	1,094	1,658	2,615	3,351	3,543	2,638	2,582	438	247
1935	Below Normal	200	183	185	218	373	1,195	2,006	2,740	2,636	2,264	278	278
1936	Below Normal	192	186	195	305	369	1,124	1,789	2,466	2,626	2,354	1,303	242
1937	Below Normal	209	197	199	252	534	1,307	2,281	2,908	468	181	194	195
1938	Wet	183	182	180	185	273	894	572	446	952	1,326	1,310	774
1939	Dry	344	403	401	876	691	1,935	3,241	2,760	2,519	2,172	355	355
1940	Above Normal	182	178	192	330	273	709	1,643	1,992	2,371	304	188	186
1941	Wet	182	180	180	193	320	921	928	1,212	1,840	222	186	179
1942	Wet	187	184	183	183	295	982	727	1,032	746	219	186	183
1943	Wet	182	187	189	340	403	931	1,930	2,223	2,328	1,863	1,369	1,369
1944	Dry	208	274	379	630	729	1,555	2,504	3,018	1,731	812	1,001	220
1945	Below Normal	208	230	253	355	435	1,046	1,836	2,075	1,697	205	182	189
1946	Below Normal	202	220	234	374	458	1,010	2,247	2,579	2,569	1,172	1,107	515
1947	Dry	238	263	377	774	683	1,631	3,133	3,104	2,327	2,760	1,240	1,240
1948	Below Normal	266	194	186	216	444	803	1,451	2,046	2,196	1,550	1,607	1,053
1949	Dry	214	221	258	488	801	1,244	2,174	2,875	2,521	2,389	742	214
1950	Below Normal	192	197	213	332	615	1,280	1,686	2,357	217	181	189	183
1951	Above Normal	184	195	216	325	287	764	1,503	1,924	2,070	297	193	193
1952	Wet	185	179	177	182	226	595	339	514	1,304	282	181	187
1953	Wet	191	211	186	187	301	1,028	906	1,156	1,162	1,216	336	183
1954	Above Normal	181	179	184	330	316	786	1,696	2,313	1,815	455	265	266
1955	Dry	368	457	426	777	926	2,012	2,753	2,957	2,798	218	183	183
1956	Wet	183	190	182	187	298	1,031	643	581	1,178	1,364	1,264	251
1957	Above Normal	181	195	205	299	368	876	2,013	787	657	343	204	184
1958	Wet	184	182	179	181	293	790	378	522	1,298	1,621	317	189
1959	Below Normal	192	299	450	592	453	1,160	2,469	2,794	2,468	1,903	1,785	1,785
1960	Dry	210	265	339	767	685	1,570	2,436	2,821	2,250	1,322	1,350	311
1961	Dry	215	292	431	868	944	1,095	2,337	2,919	2,951	1,349	1,629	237
1962	Below Normal	194	229	258	551	402	934	2,469	335	325	241	304	188
1963	Wet	189	181	186	219	231	697	1,580	1,783	453	503	334	334
1964	Dry	406	491	356	752	797	1,285	2,664	2,853	1,747	203	181	185
1965	Wet	187	181	187	305	382	1,030	1,929	2,380	593	416	213	190
1966	Below Normal	185	242	281	508	434	904	1,849	2,040	1,749	321	210	184
1967	Wet	185	191	180	181	210	540	332	369	1,125	1,201	322	322
1968	Below Normal	181	207	328	540	408	910	2,324	2,511	1,969	501	190	192
1969	Wet	194	188	183	194	284	927	564	489	988	201	180	182
1970	Wet	182	192	244	359	297	778	2,087	2,512	894	197	182	182
1971	Wet	179	183	183	211	246	732	845	1,261	1,803	1,175	785	785
1972	Below Normal	192	241	403	620	537	996	2,285	3,144	788	257	194	187
1973	Above Normal	183	192	208	267	304	909	1,872	2,194	206	181	179	182
1974	Wet	180	179	189	201	288	956	569	762	1,357	879	621	199
1975	Wet	182	186	186	186	298	943	626	543	731	939	1,234	1,234
1976	Critical	364	641	1,449	2,025	1,624	2,602	3,913	3,433	3,194	2,682	2,265	1,619
1977	Critical	1,263	1,152	2,065	2,684	2,649	2,796	3,543	3,837	3,763	1,691	219	192
1978	Above Normal	191	193	200	214	333	995	1,791	2,003	2,357	1,784	514	214
1979	Below Normal	192	200	215	251	517	1,390	2,219	2,721	1,812	680	189	189
1980	Above Normal	189	200	212	234	389	1,178	1,748	2,361	2,456	1,744	393	202
1981	Dry	186	225	434	774	821	1,644	2,580	2,376	321	180	192	181
1982	Wet	192	180	182	188	326	1,045	340	186	184	184	196	186
1983	Wet	181	184	182	182	191	190	180	211	178	180	187	187
1984	Wet	181	194	249	352	315	874	2,047	1,871	294	209	432	506
1985	Dry	350	360	303	726	770	1,169	2,057	2,367	2,186	1,038	414	183
1986	Wet	184	201	218	304	412	1,033	1,815	2,303	2,451	2,418	1,415	498
1987	Dry	209	260	422	850	781	2,006	3,127	3,119	2,967	1,392	349	349
1988	Critical	486	621	874	1,004	1,361	2,617	3,224	3,933	2,949	2,826	1,329	1,102
1989	Dry	196	187	244	632	707	1,215	2,602	2,755	2,659	1,710	695	463
1990	Critical	480	496	1,264	2,241	1,874	2,641	3,345	3,767	3,661	3,642	3,180	2,011
1991	Critical	322	254	882	2,403	2,164	2,491	3,249	4,118	3,526	3,506	2,357	2,357
1992	Critical	229	293	823	1,077	1,826	2,796	3,579	3,610	3,386	2,180	233	198
1993	Above Normal	188	181	183	182	281	955	1,742	2,058	2,291	1,646	1,441	555
1994	Critical	342	395	628	1,111	1,185	1,394	2,632	3,153	2,321	1,794	218	184
1995	Wet	179	183	178	181	199	298	254	526	1,448	381	191	191
1996	Wet	182	182	181	195	352	1,065	886	1,527	1,073	185	181	187
1997	Wet	192	203	254	477	436	994	2,495	3,023	2,308	877	198	185
1998	Wet	184	182	181	179	192	207	185	250	196	179	183	183
1999	Wet	180	184	195	257	311	879	1,130	1,580	1,587	1,617	335	335
2000	Above Normal	182	188	203	368	336	840	1,844	2,038	2,026	1,262	757	307
2001	Dry	202	259	523	1,068	951	1,987	3,298	3,195	2,875	385	190	190
2002	Dry	197	213	314	637	766	1,090	2,509	3,005	1,071	253	184	187
2003	Above Normal	189	186	181	211	275	783	1,563					
	Average	250	275	382	584	665	1,286	1,978	2,249	1,896	1,178	662	436
	Wet	184	186	192	232	293	813	995	1,211	1,134	792	487	367
	Above Normal	185	188	197	275	319	877	1,730	1,974	1,867	931	548	292
	Below Normal	203	216	257	389	459	1,077	2,038	2,326	1,707	997	663	495
	Dry	246	285	349	726	831	1,586	2,661	2,911	2,208	1,363	699	382
	Critical	521	609	1,171	1,667	1,811	2,515	3,262	3,695	3,324	2,196	1,101	745

Table 95: Simulated Electrical Conductivity at San Joaquin River at Jersey Point (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								2,366	2,068	1,584	1,006	443
1922	Above Normal	225	203	205	207	243	938	2,032	2,292	2,462	970	248	228
1923	Below Normal	245	233	232	269	622	1,270	2,038	2,187	2,222	2,366	1,894	1,894
1924	Critical	324	456	1,116	1,654	1,473	1,434	1,933	2,630	2,477	2,475	2,338	553
1925	Dry	232	222	230	253	612	1,480	2,486	2,282	2,143	2,364	2,000	604
1926	Dry	271	311	254	558	1,168	1,632	2,472	2,484	1,162	665	359	231
1927	Wet	212	193	213	225	305	878	1,997	2,338	1,504	1,152	617	617
1928	Above Normal	204	200	223	315	395	1,175	2,156	2,520	2,580	2,290	2,340	1,621
1929	Critical	550	487	554	744	1,273	1,451	2,081	2,479	2,592	2,214	968	418
1930	Dry	238	211	299	591	1,162	1,609	2,653	2,299	2,012	2,058	2,420	1,534
1931	Critical	850	809	1,234	1,295	1,745	1,577	1,944	2,500	2,405	1,012	418	418
1932	Dry	260	265	282	259	489	1,589	2,847	2,086	1,819	2,095	1,494	946
1933	Critical	667	369	533	824	1,121	1,378	1,949	2,501	2,416	2,381	1,162	471
1934	Critical	277	279	530	665	993	1,460	2,183	2,349	2,565	2,392	1,166	303
1935	Below Normal	246	210	219	219	473	1,029	2,192	2,418	2,233	2,382	804	804
1936	Below Normal	242	204	221	246	542	976	2,075	2,184	2,123	2,333	1,453	418
1937	Below Normal	303	250	219	221	397	981	2,073	2,136	814	219	221	326
1938	Wet	283	226	213	224	234	754	700	422	1,157	2,184	2,068	1,234
1939	Dry	490	314	387	846	1,244	1,174	2,125	2,224	2,185	2,335	1,048	1,048
1940	Above Normal	212	198	218	279	318	908	2,078	2,286	2,591	909	236	251
1941	Wet	228	208	203	198	278	989	1,328	1,320	2,241	673	231	220
1942	Wet	207	211	211	195	246	874	878	1,027	1,032	454	230	219
1943	Wet	234	225	214	248	358	970	2,182	2,515	2,385	2,428	2,225	2,225
1944	Dry	278	262	350	603	1,212	1,553	2,575	2,475	2,364	1,491	1,339	462
1945	Below Normal	279	254	253	328	611	1,264	2,311	2,334	2,388	527	199	221
1946	Below Normal	235	230	249	310	704	1,254	2,387	2,541	2,742	2,036	1,362	1,160
1947	Dry	416	241	354	705	1,196	1,500	2,175	2,457	2,560	2,187	2,163	2,163
1948	Below Normal	313	290	219	228	584	1,246	1,930	2,222	2,166	2,437	2,089	663
1949	Dry	248	216	246	335	1,087	1,601	2,216	2,164	2,292	2,180	1,335	378
1950	Below Normal	215	238	237	297	631	1,203	2,237	2,663	483	221	256	228
1951	Above Normal	203	205	231	299	366	1,013	2,079	2,287	2,633	818	242	242
1952	Wet	225	207	189	207	220	528	390	511	1,625	809	209	203
1953	Wet	215	225	213	216	366	1,053	1,526	1,493	1,841	2,145	1,051	232
1954	Above Normal	195	192	211	293	377	861	2,066	2,438	2,723	1,097	362	345
1955	Dry	358	380	360	502	1,088	1,302	2,085	2,153	2,819	514	273	273
1956	Wet	212	205	215	195	267	942	894	809	1,393	2,191	1,686	655
1957	Above Normal	216	211	231	279	360	1,097	2,369	1,326	946	725	281	229
1958	Wet	246	224	190	200	250	693	475	511	1,517	2,352	1,008	241
1959	Below Normal	212	256	403	680	711	973	1,993	2,615	2,513	2,233	2,334	2,334
1960	Dry	296	231	297	693	1,216	1,619	2,849	2,097	2,622	2,416	1,900	927
1961	Dry	288	252	395	907	1,241	1,618	2,045	2,152	2,314	2,342	1,754	539
1962	Below Normal	233	231	268	507	652	1,185	2,472	1,238	438	522	413	270
1963	Wet	203	206	215	207	263	866	1,972	2,242	1,264	722	598	598
1964	Dry	383	372	331	606	1,338	1,757	2,127	2,340	2,679	493	203	205
1965	Wet	203	205	219	249	354	988	1,977	2,305	972	493	332	214
1966	Below Normal	206	240	275	499	687	1,275	2,323	2,678	2,701	1,024	275	220
1967	Wet	203	234	202	209	230	471	372	366	1,393	1,808	877	877
1968	Below Normal	194	212	334	614	657	1,152	2,170	2,520	2,357	1,112	278	313
1969	Wet	299	253	224	226	242	821	743	443	1,226	504	231	215
1970	Wet	201	205	241	321	389	953	2,128	2,444	1,353	323	199	194
1971	Wet	190	196	211	218	324	1,003	1,340	1,414	2,291	1,983	1,423	1,423
1972	Below Normal	284	221	400	706	679	1,335	2,249	2,658	1,226	499	245	225
1973	Above Normal	205	202	230	242	376	1,045	1,992	2,317	482	196	195	197
1974	Wet	200	197	215	202	302	1,052	903	728	1,589	1,384	991	346
1975	Wet	210	207	220	194	312	1,054	947	515	895	1,559	2,024	2,024
1976	Critical	735	518	947	1,768	2,193	2,150	2,765	2,359	2,680	2,142	1,902	1,369
1977	Critical	853	801	1,128	1,828	1,738	1,869	2,400	2,646	2,679	2,334	516	237
1978	Above Normal	257	270	242	224	362	1,177	2,126	2,642	2,702	2,229	882	286
1979	Below Normal	232	217	233	232	647	1,330	2,487	2,633	2,499	1,336	288	288
1980	Above Normal	274	239	234	232	288	833	1,941	2,143	2,232	2,685	1,291	298
1981	Dry	211	222	376	807	1,338	1,649	2,680	2,828	1,091	214	225	219
1982	Wet	242	216	198	201	254	884	382	188	201	243	308	297
1983	Wet	261	236	226	224	216	198	186	198	191	228	247	247
1984	Wet	197	208	248	295	416	990	2,105	2,203	959	278	669	796
1985	Dry	403	370	322	705	1,292	1,685	2,361	2,304	2,317	1,745	763	276
1986	Wet	267	243	217	238	338	988	1,903	2,194	2,371	2,525	1,862	1,081
1987	Dry	338	234	430	858	1,306	1,323	2,070	2,362	2,300	2,328	1,000	1,000
1988	Critical	335	545	592	817	1,823	1,675	2,095	2,666	2,274	2,739	1,709	839
1989	Dry	310	203	237	579	1,260	1,732	2,311	2,584	2,572	2,219	1,498	607
1990	Critical	499	430	753	1,770	1,881	1,590	2,205	2,534	2,509	2,521	2,241	1,765
1991	Critical	868	262	651	1,624	1,993	1,587	2,190	2,905	2,338	2,645	2,204	2,204
1992	Critical	299	269	548	780	1,227	2,163	2,690	2,510	2,391	2,520	553	252
1993	Above Normal	218	196	201	193	283	1,103	2,159	2,572	2,294	2,481	2,184	1,358
1994	Critical	422	359	475	983	2,149	2,072	1,990	2,702	2,067	2,772	580	221
1995	Wet	244	219	194	204	225	268	272	496	1,613	1,113	257	257
1996	Wet	230	210	211	201	318	1,066	1,254	1,127	1,186	276	254	241
1997	Wet	228	217	252	368	413	1,160	2,365	2,578	2,803	1,568	349	315
1998	Wet	255	221	214	213	217	209	212	219	253	191	197	217
1999	Wet	199	200	227	227	345	1,085	1,583	1,692	2,214	2,223	1,073	1,073
2000	Above Normal	219	202	231	306	364	1,011	2,119	2,199	2,427	2,248	1,358	668
2001	Dry	273	227	387	684	1,204	1,301	2,074	2,270	2,627	1,096	241	213
2002	Dry	222	237	297	587	1,298	1,585	2,181	2,321	1,719	600	215	204
2003	Above Normal	211	215	210	218	329	1,047	2,179					
	Average	295	265	328	490	740	1,202	1,902	2,017	1,945	1,546	975	642
	Wet	227	215	215	227	295	836	1,193	1,242	1,441	1,223	816	625
	Above Normal	220	211	222	257	338	1,017	2,108	2,282	2,179	1,519	885	514
	Below Normal	246	235	269	383	614	1,177	2,210	2,359	1,922	1,375	865	669
	Dry	306	265	324	615	1,153	1,539	2,352	2,327	2,200	1,630	1,124	657
	Critical	557	465	755	1,229	1,634	1,700	2,202	2,565	2,449	2,346	1,313	754

Table 96: Simulated Electrical Conductivity at San Joaquin River at Jersey Point (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								2,353	2,057	1,578	1,005	440
1922	Above Normal	227	204	205	207	243	938	2,028	2,277	2,412	955	247	228
1923	Below Normal	244	229	231	267	631	1,259	2,002	2,177	2,229	2,369	1,887	1,887
1924	Critical	328	464	1,121	1,656	1,484	1,434	1,931	2,620	2,301	2,470	2,422	559
1925	Dry	242	233	230	253	613	1,484	2,491	2,266	2,157	2,363	1,992	600
1926	Dry	266	276	254	563	1,204	1,649	2,507	2,487	1,118	645	361	231
1927	Wet	214	193	212	225	304	878	1,993	2,325	1,426	1,096	604	604
1928	Above Normal	205	202	224	315	392	1,172	2,156	2,510	2,602	2,264	2,305	1,619
1929	Critical	564	485	556	743	1,280	1,453	2,082	2,466	2,559	2,221	978	418
1930	Dry	236	211	300	586	1,161	1,611	2,652	2,308	2,018	2,058	2,419	1,534
1931	Critical	852	808	1,233	1,285	1,724	1,575	1,948	2,474	2,383	997	416	416
1932	Dry	258	273	280	258	474	1,573	2,834	2,076	1,813	2,088	1,386	877
1933	Critical	617	358	532	822	1,145	1,397	1,942	2,476	2,360	2,419	1,044	410
1934	Critical	271	280	534	664	991	1,462	2,187	2,332	2,378	2,610	1,347	315
1935	Below Normal	241	212	218	218	471	1,028	2,220	2,347	2,166	2,434	836	836
1936	Below Normal	243	206	220	246	547	931	2,044	2,173	2,104	2,357	1,792	481
1937	Below Normal	303	248	219	220	410	984	2,114	2,323	797	214	218	328
1938	Wet	285	226	214	223	234	755	687	408	1,123	2,162	2,078	1,230
1939	Dry	459	306	385	836	1,234	1,184	2,134	2,246	2,166	2,356	1,065	1,065
1940	Above Normal	214	199	213	276	316	909	2,061	2,286	2,600	951	238	247
1941	Wet	228	205	202	203	281	987	1,321	1,306	2,218	650	226	212
1942	Wet	205	213	209	195	245	874	876	1,020	976	429	224	217
1943	Wet	228	222	214	247	361	987	2,181	2,359	2,207	2,488	2,183	2,183
1944	Dry	278	245	347	594	1,212	1,550	2,652	2,572	2,298	1,445	1,335	464
1945	Below Normal	276	251	251	328	612	1,266	2,310	2,319	2,230	490	199	220
1946	Below Normal	233	225	248	308	707	1,310	2,378	2,531	2,739	2,019	1,349	1,144
1947	Dry	402	250	354	713	1,217	1,541	2,188	2,364	2,520	2,385	2,297	2,297
1948	Below Normal	305	263	217	223	588	1,240	1,942	2,335	2,448	2,313	2,216	1,779
1949	Dry	472	221	246	332	1,103	1,605	2,336	2,200	2,269	2,198	1,357	388
1950	Below Normal	214	225	234	290	577	1,196	2,230	2,645	467	216	255	227
1951	Above Normal	204	206	232	298	367	1,019	2,081	2,275	2,649	822	242	242
1952	Wet	223	206	189	207	220	527	388	500	1,583	797	209	203
1953	Wet	212	220	213	216	366	978	1,394	1,374	1,712	2,051	1,026	230
1954	Above Normal	194	192	211	292	374	854	2,059	2,447	2,596	1,015	355	364
1955	Dry	344	335	367	507	1,091	1,465	2,153	2,183	2,840	515	272	272
1956	Wet	213	206	214	198	262	841	750	593	1,123	2,085	1,749	691
1957	Above Normal	218	219	232	273	359	1,087	2,358	1,304	888	688	278	229
1958	Wet	243	221	188	199	250	692	472	499	1,478	2,324	993	240
1959	Below Normal	220	261	405	690	716	978	1,991	2,554	2,483	2,246	2,357	2,357
1960	Dry	292	229	298	686	1,211	1,609	2,840	2,099	2,625	2,416	1,903	936
1961	Dry	282	249	393	902	1,239	1,631	2,151	2,190	2,302	2,353	1,768	539
1962	Below Normal	232	231	273	538	671	1,239	2,508	1,253	427	507	412	267
1963	Wet	203	207	217	207	262	864	1,968	2,231	1,213	695	587	587
1964	Dry	359	360	331	600	1,329	1,757	2,155	2,357	2,577	472	202	204
1965	Wet	201	206	217	249	354	999	1,984	2,361	965	477	329	214
1966	Below Normal	209	228	275	498	685	1,273	2,317	2,658	2,578	978	273	220
1967	Wet	203	231	202	207	231	466	369	358	1,304	1,735	865	865
1968	Below Normal	194	215	339	625	654	1,152	2,168	2,517	2,344	1,102	272	314
1969	Wet	302	254	223	227	245	825	741	434	1,150	475	231	215
1970	Wet	202	209	250	329	390	958	2,102	2,433	1,300	311	198	194
1971	Wet	190	194	210	217	324	1,002	1,337	1,406	2,271	1,949	1,416	1,416
1972	Below Normal	288	219	399	704	675	1,331	2,236	2,650	1,232	515	246	225
1973	Above Normal	207	206	234	244	380	1,040	2,017	2,487	479	196	194	196
1974	Wet	199	198	214	202	303	1,056	888	687	1,509	1,348	1,020	355
1975	Wet	209	207	220	195	309	1,048	941	513	858	1,502	1,999	1,999
1976	Critical	697	492	938	1,779	2,173	2,154	2,784	2,335	2,653	2,173	1,944	1,381
1977	Critical	856	802	1,129	1,828	1,738	1,866	2,399	2,633	2,665	2,340	518	234
1978	Above Normal	251	264	247	226	351	1,163	2,114	2,624	2,708	2,282	891	288
1979	Below Normal	232	217	232	232	645	1,295	2,466	2,619	2,371	1,258	281	281
1980	Above Normal	274	239	234	234	279	777	1,896	2,129	2,234	2,697	1,252	289
1981	Dry	212	216	372	790	1,329	1,639	2,650	2,829	1,081	213	225	219
1982	Wet	240	215	199	203	254	879	381	188	200	243	308	299
1983	Wet	261	236	226	225	216	198	186	197	191	228	247	247
1984	Wet	199	215	249	293	419	996	2,100	2,043	851	266	654	780
1985	Dry	377	316	321	705	1,294	1,674	2,336	2,296	2,322	1,743	766	274
1986	Wet	268	244	219	237	342	1,016	1,914	2,186	2,363	2,548	1,904	1,058
1987	Dry	317	235	428	846	1,296	1,316	2,074	2,364	2,268	2,298	993	993
1988	Critical	335	537	593	816	1,830	1,689	2,107	2,637	2,280	2,720	1,742	870
1989	Dry	309	201	238	584	1,263	1,728	2,353	2,598	2,550	2,147	1,456	601
1990	Critical	471	406	744	1,713	1,894	1,605	2,213	2,529	2,454	2,571	2,182	1,675
1991	Critical	806	256	604	1,513	2,067	1,607	2,118	2,860	2,314	2,655	2,213	2,213
1992	Critical	294	265	542	762	1,227	2,189	2,701	2,491	2,371	2,519	553	252
1993	Above Normal	218	197	206	196	277	1,111	2,156	2,566	2,530	2,301	2,275	1,499
1994	Critical	430	355	473	1,019	2,108	2,053	2,185	2,870	2,057	2,726	588	221
1995	Wet	246	221	195	205	225	267	270	482	1,564	1,094	256	256
1996	Wet	228	212	210	200	319	1,067	1,253	1,124	1,140	271	255	241
1997	Wet	227	217	245	323	416	1,190	2,339	2,560	2,757	1,532	344	313
1998	Wet	258	221	214	212	217	209	211	217	247	190	197	217
1999	Wet	200	201	226	228	346	1,088	1,569	1,673	2,091	2,198	1,026	1,026
2000	Above Normal	220	202	230	302	364	1,014	2,106	2,174	2,288	2,321	1,459	681
2001	Dry	270	228	386	680	1,206	1,453	2,227	2,288	2,646	1,089	239	214
2002	Dry	223	228	295	576	1,301	1,581	2,170	2,336	1,652	578	214	204
2003	Above Normal	211	212	210	218	330	1,049	2,175					
	Average	294	262	327	487	741	1,205	1,905	2,010	1,908	1,537	984	657
	Wet	226	215	215	226	296	833	1,177	1,211	1,378	1,198	813	619
	Above Normal	220	212	223	257	336	1,011	2,101	2,286	2,170	1,506	895	527
	Below Normal	245	231	269	385	613	1,177	2,209	2,364	1,901	1,358	900	755
	Dry	311	256	324	612	1,154	1,558	2,384	2,336	2,179	1,631	1,125	662
	Critical	543	459	750	1,217	1,638	1,707	2,216	2,560	2,398	2,368	1,329	747

Table 97: Simulated Electrical Conductivity at San Joaquin River at Brandt Bridge (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								677	653	763	806	659
1922	Above Normal	555	358	354	340	530	521	523	554	573	654	569	542
1923	Below Normal	734	381	379	561	634	539	499	521	577	776	823	823
1924	Critical	1,014	702	664	707	678	650	629	668	656	809	897	908
1925	Dry	951	448	418	653	674	624	588	616	632	810	863	991
1926	Dry	1,005	561	544	704	687	636	594	640	608	801	855	775
1927	Wet	796	424	394	644	666	596	558	540	542	764	783	783
1928	Above Normal	511	426	457	677	677	621	583	592	618	803	826	990
1929	Critical	1,005	623	584	704	687	645	605	658	660	846	906	995
1930	Dry	1,002	621	582	706	685	643	599	655	655	844	907	994
1931	Critical	1,011	747	697	709	685	652	628	682	693	750	843	843
1932	Dry	896	572	505	669	661	609	579	601	619	820	877	994
1933	Critical	1,003	627	580	699	680	635	607	644	674	819	881	996
1934	Critical	1,006	727	662	706	678	651	630	681	686	843	819	1,010
1935	Below Normal	893	421	410	640	633	607	572	586	618	824	846	846
1936	Below Normal	335	360	413	596	646	540	529	541	591	783	769	415
1937	Below Normal	382	280	267	591	636	540	528	556	554	522	551	376
1938	Wet	330	251	258	251	384	355	350	417	509	728	762	836
1939	Dry	818	509	502	702	681	627	576	595	635	824	736	736
1940	Above Normal	343	332	381	538	636	592	532	549	579	645	628	420
1941	Wet	310	263	273	467	488	484	507	508	523	650	454	298
1942	Wet	417	317	281	413	465	371	361	487	498	653	346	266
1943	Wet	304	294	375	457	615	520	521	527	530	716	751	751
1944	Dry	796	432	464	647	662	618	591	585	593	776	780	506
1945	Below Normal	351	387	373	510	601	506	514	494	552	495	564	460
1946	Below Normal	497	398	378	539	649	589	553	534	558	705	745	841
1947	Dry	992	609	570	688	692	648	607	616	628	796	850	850
1948	Below Normal	1,002	582	545	635	643	621	597	615	635	809	868	993
1949	Dry	957	625	600	659	681	638	609	636	631	798	853	991
1950	Below Normal	993	541	448	596	669	633	592	618	629	387	325	253
1951	Above Normal	443	395	261	525	659	623	594	588	616	755	569	569
1952	Wet	428	229	203	301	385	352	363	535	549	723	610	635
1953	Wet	904	383	348	527	614	607	579	581	621	782	808	941
1954	Above Normal	982	529	489	663	679	634	607	617	639	775	770	987
1955	Dry	1,002	613	592	703	702	658	617	657	663	701	371	371
1956	Wet	365	385	376	411	490	476	431	507	569	751	776	895
1957	Above Normal	943	391	359	564	651	612	575	565	619	774	790	746
1958	Wet	481	210	195	327	433	362	363	518	560	718	750	720
1959	Below Normal	838	478	480	691	689	641	578	615	661	814	840	840
1960	Dry	1,001	615	578	707	701	673	642	697	689	830	914	1,022
1961	Dry	1,005	702	665	708	707	695	665	716	700	826	942	741
1962	Below Normal	734	510	481	696	671	624	594	632	679	829	859	841
1963	Wet	939	458	421	596	641	599	564	587	610	817	827	827
1964	Dry	1,004	620	582	703	693	656	617	647	669	750	468	392
1965	Wet	513	354	351	481	636	464	480	541	464	612	645	604
1966	Below Normal	870	512	504	702	700	661	629	630	687	757	778	914
1967	Wet	560	268	227	289	300	340	347	493	576	735	763	763
1968	Below Normal	917	461	453	682	693	636	603	615	646	793	653	378
1969	Wet	401	277	245	245	383	364	369	408	505	626	280	336
1970	Wet	366	363	401	490	640	609	560	547	615	788	764	924
1971	Wet	850	385	372	562	627	612	578	552	636	797	823	823
1972	Below Normal	1,003	573	535	705	697	649	624	634	634	798	849	703
1973	Above Normal	614	433	440	523	650	533	516	502	517	619	527	612
1974	Wet	318	368	394	446	587	501	472	431	487	710	729	344
1975	Wet	317	378	376	436	576	492	507	428	512	762	776	776
1976	Critical	1,003	612	574	706	703	645	630	658	676	820	887	993
1977	Critical	1,010	698	631	710	697	715	727	761	756	865	772	660
1978	Above Normal	682	387	324	404	555	495	451	584	523	753	680	370
1979	Below Normal	323	390	306	448	653	538	540	518	561	770	396	396
1980	Above Normal	396	358	367	388	464	464	494	480	509	731	751	903
1981	Dry	868	489	454	694	673	645	609	588	637	792	727	292
1982	Wet	307	225	210	367	421	346	250	203	268	380	346	325
1983	Wet	258	281	270	241	225	189	234	350	208	303	339	339
1984	Wet	364	369	364	530	633	537	463	447	499	779	775	831
1985	Dry	886	540	506	691	701	620	569	580	589	766	825	460
1986	Wet	310	244	225	405	608	496	445	436	444	716	775	983
1987	Dry	922	597	554	706	703	666	631	649	665	813	876	876
1988	Critical	1,010	683	643	707	709	712	669	741	706	833	932	1,166
1989	Dry	1,019	718	617	708	689	668	601	689	694	836	946	1,152
1990	Critical	1,023	713	651	710	697	687	666	698	688	854	985	1,255
1991	Critical	1,007	699	653	708	703	695	699	734	731	888	1,012	1,012
1992	Critical	1,002	746	791	784	697	704	720	794	798	911	700	772
1993	Above Normal	849	583	556	487	570	548	517	572	612	834	956	1,000
1994	Critical	1,011	684	637	748	735	708	688	754	739	866	742	821
1995	Wet	364	252	210	326	262	342	478	508	534	755	768	768
1996	Wet	324	360	317	452	635	525	503	507	442	317	243	308
1997	Wet	238	339	365	546	644	577	527	531	617	781	667	358
1998	Wet	336	283	275	245	256	304	325	357	477	657	543	229
1999	Wet	401	383	352	472	658	577	540	546	595	796	778	778
2000	Above Normal	325	394	388	558	667	594	526	509	554	774	780	937
2001	Dry	740	557	538	705	702	662	609	642	657	806	795	990
2002	Dry	1,002	622	587	706	703	655	621	695	703	830	904	996
2003	Above Normal	1,002	564	529	707	697	651	623					
	Average	707	469	446	572	618	573	549	578	599	747	735	729
	Wet	442	321	311	420	510	461	449	481	515	685	649	632
	Above Normal	637	429	409	531	620	574	545	566	584	740	721	728
	Below Normal	705	448	427	614	658	595	568	579	613	719	705	649
	Dry	937	580	548	692	689	647	607	639	648	801	805	785
	Critical	1,009	688	647	716	696	675	658	706	705	842	865	953

Table 98: Simulated Electrical Conductivity at San Joaquin River at Brandt Bridge (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								670	619	762	806	650
1922	Above Normal	501	350	356	340	530	520	522	549	548	654	574	535
1923	Below Normal	768	353	381	560	634	538	498	521	572	767	823	823
1924	Critical	996	698	663	707	678	650	629	663	624	807	897	882
1925	Dry	791	391	416	654	676	625	589	610	592	791	853	980
1926	Dry	943	496	546	704	689	637	595	636	582	799	854	759
1927	Wet	692	376	383	640	667	597	556	535	516	755	779	779
1928	Above Normal	462	386	448	675	678	622	582	589	587	799	824	969
1929	Critical	927	620	595	703	690	647	607	656	635	844	905	994
1930	Dry	878	612	578	705	702	654	601	654	655	843	907	994
1931	Critical	1,007	743	694	709	685	652	628	678	653	747	841	841
1932	Dry	759	464	493	673	663	610	581	597	595	834	877	992
1933	Critical	905	569	588	704	683	638	610	641	637	811	880	994
1934	Critical	966	719	664	707	679	651	634	675	644	831	816	970
1935	Below Normal	753	372	411	640	634	607	572	582	581	816	844	844
1936	Below Normal	321	331	411	598	654	540	528	534	561	778	762	456
1937	Below Normal	379	279	289	588	636	539	527	553	530	521	560	393
1938	Wet	332	265	261	254	384	355	350	413	492	727	762	814
1939	Dry	722	504	502	702	683	628	576	593	606	822	736	736
1940	Above Normal	332	312	381	547	638	591	530	546	552	644	629	453
1941	Wet	304	248	251	403	487	484	506	502	504	650	481	297
1942	Wet	397	295	281	412	465	372	361	484	481	653	394	268
1943	Wet	313	286	378	458	621	519	520	523	511	716	751	751
1944	Dry	701	383	466	646	663	619	592	583	569	775	780	581
1945	Below Normal	341	369	373	546	602	505	513	493	525	481	563	457
1946	Below Normal	465	377	379	538	650	589	540	515	527	697	744	818
1947	Dry	913	520	548	694	695	649	607	612	611	816	850	850
1948	Below Normal	890	488	543	638	644	622	597	609	603	804	863	983
1949	Dry	808	559	601	661	683	638	610	632	601	796	852	957
1950	Below Normal	811	447	453	597	670	634	592	610	599	451	342	254
1951	Above Normal	419	365	266	536	660	624	594	583	578	747	552	552
1952	Wet	429	223	213	307	385	352	363	530	525	722	610	624
1953	Wet	817	350	350	531	616	608	579	575	587	777	807	941
1954	Above Normal	821	460	484	661	680	635	605	611	605	772	769	969
1955	Dry	877	536	593	704	702	659	617	651	627	832	378	378
1956	Wet	351	366	332	365	489	476	391	499	535	736	775	898
1957	Above Normal	836	356	360	566	652	612	574	561	590	773	790	729
1958	Wet	477	203	188	328	433	362	363	514	539	717	750	705
1959	Below Normal	739	419	480	696	691	641	577	611	627	812	840	840
1960	Dry	935	610	577	706	703	674	644	697	689	830	914	995
1961	Dry	945	695	664	708	707	695	665	709	656	822	942	729
1962	Below Normal	648	406	469	694	671	625	594	627	648	838	859	829
1963	Wet	779	397	420	595	641	599	563	579	571	804	822	822
1964	Dry	931	614	579	703	694	656	617	642	632	748	493	391
1965	Wet	481	326	351	488	636	464	479	536	450	611	644	594
1966	Below Normal	749	419	483	699	701	662	628	626	643	753	776	881
1967	Wet	534	263	228	307	297	340	346	490	538	734	763	763
1968	Below Normal	782	455	453	685	694	636	603	610	612	792	746	398
1969	Wet	412	277	242	256	383	364	369	406	487	625	283	332
1970	Wet	351	341	402	500	641	609	559	543	579	786	764	893
1971	Wet	735	349	372	573	628	612	578	547	601	794	822	822
1972	Below Normal	905	493	535	704	697	649	624	627	602	795	847	690
1973	Above Normal	555	378	417	508	648	532	514	498	487	622	577	603
1974	Wet	312	346	381	435	586	500	463	425	467	702	741	347
1975	Wet	306	361	378	417	575	491	505	428	508	753	775	775
1976	Critical	933	604	574	706	703	645	630	658	676	821	888	993
1977	Critical	1,010	698	632	710	697	715	727	751	725	861	772	785
1978	Above Normal	729	422	329	369	554	495	450	579	506	752	679	368
1979	Below Normal	315	368	298	450	653	538	538	515	532	758	442	442
1980	Above Normal	407	364	350	348	463	464	493	478	493	730	751	874
1981	Dry	744	430	454	695	674	646	609	585	605	790	721	304
1982	Wet	306	225	218	353	421	346	250	204	283	389	349	339
1983	Wet	257	282	273	243	225	189	234	347	210	311	348	348
1984	Wet	352	352	366	531	633	537	463	425	479	773	775	809
1985	Dry	756	464	509	692	702	620	570	577	563	762	825	487
1986	Wet	316	246	229	390	607	495	444	434	433	716	775	944
1987	Dry	782	587	560	706	703	667	633	644	625	804	875	875
1988	Critical	1,005	684	648	707	708	701	670	728	668	831	932	1,085
1989	Dry	956	616	627	708	690	671	602	682	653	833	946	997
1990	Critical	1,003	708	655	709	701	690	669	694	656	850	983	1,186
1991	Critical	835	645	657	707	706	699	705	725	684	880	1,009	1,009
1992	Critical	935	732	705	720	701	710	726	781	735	901	700	753
1993	Above Normal	724	469	471	410	568	548	515	567	580	830	953	998
1994	Critical	1,007	676	639	709	714	710	693	744	688	852	743	1,063
1995	Wet	361	259	219	319	261	341	477	501	513	752	766	766
1996	Wet	321	335	333	453	635	524	502	503	436	340	245	312
1997	Wet	234	328	345	481	642	580	495	524	572	764	670	377
1998	Wet	330	286	289	262	256	304	325	355	463	657	543	229
1999	Wet	386	366	353	480	659	577	540	543	559	783	777	777
2000	Above Normal	311	370	371	545	667	594	524	503	527	765	780	903
2001	Dry	665	486	542	705	702	663	610	639	620	801	795	989
2002	Dry	876	527	590	706	703	656	622	689	658	826	903	994
2003	Above Normal	906	449	511	706	699	652	623					
	Average	650	437	443	568	618	573	548	573	571	747	738	727
	Wet	419	306	309	415	511	461	445	476	494	683	653	628
	Above Normal	584	390	395	517	620	574	544	561	556	738	724	717
	Below Normal	633	398	426	617	659	595	567	574	583	719	715	651
	Dry	832	527	547	693	691	648	608	635	619	807	806	777
	Critical	961	675	643	708	695	676	661	699	669	836	864	963

Table 99: Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								684	649	765	798	647
1922	Above Normal	551	349	351	335	530	515	520	554	572	653	563	540
1923	Below Normal	737	366	376	559	633	528	495	521	578	786	821	821
1924	Critical	1,008	656	662	698	667	644	623	669	654	815	898	904
1925	Dry	951	419	420	653	671	616	582	616	632	820	861	1,000
1926	Dry	1,001	527	547	698	679	626	587	641	605	814	853	767
1927	Wet	795	402	392	647	663	587	552	538	541	773	779	779
1928	Above Normal	495	414	456	678	672	612	576	591	618	814	821	1,000
1929	Critical	1,000	582	589	698	679	637	598	659	660	864	898	1,000
1930	Dry	1,000	577	588	698	677	635	593	656	654	856	904	1,000
1931	Critical	1,005	693	694	698	673	644	622	684	692	749	845	845
1932	Dry	900	542	506	667	656	600	573	600	618	832	871	1,000
1933	Critical	1,000	582	585	692	672	626	601	645	674	829	881	1,001
1934	Critical	1,001	676	661	696	667	644	624	682	685	851	811	1,023
1935	Below Normal	883	399	409	641	626	599	566	585	619	837	841	841
1936	Below Normal	329	356	411	593	643	528	525	540	593	793	762	403
1937	Below Normal	376	275	264	592	633	529	524	556	553	520	549	368
1938	Wet	328	249	256	249	382	348	346	417	511	736	759	838
1939	Dry	802	477	507	698	673	617	569	594	636	835	722	722
1940	Above Normal	328	330	378	531	635	583	524	549	579	645	621	409
1941	Wet	306	261	271	466	485	479	504	507	523	653	443	293
1942	Wet	419	313	278	411	463	363	357	490	497	658	337	263
1943	Wet	303	293	373	452	615	509	517	526	529	723	750	750
1944	Dry	792	406	466	643	657	609	585	584	592	784	776	496
1945	Below Normal	347	382	370	502	600	495	511	492	553	492	564	456
1946	Below Normal	496	385	375	534	650	578	547	532	557	710	744	844
1947	Dry	1,000	564	575	679	688	639	599	616	628	807	849	849
1948	Below Normal	1,000	543	551	625	638	613	592	615	635	821	865	1,000
1949	Dry	952	588	604	648	678	629	603	635	630	807	845	1,000
1950	Below Normal	991	497	448	587	669	625	586	618	627	378	320	249
1951	Above Normal	446	388	252	525	662	614	588	587	616	756	549	549
1952	Wet	422	224	200	300	383	345	360	539	548	730	603	635
1953	Wet	912	347	345	520	612	601	572	579	622	792	803	949
1954	Above Normal	979	492	487	662	675	626	601	615	639	780	759	1,000
1955	Dry	1,000	579	597	697	698	650	610	658	663	699	356	356
1956	Wet	363	381	374	406	488	470	425	509	571	762	773	901
1957	Above Normal	944	354	360	558	650	603	569	564	621	782	782	726
1958	Wet	465	203	193	327	431	354	359	521	561	725	747	713
1959	Below Normal	838	442	481	689	681	632	573	614	663	826	834	834
1960	Dry	1,000	573	583	698	692	666	635	698	687	842	911	1,030
1961	Dry	1,000	658	662	698	698	691	659	717	698	835	948	723
1962	Below Normal	733	487	485	693	663	616	588	633	681	839	856	837
1963	Wet	941	428	423	590	638	592	559	588	609	833	821	821
1964	Dry	1,000	579	587	698	687	648	610	648	669	750	455	389
1965	Wet	514	347	346	475	640	451	477	542	459	616	644	601
1966	Below Normal	877	470	509	698	696	653	623	628	690	759	752	922
1967	Wet	543	258	224	287	298	335	343	496	578	745	755	755
1968	Below Normal	924	426	453	684	688	628	597	614	647	798	640	367
1969	Wet	401	274	243	242	381	357	365	408	508	629	268	336
1970	Wet	365	353	398	476	644	601	552	545	613	784	760	934
1971	Wet	843	355	371	554	623	604	572	549	639	808	817	817
1972	Below Normal	999	526	542	698	692	640	620	634	628	807	810	682
1973	Above Normal	609	421	438	514	653	520	511	500	515	620	521	614
1974	Wet	308	367	391	439	587	490	466	428	488	718	727	328
1975	Wet	315	377	371	430	576	483	503	424	514	774	771	771
1976	Critical	999	566	578	698	699	637	627	658	675	831	886	1,000
1977	Critical	1,000	632	634	699	685	718	726	762	755	871	756	653
1978	Above Normal	677	379	321	401	554	486	446	587	519	763	670	357
1979	Below Normal	320	387	300	440	658	527	535	516	562	781	382	382
1980	Above Normal	396	354	363	385	463	458	492	478	510	741	745	912
1981	Dry	863	460	452	697	664	639	602	586	637	797	712	279
1982	Wet	302	223	207	366	418	338	246	202	266	381	338	322
1983	Wet	253	281	269	238	222	185	233	352	203	302	339	339
1984	Wet	365	362	359	525	632	525	455	446	498	790	771	833
1985	Dry	886	506	506	688	699	610	562	579	587	777	821	443
1986	Wet	305	241	222	405	608	484	440	433	443	728	774	996
1987	Dry	911	553	566	698	698	659	624	648	665	829	872	872
1988	Critical	1,005	637	643	699	698	711	661	745	702	841	937	1,185
1989	Dry	1,001	618	620	697	656	662	595	694	693	849	949	1,169
1990	Critical	1,000	638	654	699	682	683	660	698	686	868	994	1,281
1991	Critical	981	657	650	699	691	693	696	736	730	902	1,023	1,023
1992	Critical	1,000	698	850	712	675	707	719	799	797	919	670	752
1993	Above Normal	843	552	567	474	568	542	511	573	613	847	961	1,000
1994	Critical	1,008	617	641	751	703	707	683	758	737	889	706	824
1995	Wet	348	250	208	324	258	337	480	507	534	763	748	748
1996	Wet	321	359	314	449	636	512	499	507	438	312	238	309
1997	Wet	234	330	361	542	643	567	520	530	618	792	643	335
1998	Wet	335	281	274	242	253	299	323	357	480	662	536	218
1999	Wet	403	378	348	465	664	566	534	545	597	807	769	769
2000	Above Normal	322	389	386	554	669	583	520	507	555	784	773	942
2001	Dry	729	540	543	699	698	655	603	642	656	808	787	1,001
2002	Dry	1,000	548	585	698	698	646	615	698	701	834	905	1,001
2003	Above Normal	1,000	514	540	699	692	644	618					
	Average	703	443	447	567	613	565	543	578	599	755	728	727
	Wet	439	313	308	416	509	453	445	480	515	692	643	629
	Above Normal	632	411	408	526	619	565	540	566	584	746	714	725
	Below Normal	704	424	427	610	655	585	563	578	613	725	696	643
	Dry	933	540	551	686	682	639	600	639	647	810	800	783
	Critical	1,001	636	653	703	683	671	653	708	704	852	859	958

Table 100: Simulated Electrical Conductivity at San Joaquin River at Vernalis (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								676	615	765	798	637
1922	Above Normal	496	343	354	335	529	514	518	549	546	654	568	533
1923	Below Normal	772	337	378	558	633	528	494	521	573	777	821	821
1924	Critical	990	655	661	698	667	644	623	665	621	814	898	876
1925	Dry	785	373	418	655	673	617	583	609	591	802	851	987
1926	Dry	936	468	548	699	682	628	588	637	579	814	852	750
1927	Wet	688	362	380	644	664	587	550	533	514	765	776	776
1928	Above Normal	446	377	445	676	673	613	576	587	586	812	819	977
1929	Critical	918	586	598	698	683	639	601	657	633	864	897	998
1930	Dry	870	581	584	699	698	646	595	656	654	856	903	1,000
1931	Critical	1,002	690	692	698	673	644	622	679	650	747	844	844
1932	Dry	758	444	495	671	658	602	574	596	593	848	870	998
1933	Critical	896	537	592	698	675	628	604	641	636	822	880	999
1934	Critical	959	678	663	698	667	644	628	675	640	841	809	980
1935	Below Normal	740	358	410	641	627	600	566	581	580	829	840	840
1936	Below Normal	313	327	409	596	652	527	524	533	562	789	754	445
1937	Below Normal	372	275	286	589	633	528	523	552	528	519	559	386
1938	Wet	330	263	259	251	382	348	346	414	493	736	759	814
1939	Dry	704	478	506	698	675	619	569	592	606	835	722	722
1940	Above Normal	317	310	379	541	637	582	523	546	552	645	622	443
1941	Wet	299	246	248	401	484	478	503	501	503	654	470	291
1942	Wet	398	291	278	410	463	363	357	487	479	658	385	263
1943	Wet	312	284	376	453	622	508	516	522	510	723	750	750
1944	Dry	695	365	468	643	658	610	586	581	567	784	776	573
1945	Below Normal	335	364	370	541	600	494	510	490	526	478	564	452
1946	Below Normal	464	367	375	533	651	579	534	512	526	703	743	819
1947	Dry	915	486	551	686	690	640	600	611	610	829	847	847
1948	Below Normal	881	461	548	627	639	614	592	608	602	818	860	990
1949	Dry	796	536	605	651	680	630	604	631	599	807	844	963
1950	Below Normal	801	421	454	588	670	625	586	610	597	444	335	249
1951	Above Normal	422	359	258	536	663	615	588	582	577	750	532	532
1952	Wet	424	218	210	306	383	345	359	534	524	730	603	624
1953	Wet	820	322	347	525	613	602	572	573	587	788	803	949
1954	Above Normal	808	437	482	660	676	627	599	610	604	779	758	980
1955	Dry	868	514	597	698	698	651	611	651	625	837	360	360
1956	Wet	348	362	329	361	488	469	384	501	536	747	773	903
1957	Above Normal	831	330	361	561	651	603	569	560	591	782	782	708
1958	Wet	462	196	186	328	431	354	359	517	539	725	747	697
1959	Below Normal	736	395	481	695	683	632	572	610	627	826	834	834
1960	Dry	931	577	582	698	695	668	638	698	687	842	911	1,000
1961	Dry	939	657	662	698	698	691	659	710	652	835	948	712
1962	Below Normal	645	388	472	691	663	616	588	628	649	851	855	824
1963	Wet	774	378	422	589	638	591	558	579	569	820	817	817
1964	Dry	923	581	583	698	689	648	611	643	630	750	481	387
1965	Wet	482	320	347	482	639	450	476	537	445	615	643	591
1966	Below Normal	752	394	485	698	697	654	622	624	642	757	750	887
1967	Wet	518	254	225	306	294	335	343	493	539	745	755	755
1968	Below Normal	782	428	453	687	689	629	596	610	611	798	736	385
1969	Wet	412	273	240	254	381	357	365	405	489	629	272	332
1970	Wet	350	333	398	487	644	600	551	541	576	784	760	900
1971	Wet	726	330	371	567	623	604	571	544	603	808	816	816
1972	Below Normal	895	460	541	698	693	640	620	627	595	806	809	669
1973	Above Normal	549	367	415	498	651	519	510	497	485	624	572	602
1974	Wet	303	345	378	428	587	490	456	422	467	710	740	330
1975	Wet	304	360	373	410	575	482	502	424	509	765	771	771
1976	Critical	924	566	578	698	699	637	627	659	675	831	887	1,000
1977	Critical	1,000	631	634	699	685	718	726	752	722	870	756	783
1978	Above Normal	722	413	326	365	554	486	445	581	502	762	670	355
1979	Below Normal	312	366	292	442	658	526	534	514	532	769	430	430
1980	Above Normal	408	360	346	344	462	458	490	476	494	741	745	880
1981	Dry	736	411	452	698	665	639	602	583	604	797	706	291
1982	Wet	301	223	215	352	418	338	246	203	282	389	341	336
1983	Wet	251	282	272	240	222	185	233	348	206	310	348	348
1984	Wet	353	346	361	527	633	525	455	423	477	783	771	809
1985	Dry	751	443	510	690	699	610	563	576	561	773	821	470
1986	Wet	311	244	226	389	607	483	439	431	432	728	774	953
1987	Dry	767	555	571	699	698	660	626	644	623	823	872	872
1988	Critical	1,001	643	647	699	698	699	664	730	663	841	937	1,095
1989	Dry	944	579	627	697	662	665	596	687	650	849	949	998
1990	Critical	997	650	656	699	688	686	663	693	652	866	992	1,203
1991	Critical	809	625	652	699	697	697	701	726	681	898	1,020	1,020
1992	Critical	930	698	695	710	683	712	724	785	730	915	670	732
1993	Above Normal	713	452	473	400	568	541	509	568	579	844	958	998
1994	Critical	1,004	623	642	700	703	710	688	747	682	883	707	1,078
1995	Wet	339	257	217	318	258	337	478	500	513	760	746	746
1996	Wet	318	334	330	451	636	511	498	503	433	336	239	313
1997	Wet	231	321	341	476	644	571	487	524	572	776	646	354
1998	Wet	329	285	288	259	253	299	323	355	465	662	536	218
1999	Wet	388	362	349	473	665	567	534	542	559	795	769	769
2000	Above Normal	308	366	368	541	670	583	517	501	527	775	773	906
2001	Dry	654	474	546	699	698	656	604	639	618	805	788	999
2002	Dry	867	495	587	698	698	647	616	692	654	834	904	999
2003	Above Normal	899	419	520	699	694	645	617					
	Average	643	418	442	563	615	565	542	573	570	755	732	724
	Wet	414	300	306	411	510	453	441	475	493	690	646	624
	Above Normal	577	378	394	513	619	565	538	561	555	744	716	713
	Below Normal	629	381	425	613	656	585	561	573	582	726	706	645
	Dry	824	501	550	687	684	640	601	635	617	818	800	774
	Critical	952	632	643	700	685	671	656	701	666	849	858	967

Table 101: Simulated Electrical Conductivity at Old River near Tracy Road Bridge (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								666	665	768	847	721
1922	Above Normal	576	432	424	345	532	538	537	558	583	673	605	566
1923	Below Normal	738	441	460	564	638	568	522	526	578	768	840	840
1924	Critical	1,021	786	694	721	634	582	615	667	666	810	915	930
1925	Dry	956	568	465	649	681	667	621	620	638	803	876	996
1926	Dry	1,011	654	598	712	698	663	623	641	621	800	869	800
1927	Wet	806	518	458	641	672	620	584	548	550	759	801	801
1928	Above Normal	534	535	524	675	687	639	609	599	621	801	844	994
1929	Critical	1,012	763	648	662	681	578	602	658	669	845	925	1,004
1930	Dry	1,007	732	613	660	674	629	607	652	664	835	923	1,001
1931	Critical	1,019	818	709	711	692	618	625	681	699	765	861	861
1932	Dry	901	721	573	675	672	633	598	607	625	812	898	1,002
1933	Critical	1,013	772	635	699	668	596	622	647	678	818	896	1,004
1934	Critical	1,015	816	685	664	578	549	618	680	695	838	839	1,011
1935	Below Normal	904	502	481	640	643	628	597	591	624	817	865	865
1936	Below Normal	353	420	485	600	649	565	543	547	592	777	809	435
1937	Below Normal	421	342	356	578	641	567	544	562	560	529	576	398
1938	Wet	339	263	262	255	387	372	364	420	510	723	782	849
1939	Dry	839	703	589	706	688	654	609	600	637	818	780	780
1940	Above Normal	370	368	447	544	636	612	559	555	582	651	665	462
1941	Wet	322	301	345	469	495	500	517	514	529	653	502	312
1942	Wet	425	354	348	417	471	391	373	486	506	651	362	285
1943	Wet	307	326	421	466	610	544	534	534	536	712	767	767
1944	Dry	806	575	520	651	668	639	615	593	602	781	801	523
1945	Below Normal	364	485	456	520	605	530	526	503	553	502	584	483
1946	Below Normal	508	515	461	545	650	612	575	544	563	703	760	851
1947	Dry	993	747	636	702	697	680	639	621	635	791	861	861
1948	Below Normal	1,008	703	594	652	650	636	622	620	639	806	880	997
1949	Dry	966	728	627	688	686	661	631	640	639	792	883	995
1950	Below Normal	999	689	530	609	670	654	624	619	636	405	361	282
1951	Above Normal	454	486	369	527	654	642	618	595	618	763	696	696
1952	Wet	436	263	214	303	389	367	373	530	556	728	637	652
1953	Wet	900	522	426	538	619	625	603	588	622	781	823	946
1954	Above Normal	988	628	550	665	687	657	628	623	644	777	831	991
1955	Dry	1,008	721	626	725	708	633	624	659	669	717	435	435
1956	Wet	379	451	440	418	495	493	450	509	569	749	794	903
1957	Above Normal	948	542	420	572	652	636	601	571	619	771	817	845
1958	Wet	571	226	221	330	437	378	373	513	565	715	769	748
1959	Below Normal	844	645	557	691	695	672	614	619	661	810	860	860
1960	Dry	1,007	752	628	717	705	687	665	694	701	830	935	1,030
1961	Dry	1,014	751	647	717	711	702	678	714	711	824	954	813
1962	Below Normal	750	676	554	699	680	641	615	633	680	828	872	859
1963	Wet	941	584	497	605	646	618	589	591	616	816	842	842
1964	Dry	1,011	744	637	715	699	676	645	649	672	760	502	413
1965	Wet	519	384	437	493	632	496	490	543	480	616	668	630
1966	Below Normal	869	670	569	707	706	673	652	637	686	760	910	927
1967	Wet	581	315	255	292	304	354	357	490	573	735	786	786
1968	Below Normal	915	616	521	681	698	679	634	619	650	797	720	410
1969	Wet	405	282	248	247	387	380	380	414	503	625	304	354
1970	Wet	377	482	477	511	635	626	588	555	619	842	790	929
1971	Wet	858	506	436	569	631	630	608	561	631	794	836	836
1972	Below Normal	1,008	726	605	713	703	672	644	638	661	805	1,014	830
1973	Above Normal	653	526	515	537	648	563	535	509	526	631	559	632
1974	Wet	334	397	460	456	585	525	490	442	489	704	745	371
1975	Wet	327	431	471	445	573	517	517	438	510	757	791	791
1976	Critical	1,008	748	638	717	709	699	656	659	680	815	900	998
1977	Critical	1,021	832	677	695	649	611	632	756	768	865	821	685
1978	Above Normal	701	408	411	409	556	517	471	580	537	746	727	401
1979	Below Normal	333	449	399	459	644	572	553	526	563	769	422	422
1980	Above Normal	402	415	431	393	468	477	503	489	514	725	773	912
1981	Dry	877	627	530	686	682	658	638	596	639	791	793	308
1982	Wet	326	228	217	369	426	361	256	209	286	382	391	341
1983	Wet	281	291	273	243	228	197	238	350	216	310	348	348
1984	Wet	371	476	461	538	634	563	482	454	513	779	794	840
1985	Dry	892	687	581	693	705	642	604	585	596	765	840	506
1986	Wet	318	287	311	408	600	518	465	445	451	707	794	985
1987	Dry	937	751	629	716	708	634	633	653	669	818	890	890
1988	Critical	1,018	749	656	718	712	643	657	731	720	831	943	1,152
1989	Dry	1,025	704	612	720	685	677	640	680	700	834	954	1,145
1990	Critical	1,036	781	633	720	693	595	631	699	702	846	989	1,234
1991	Critical	1,014	754	657	616	665	619	638	731	745	883	1,018	1,018
1992	Critical	1,006	733	684	584	466	531	663	739	799	913	853	923
1993	Above Normal	915	666	575	500	573	564	535	573	615	829	967	1,006
1994	Critical	1,018	746	628	747	723	710	701	744	758	874	897	839
1995	Wet	399	290	216	328	266	352	469	514	539	753	870	870
1996	Wet	358	391	373	458	628	549	519	513	455	326	260	321
1997	Wet	251	462	449	552	643	600	551	538	617	782	785	455
1998	Wet	352	299	280	248	259	314	333	361	474	654	585	259
1999	Wet	410	439	433	485	650	599	559	553	598	791	807	807
2000	Above Normal	342	474	464	564	662	612	552	516	557	771	808	949
2001	Dry	755	680	600	720	708	677	630	645	663	821	836	991
2002	Dry	1,008	718	665	716	707	675	644	689	709	834	918	1,000
2003	Above Normal	1,008	677	570	712	703	670	640					
	Average	720	557	498	573	614	579	562	580	605	748	769	754
	Wet	457	376	363	426	512	480	464	485	520	686	678	655
	Above Normal	658	513	475	537	622	594	566	570	590	742	762	764
	Below Normal	715	563	502	618	662	619	590	585	618	720	748	676
	Dry	945	698	599	698	693	660	630	641	655	802	830	805
	Critical	1,017	775	662	688	656	611	638	699	715	842	905	971

Table 102: Simulated Electrical Conductivity at Old River near Tracy Road Bridge (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								659	634	764	849	711
1922	Above Normal	521	420	425	345	532	537	536	553	559	672	610	558
1923	Below Normal	769	411	455	563	638	568	520	526	573	760	840	840
1924	Critical	1,004	786	698	721	643	582	615	663	638	807	914	906
1925	Dry	806	481	464	649	682	667	621	614	603	784	866	985
1926	Dry	953	558	602	712	698	664	624	638	597	798	868	784
1927	Wet	707	442	449	635	672	621	583	544	526	749	798	798
1928	Above Normal	483	478	517	671	688	640	609	596	594	796	842	974
1929	Critical	938	752	652	674	689	580	605	657	647	844	924	1,002
1930	Dry	889	715	616	705	701	648	614	652	664	837	921	1,000
1931	Critical	1,015	818	711	711	692	616	624	677	666	761	860	860
1932	Dry	772	592	557	678	674	635	599	604	603	823	901	1,002
1933	Critical	921	672	642	713	712	591	608	644	648	808	895	1,002
1934	Critical	978	803	691	679	587	549	619	676	658	825	836	974
1935	Below Normal	772	428	477	640	644	628	598	588	590	807	863	863
1936	Below Normal	338	392	477	602	656	565	542	541	565	771	802	476
1937	Below Normal	417	339	370	578	640	566	542	558	539	526	586	416
1938	Wet	341	278	265	258	387	372	363	416	493	722	782	827
1939	Dry	748	692	590	706	690	668	611	598	611	815	781	781
1940	Above Normal	357	345	441	552	639	611	558	552	558	648	667	498
1941	Wet	315	288	329	407	491	500	516	509	512	652	529	312
1942	Wet	404	331	342	416	471	391	373	483	489	650	412	287
1943	Wet	317	316	422	466	616	545	533	530	519	711	767	767
1944	Dry	714	499	524	651	668	640	615	591	581	779	801	598
1945	Below Normal	355	452	456	552	608	529	525	501	528	488	584	479
1946	Below Normal	477	483	461	544	650	611	563	525	534	694	759	829
1947	Dry	917	646	625	706	700	681	639	618	620	809	862	862
1948	Below Normal	902	566	593	654	651	636	621	614	611	801	875	989
1949	Dry	825	634	632	688	688	661	631	637	612	790	883	963
1950	Below Normal	825	572	534	611	671	652	623	613	609	472	381	282
1951	Above Normal	428	440	371	537	656	642	617	591	585	754	677	677
1952	Wet	436	258	228	309	390	367	373	525	534	726	637	642
1953	Wet	817	469	428	542	620	625	603	583	592	775	823	946
1954	Above Normal	835	532	547	661	687	657	627	618	614	773	830	975
1955	Dry	889	601	629	725	708	677	645	654	637	840	445	445
1956	Wet	364	419	406	371	493	492	410	498	539	733	792	905
1957	Above Normal	846	486	424	573	653	636	601	568	594	769	817	830
1958	Wet	566	217	206	331	437	378	373	510	545	714	769	733
1959	Below Normal	750	558	560	695	697	670	614	615	632	808	859	859
1960	Dry	943	742	632	717	707	689	667	695	701	830	935	1,004
1961	Dry	956	743	650	717	710	701	682	708	672	819	953	802
1962	Below Normal	667	545	545	697	680	640	615	628	652	835	872	848
1963	Wet	789	501	495	604	646	618	588	583	581	802	837	837
1964	Dry	942	736	639	714	700	677	646	644	639	757	528	413
1965	Wet	488	356	431	499	633	496	489	539	466	614	666	621
1966	Below Normal	755	548	552	698	706	673	652	633	648	755	908	896
1967	Wet	555	305	256	310	301	353	357	487	541	732	786	786
1968	Below Normal	787	605	523	683	699	680	634	615	621	794	813	434
1969	Wet	417	282	245	258	387	381	380	411	487	624	309	348
1970	Wet	361	446	479	520	637	626	587	551	590	839	789	899
1971	Wet	748	454	438	579	633	630	607	557	601	791	837	837
1972	Below Normal	915	619	608	713	704	672	645	632	634	802	1,012	818
1973	Above Normal	594	467	500	523	645	562	533	505	498	633	611	623
1974	Wet	326	368	447	444	584	525	482	435	471	696	757	374
1975	Wet	316	400	471	427	571	516	516	438	506	748	790	790
1976	Critical	941	739	638	717	709	699	655	659	680	814	901	998
1977	Critical	1,021	832	678	695	649	611	632	751	740	861	821	806
1978	Above Normal	748	485	436	374	555	516	470	575	521	745	727	398
1979	Below Normal	325	412	393	460	644	571	552	523	536	756	470	470
1980	Above Normal	414	424	420	353	466	477	502	487	499	724	773	884
1981	Dry	759	534	533	688	683	659	638	593	612	789	787	320
1982	Wet	325	228	226	355	425	361	256	210	302	391	395	356
1983	Wet	279	289	276	245	227	196	238	346	218	319	358	358
1984	Wet	359	447	462	539	635	563	482	433	493	771	793	819
1985	Dry	768	573	585	694	705	642	604	583	573	759	840	535
1986	Wet	324	287	314	393	599	517	464	443	441	707	793	948
1987	Dry	806	734	634	716	708	634	634	649	636	810	890	890
1988	Critical	1,013	748	663	717	711	646	659	724	685	827	943	1,081
1989	Dry	965	632	622	719	688	680	643	675	665	830	953	1,003
1990	Critical	1,010	776	643	720	700	596	634	697	675	840	987	1,174
1991	Critical	850	660	666	618	662	634	648	726	709	874	1,015	1,015
1992	Critical	940	718	640	590	469	532	667	754	756	902	852	908
1993	Above Normal	805	546	501	419	568	563	534	568	586	823	965	1,004
1994	Critical	1,013	745	636	716	712	712	702	739	707	863	898	1,070
1995	Wet	398	312	227	322	265	351	468	508	519	749	868	868
1996	Wet	354	363	378	460	628	548	518	509	449	351	262	323
1997	Wet	250	448	432	488	636	602	521	529	579	765	787	482
1998	Wet	342	304	298	265	259	312	332	359	462	654	585	258
1999	Wet	395	410	435	492	652	599	559	550	566	778	807	807
2000	Above Normal	328	440	447	549	660	612	549	511	531	761	807	919
2001	Dry	684	566	603	719	708	682	647	643	631	815	836	990
2002	Dry	890	619	670	715	707	675	645	685	670	830	916	998
2003	Above Normal	918	559	557	712	705	671	640					
	Average	665	514	497	571	616	580	562	576	581	747	772	752
	Wet	434	354	361	421	511	480	460	480	501	683	682	651
	Above Normal	606	469	465	522	621	594	565	565	564	739	765	754
	Below Normal	647	495	500	621	663	619	589	579	591	719	759	678
	Dry	846	628	600	701	696	666	634	638	629	806	831	799
	Critical	970	754	663	689	661	612	639	697	684	836	904	983

Table 103: Simulated Electrical Conductivity at Old River at Middle River (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								678	655	764	805	660
1922	Above Normal	556	389	358	340	531	521	525	556	576	655	571	543
1923	Below Normal	735	403	385	562	635	539	500	523	578	780	825	825
1924	Critical	1,014	708	671	707	678	651	630	669	658	812	899	908
1925	Dry	952	500	440	655	675	624	589	617	633	814	864	996
1926	Dry	1,005	594	549	705	686	635	595	641	610	807	856	775
1927	Wet	796	443	397	647	667	596	559	542	544	766	784	784
1928	Above Normal	511	446	461	679	678	621	583	594	620	808	827	994
1929	Critical	1,005	641	592	705	686	646	606	659	662	855	904	998
1930	Dry	1,002	636	589	706	684	642	600	655	657	848	908	998
1931	Critical	1,011	745	702	710	683	652	629	684	695	750	845	845
1932	Dry	897	581	508	670	662	609	580	602	621	824	878	997
1933	Critical	1,003	641	593	700	681	636	608	646	676	824	883	999
1934	Critical	1,006	727	668	707	679	652	631	682	688	846	819	1,016
1935	Below Normal	890	423	414	642	633	607	573	587	620	829	846	846
1936	Below Normal	336	381	418	598	646	540	530	543	593	787	770	415
1937	Below Normal	383	296	269	592	637	540	529	558	555	522	552	376
1938	Wet	331	252	258	252	384	356	351	418	510	729	763	839
1939	Dry	819	516	508	703	680	628	577	597	637	828	735	735
1940	Above Normal	343	337	385	539	637	592	532	551	580	645	629	420
1941	Wet	310	268	275	467	489	485	508	509	525	651	455	298
1942	Wet	419	346	316	414	466	372	362	489	500	654	347	267
1943	Wet	304	333	379	458	616	519	522	529	532	717	753	753
1944	Dry	796	451	466	647	662	618	592	587	595	780	780	506
1945	Below Normal	352	404	379	511	602	506	515	496	554	495	565	461
1946	Below Normal	498	409	381	540	651	588	554	536	559	706	746	843
1947	Dry	996	625	581	688	692	647	608	618	630	800	850	850
1948	Below Normal	1,003	611	555	636	643	620	598	617	637	815	869	996
1949	Dry	956	634	605	659	682	637	609	637	633	801	852	995
1950	Below Normal	993	551	455	596	670	633	593	619	630	387	326	254
1951	Above Normal	444	426	273	528	660	622	595	590	617	755	570	570
1952	Wet	428	230	204	301	386	353	365	536	550	726	611	636
1953	Wet	907	425	357	529	616	608	579	582	622	786	807	945
1954	Above Normal	982	551	495	665	679	634	608	619	640	778	770	992
1955	Dry	1,002	651	603	704	702	658	618	659	665	701	371	371
1956	Wet	367	393	379	412	491	477	432	508	570	756	778	898
1957	Above Normal	944	394	361	566	652	611	576	567	620	777	789	745
1958	Wet	482	210	196	328	434	363	364	519	562	720	751	720
1959	Below Normal	839	483	484	691	687	640	579	616	663	820	840	840
1960	Dry	1,002	639	588	707	698	672	642	698	691	836	915	1,026
1961	Dry	1,003	685	648	708	704	694	665	717	702	830	947	741
1962	Below Normal	735	551	490	696	670	624	594	633	681	834	859	841
1963	Wet	940	507	444	597	642	600	564	589	611	825	826	826
1964	Dry	1,004	630	591	703	692	654	617	648	671	751	469	393
1965	Wet	514	381	358	483	639	465	481	543	466	613	646	605
1966	Below Normal	871	515	508	702	700	660	629	632	689	758	777	917
1967	Wet	560	269	228	289	301	341	348	494	577	740	763	763
1968	Below Normal	920	471	457	685	692	635	604	616	648	795	654	378
1969	Wet	401	277	245	245	383	365	370	410	507	627	280	337
1970	Wet	367	394	406	491	641	609	561	549	615	788	765	928
1971	Wet	849	414	377	563	627	611	579	553	637	802	821	821
1972	Below Normal	1,003	586	543	705	697	648	625	635	635	803	844	702
1973	Above Normal	615	453	445	524	652	532	517	503	519	619	528	613
1974	Wet	319	382	398	447	588	501	473	433	488	711	730	344
1975	Wet	318	394	381	437	577	492	508	430	513	766	777	777
1976	Critical	1,005	631	581	706	703	644	631	659	677	825	888	996
1977	Critical	1,010	706	652	711	698	715	728	762	758	868	771	660
1978	Above Normal	683	388	325	405	556	495	452	585	525	755	681	370
1979	Below Normal	324	408	323	450	655	539	541	519	563	775	396	396
1980	Above Normal	396	384	370	389	465	465	496	482	511	734	751	907
1981	Dry	867	503	458	696	672	645	609	589	638	794	728	292
1982	Wet	308	225	210	367	422	346	250	204	268	380	346	325
1983	Wet	258	281	271	241	225	190	235	351	209	303	339	339
1984	Wet	365	389	368	532	634	537	464	448	502	782	775	833
1985	Dry	887	569	514	692	702	620	569	581	590	770	825	461
1986	Wet	311	245	227	406	608	495	446	437	446	719	777	989
1987	Dry	921	609	568	706	702	666	631	650	666	824	877	877
1988	Critical	1,010	694	645	708	705	711	669	742	708	836	937	1,171
1989	Dry	1,013	659	626	708	672	666	602	690	696	843	948	1,157
1990	Critical	1,015	699	642	710	694	687	667	699	690	861	990	1,262
1991	Critical	998	687	649	709	700	696	700	735	733	895	1,020	1,020
1992	Critical	1,003	713	812	771	694	705	721	793	800	916	700	769
1993	Above Normal	848	601	566	487	570	549	518	573	613	839	960	1,001
1994	Critical	1,011	671	623	751	715	708	689	755	741	882	739	823
1995	Wet	363	253	210	326	262	343	480	510	536	757	766	766
1996	Wet	325	394	337	453	636	524	504	509	444	317	244	309
1997	Wet	239	355	368	547	644	577	528	533	617	786	667	358
1998	Wet	336	283	276	245	256	305	326	358	479	658	544	229
1999	Wet	402	401	361	474	661	577	541	548	597	800	777	777
2000	Above Normal	326	416	404	560	669	593	527	510	556	776	780	939
2001	Dry	739	617	545	706	702	662	610	643	658	807	796	993
2002	Dry	1,002	617	611	706	702	654	622	696	704	833	907	998
2003	Above Normal	1,002	588	543	706	697	650	624					
	Average	707	483	452	573	618	572	550	579	601	751	736	731
	Wet	443	336	316	421	511	462	450	482	516	688	650	633
	Above Normal	638	448	416	532	621	574	546	567	586	742	722	730
	Below Normal	706	464	433	615	659	594	569	581	615	722	705	649
	Dry	937	595	555	693	687	646	608	640	650	805	806	787
	Critical	1,008	689	653	716	693	675	659	707	707	847	866	956

Table 104: Simulated Electrical Conductivity at Old River at Middle River (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								671	622	763	805	650
1922	Above Normal	502	380	360	340	530	521	523	550	551	654	576	536
1923	Below Normal	769	375	387	561	635	538	499	523	573	770	824	824
1924	Critical	996	706	670	707	678	651	630	664	627	811	899	882
1925	Dry	792	432	438	656	676	625	590	611	594	795	854	983
1926	Dry	943	517	552	704	688	636	596	637	584	805	856	759
1927	Wet	693	399	388	643	667	597	557	537	517	757	780	780
1928	Above Normal	462	399	451	677	678	622	583	590	589	805	825	973
1929	Critical	926	639	602	704	689	648	608	658	637	854	904	996
1930	Dry	877	633	586	706	701	654	602	655	657	848	907	998
1931	Critical	1,007	741	700	710	683	652	629	679	655	747	844	844
1932	Dry	760	471	496	674	663	610	581	599	597	839	877	995
1933	Critical	904	577	600	704	684	638	611	642	639	816	882	997
1934	Critical	966	723	670	708	679	652	635	676	646	835	816	974
1935	Below Normal	751	378	414	642	634	607	573	583	583	820	845	845
1936	Below Normal	321	353	415	600	654	540	529	536	563	782	762	456
1937	Below Normal	380	298	292	589	636	539	528	554	532	521	562	394
1938	Wet	333	265	261	254	384	356	351	414	493	729	763	816
1939	Dry	723	513	507	703	682	629	577	594	608	827	735	735
1940	Above Normal	332	336	389	548	639	591	531	548	554	645	630	454
1941	Wet	304	250	252	404	487	484	507	504	506	651	482	297
1942	Wet	398	349	309	413	466	372	362	485	483	654	394	268
1943	Wet	314	324	382	459	622	519	521	525	513	716	753	753
1944	Dry	701	395	468	647	663	619	593	584	572	779	780	581
1945	Below Normal	341	387	380	547	603	505	515	494	527	482	565	458
1946	Below Normal	467	395	383	539	651	588	542	517	529	698	746	819
1947	Dry	915	528	554	694	695	648	608	613	613	821	850	850
1948	Below Normal	889	506	553	638	644	621	598	610	605	811	864	986
1949	Dry	806	568	606	661	683	638	610	633	604	800	852	960
1950	Below Normal	810	461	460	598	671	633	592	611	600	451	342	255
1951	Above Normal	421	395	278	539	662	623	594	585	580	747	552	552
1952	Wet	429	223	213	307	386	353	365	531	527	725	611	626
1953	Wet	818	386	359	533	617	608	579	577	588	781	807	945
1954	Above Normal	819	477	490	662	680	634	605	613	607	775	769	974
1955	Dry	875	560	605	704	702	658	618	653	629	833	378	378
1956	Wet	352	377	336	366	490	477	391	500	537	740	777	901
1957	Above Normal	836	359	363	568	653	611	575	563	592	776	789	728
1958	Wet	478	203	189	329	433	362	364	515	541	719	751	705
1959	Below Normal	740	426	484	697	689	641	578	612	629	819	840	840
1960	Dry	935	638	588	706	701	673	644	698	691	836	915	998
1961	Dry	944	684	650	708	704	694	665	710	659	828	947	730
1962	Below Normal	649	444	475	694	670	624	594	628	650	844	859	829
1963	Wet	780	441	429	596	642	600	564	580	572	811	822	822
1964	Dry	930	627	588	703	694	655	618	643	634	749	494	392
1965	Wet	482	367	357	490	639	464	480	538	452	612	645	595
1966	Below Normal	750	425	487	699	700	660	629	627	645	755	776	884
1967	Wet	533	264	228	308	297	341	348	491	540	739	763	763
1968	Below Normal	783	466	456	687	693	635	603	612	614	794	747	398
1969	Wet	412	277	243	256	384	365	370	407	488	626	284	333
1970	Wet	352	361	406	501	642	609	560	544	580	786	765	896
1971	Wet	734	379	383	574	628	611	579	549	602	800	821	821
1972	Below Normal	904	509	543	704	697	648	625	629	604	801	842	689
1973	Above Normal	556	390	421	509	650	531	515	500	489	623	578	604
1974	Wet	312	366	386	435	587	500	464	427	468	703	743	347
1975	Wet	307	380	382	418	576	491	507	430	509	757	776	776
1976	Critical	932	628	582	706	703	644	631	659	678	825	889	997
1977	Critical	1,010	706	652	711	698	715	728	752	727	866	771	786
1978	Above Normal	729	422	331	370	555	495	451	579	508	754	680	368
1979	Below Normal	316	389	315	452	655	539	540	517	534	762	443	443
1980	Above Normal	408	390	355	348	464	464	494	480	495	734	751	877
1981	Dry	743	442	458	697	673	646	609	587	607	792	721	304
1982	Wet	307	226	218	353	421	346	250	205	284	389	350	340
1983	Wet	257	282	274	243	225	190	235	348	211	311	349	349
1984	Wet	353	373	370	533	634	537	464	426	481	775	775	810
1985	Dry	756	489	517	693	702	620	570	579	565	766	825	487
1986	Wet	317	248	232	391	607	495	445	436	435	719	777	948
1987	Dry	781	603	573	706	702	667	633	646	628	817	876	876
1988	Critical	1,005	699	651	708	705	702	671	729	671	835	937	1,088
1989	Dry	953	605	635	707	676	669	603	683	656	841	947	998
1990	Critical	1,002	703	648	709	697	690	670	695	658	857	988	1,190
1991	Critical	829	632	655	709	704	700	705	726	687	889	1,017	1,017
1992	Critical	935	709	706	721	698	710	726	781	737	909	699	750
1993	Above Normal	723	494	480	410	569	548	516	568	581	835	957	999
1994	Critical	1,007	680	630	709	709	711	694	745	689	874	740	1,066
1995	Wet	360	261	219	320	262	342	478	503	515	754	764	764
1996	Wet	322	370	349	454	636	524	503	505	438	341	245	313
1997	Wet	235	349	348	482	644	580	496	525	573	769	670	377
1998	Wet	331	287	290	262	256	305	327	356	464	657	544	229
1999	Wet	387	388	363	482	662	577	541	545	561	787	777	777
2000	Above Normal	312	396	386	546	669	594	525	504	529	767	780	905
2001	Dry	664	532	549	706	702	663	611	641	622	803	796	992
2002	Dry	875	550	616	706	702	655	623	690	660	830	906	996
2003	Above Normal	905	484	523	706	699	651	624					
	Average	650	452	449	569	618	573	549	574	573	750	739	728
	Wet	419	323	314	416	511	462	446	477	495	685	653	629
	Above Normal	584	410	402	519	621	574	545	563	558	740	724	718
	Below Normal	634	415	432	618	660	594	568	575	585	722	715	651
	Dry	832	544	555	693	689	648	608	636	621	812	806	778
	Critical	960	679	647	709	694	676	662	701	671	843	866	966

Table 105: Simulated Electrical Conductivity at Old R. at Hwy 4 (CCWD Intake) (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								674	657	621	520	481
1922	Above Normal	325	288	290	308	273	292	522	637	661	644	365	352
1923	Below Normal	329	306	319	267	270	362	561	594	635	740	798	798
1924	Critical	655	549	505	600	505	531	606	780	850	835	884	613
1925	Dry	655	377	302	303	289	398	640	779	668	764	807	598
1926	Dry	336	307	370	316	372	474	634	793	534	326	358	411
1927	Wet	331	266	293	238	232	278	529	651	556	434	430	430
1928	Above Normal	290	269	316	259	266	318	601	709	731	830	842	889
1929	Critical	586	464	477	458	431	477	605	769	832	813	606	401
1930	Dry	307	298	364	332	365	463	697	808	681	721	818	947
1931	Critical	694	599	551	599	508	583	615	759	818	602	364	364
1932	Dry	435	455	413	367	325	404	733	801	613	696	681	587
1933	Critical	467	428	417	433	439	488	590	746	831	788	665	456
1934	Critical	505	513	483	447	385	454	621	783	806	841	743	403
1935	Below Normal	323	320	315	257	251	326	548	751	690	770	605	605
1936	Below Normal	346	285	313	273	258	323	515	654	650	732	753	657
1937	Below Normal	635	379	279	284	278	318	512	671	462	293	372	405
1938	Wet	341	330	312	303	289	286	318	253	311	649	844	758
1939	Dry	497	505	384	325	413	436	604	755	683	774	738	738
1940	Above Normal	320	276	304	266	249	274	546	667	715	660	376	467
1941	Wet	369	293	259	283	277	302	424	391	567	546	400	375
1942	Wet	287	292	282	275	274	293	350	318	376	325	374	321
1943	Wet	315	306	298	305	276	298	543	705	682	777	853	853
1944	Dry	364	317	328	302	368	489	664	784	690	607	543	546
1945	Below Normal	542	382	326	267	276	364	597	668	649	492	294	401
1946	Below Normal	359	322	329	276	284	372	611	775	749	766	614	586
1947	Dry	384	344	364	310	394	472	626	772	715	842	808	808
1948	Below Normal	378	290	317	237	255	374	540	654	661	757	853	867
1949	Dry	390	297	393	348	339	497	605	737	691	757	630	394
1950	Below Normal	271	264	315	255	264	347	578	729	432	348	505	417
1951	Above Normal	285	289	275	237	241	289	578	677	732	647	404	404
1952	Wet	349	305	245	278	286	260	261	246	415	568	303	319
1953	Wet	282	275	269	232	234	309	472	447	551	700	780	296
1954	Above Normal	248	259	321	260	254	274	540	709	774	653	346	334
1955	Dry	335	356	379	332	340	453	597	716	779	629	680	680
1956	Wet	319	282	304	279	272	297	363	298	398	670	815	497
1957	Above Normal	271	342	298	247	246	309	615	553	329	374	320	382
1958	Wet	512	384	242	269	279	276	282	248	376	721	734	334
1959	Below Normal	391	385	348	310	304	325	527	748	749	784	809	809
1960	Dry	345	342	387	307	397	466	735	794	701	889	789	668
1961	Dry	338	337	353	329	395	475	591	703	704	794	808	571
1962	Below Normal	342	295	307	271	292	335	654	665	290	342	321	322
1963	Wet	296	321	297	238	229	266	525	632	595	317	393	393
1964	Dry	327	380	410	307	408	543	635	740	770	486	324	287
1965	Wet	309	309	307	256	250	291	516	643	470	299	329	306
1966	Below Normal	269	279	325	272	294	364	641	785	803	749	413	306
1967	Wet	293	376	265	286	307	265	257	237	346	597	634	634
1968	Below Normal	258	341	346	292	298	339	584	753	735	574	477	404
1969	Wet	411	314	259	253	282	291	333	255	336	391	439	345
1970	Wet	288	275	302	265	247	291	566	739	533	341	257	247
1971	Wet	245	252	273	228	229	291	461	422	593	748	625	625
1972	Below Normal	301	270	337	314	299	370	617	832	582	377	371	372
1973	Above Normal	319	297	331	279	244	309	539	659	398	272	308	282
1974	Wet	291	271	301	284	250	308	380	289	420	574	489	392
1975	Wet	299	275	299	263	250	313	377	274	299	474	738	738
1976	Critical	511	393	436	568	650	683	797	889	784	917	758	787
1977	Critical	727	634	579	652	635	615	695	877	904	887	570	413
1978	Above Normal	488	461	324	330	280	336	568	690	751	760	599	384
1979	Below Normal	326	301	309	263	262	390	616	783	729	614	424	424
1980	Above Normal	450	348	333	341	315	310	479	620	641	829	840	359
1981	Dry	275	299	338	328	416	505	711	835	589	265	355	383
1982	Wet	434	239	259	280	287	296	288	208	248	420	391	340
1983	Wet	276	297	278	250	251	225	207	223	235	313	414	414
1984	Wet	262	304	327	280	248	301	555	641	519	273	298	454
1985	Dry	410	373	353	302	412	522	665	716	673	700	496	532
1986	Wet	337	317	250	299	294	304	496	606	662	811	781	669
1987	Dry	409	412	380	333	426	466	594	758	726	813	732	732
1988	Critical	537	431	447	388	473	656	658	796	838	848	902	670
1989	Dry	362	251	320	268	401	530	676	792	763	810	682	651
1990	Critical	433	400	405	524	637	551	653	831	854	871	917	907
1991	Critical	589	405	386	484	638	593	627	870	914	842	982	982
1992	Critical	361	344	370	374	379	580	795	870	819	920	628	403
1993	Above Normal	328	266	300	267	257	315	574	697	725	793	888	807
1994	Critical	500	365	377	359	605	720	608	808	814	824	719	332
1995	Wet	499	357	234	283	324	245	226	244	413	615	360	360
1996	Wet	487	308	305	287	262	312	421	371	427	461	263	340
1997	Wet	320	273	315	284	269	320	609	804	803	731	474	418
1998	Wet	495	365	314	294	311	241	221	227	236	230	295	347
1999	Wet	278	274	312	262	238	306	486	474	610	744	693	693
2000	Above Normal	329	268	313	272	255	294	563	641	638	807	675	494
2001	Dry	326	333	392	359	383	441	594	755	757	707	336	564
2002	Dry	449	327	388	303	406	505	611	760	613	496	271	441
2003	Above Normal	305	251	295	223	229	300	593					
	Average	384	338	337	315	330	384	546	639	621	634	574	514
	Wet	343	302	285	271	267	287	402	417	461	528	516	458
	Above Normal	330	301	308	274	259	302	560	661	646	657	540	470
	Below Normal	362	316	320	274	278	351	579	719	630	596	543	527
	Dry	386	350	368	321	380	474	645	767	686	671	603	585
	Critical	547	460	453	491	524	578	656	815	839	832	728	561

Table 106: Simulated Electrical Conductivity at Old R. at Hwy 4 (CCWD Intake) (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								671	651	617	519	481
1922	Above Normal	329	287	290	309	273	292	522	634	650	629	364	353
1923	Below Normal	332	312	314	268	272	362	551	591	637	741	797	797
1924	Critical	713	582	516	602	505	530	605	779	828	798	923	626
1925	Dry	686	399	303	304	289	398	642	777	662	762	804	596
1926	Dry	353	321	375	318	375	478	646	796	529	317	354	410
1927	Wet	341	277	294	239	232	278	528	647	542	413	421	421
1928	Above Normal	296	279	320	261	267	318	600	708	728	832	827	882
1929	Critical	566	461	479	465	433	478	605	768	825	808	612	403
1930	Dry	319	314	368	337	367	465	697	810	682	721	817	947
1931	Critical	689	607	556	598	502	579	616	756	811	594	362	362
1932	Dry	439	450	394	351	332	405	729	797	609	690	668	553
1933	Critical	460	437	429	439	434	481	590	742	818	781	668	419
1934	Critical	493	526	493	453	386	453	621	781	774	829	845	424
1935	Below Normal	342	330	311	257	250	325	552	736	675	765	622	622
1936	Below Normal	352	279	305	272	259	321	505	649	645	729	799	673
1937	Below Normal	581	367	280	285	274	318	520	716	471	283	362	424
1938	Wet	343	348	314	320	290	286	317	252	307	635	843	762
1939	Dry	500	512	385	325	409	434	604	755	682	771	747	747
1940	Above Normal	325	273	296	269	248	274	542	651	713	677	378	456
1941	Wet	368	274	252	287	280	301	423	388	561	533	385	326
1942	Wet	280	291	276	275	274	292	350	318	369	313	364	310
1943	Wet	364	308	296	304	275	299	544	674	638	762	866	866
1944	Dry	372	330	334	301	367	492	682	815	688	583	537	532
1945	Below Normal	545	363	323	268	277	364	596	664	619	466	294	390
1946	Below Normal	357	326	328	277	284	384	619	748	735	759	608	581
1947	Dry	387	341	373	314	397	483	633	767	703	865	875	875
1948	Below Normal	391	300	316	236	254	378	539	670	700	786	826	897
1949	Dry	468	324	404	353	343	501	620	747	690	751	638	394
1950	Below Normal	278	274	314	255	262	339	577	725	427	341	525	403
1951	Above Normal	289	285	275	238	241	290	578	675	731	649	405	405
1952	Wet	346	299	239	279	287	260	261	245	406	555	302	319
1953	Wet	289	283	272	232	234	300	440	417	519	657	759	293
1954	Above Normal	256	269	325	261	253	273	537	707	749	605	339	328
1955	Dry	341	376	384	334	339	470	616	730	784	620	689	689
1956	Wet	323	282	298	284	273	292	336	269	342	615	810	515
1957	Above Normal	277	406	304	247	245	307	612	549	322	358	317	383
1958	Wet	492	370	241	267	279	276	281	248	370	706	730	334
1959	Below Normal	419	414	355	312	306	325	527	742	739	779	817	817
1960	Dry	350	359	395	309	396	464	733	793	702	889	790	668
1961	Dry	344	350	356	328	394	477	609	717	707	793	817	573
1962	Below Normal	347	299	301	274	297	347	674	673	291	334	320	326
1963	Wet	304	331	305	238	229	266	524	629	578	308	386	386
1964	Dry	336	393	414	306	406	541	639	744	751	466	323	285
1965	Wet	298	303	299	256	250	293	519	649	473	296	327	307
1966	Below Normal	271	294	331	274	294	363	640	780	774	709	410	307
1967	Wet	292	356	262	284	311	264	256	237	334	564	623	623
1968	Below Normal	269	361	352	295	298	338	585	752	730	569	469	426
1969	Wet	428	315	255	265	286	292	334	255	326	373	431	343
1970	Wet	292	288	310	265	247	291	563	733	524	331	257	254
1971	Wet	255	258	271	228	229	291	460	421	588	738	620	620
1972	Below Normal	309	288	342	314	299	369	614	829	582	381	373	374
1973	Above Normal	327	297	324	277	244	308	541	698	407	272	302	281
1974	Wet	286	271	298	284	250	309	378	284	404	552	488	400
1975	Wet	293	274	299	266	251	312	376	274	295	457	724	724
1976	Critical	512	394	434	568	649	677	804	887	775	915	772	798
1977	Critical	733	637	580	653	635	615	695	875	899	884	572	401
1978	Above Normal	485	453	334	330	277	333	564	686	747	762	617	389
1979	Below Normal	321	299	306	263	262	386	608	779	705	574	413	413
1980	Above Normal	473	350	332	341	314	311	469	614	638	831	835	354
1981	Dry	274	305	341	327	411	503	702	832	585	264	356	370
1982	Wet	400	238	253	281	287	296	288	208	250	411	395	355
1983	Wet	275	299	282	252	251	225	207	224	234	324	420	420
1984	Wet	267	315	328	282	249	302	555	615	475	266	294	450
1985	Dry	416	387	357	304	412	521	658	712	671	699	496	517
1986	Wet	342	321	252	301	295	309	499	605	658	810	793	677
1987	Dry	416	433	386	332	424	463	595	759	722	800	726	726
1988	Critical	547	451	457	390	476	661	662	795	829	845	895	672
1989	Dry	371	271	329	272	403	525	682	798	762	790	661	640
1990	Critical	439	418	417	520	631	552	657	832	845	861	921	888
1991	Critical	571	411	392	464	635	621	615	854	899	833	985	985
1992	Critical	365	353	380	381	379	585	799	869	811	913	628	404
1993	Above Normal	336	278	305	285	262	316	577	696	736	814	845	896
1994	Critical	535	390	388	367	605	689	645	853	786	798	725	322
1995	Wet	473	367	278	291	323	245	226	243	403	600	358	358
1996	Wet	462	307	303	288	262	313	421	371	422	440	265	352
1997	Wet	312	271	313	301	272	325	608	793	790	711	469	457
1998	Wet	538	371	311	332	318	242	221	227	236	229	295	344
1999	Wet	282	280	313	263	238	307	484	470	588	710	702	702
2000	Above Normal	330	271	314	275	255	295	561	636	616	784	716	508
2001	Dry	331	335	396	362	384	454	631	778	757	706	338	577
2002	Dry	450	350	394	304	406	507	607	759	601	477	270	445
2003	Above Normal	316	265	284	224	230	301	593					
	Average	389	346	339	317	330	384	547	638	613	624	576	516
	Wet	344	304	285	275	268	287	400	411	447	512	513	458
	Above Normal	337	309	309	276	259	302	558	660	641	652	539	476
	Below Normal	365	322	320	275	278	351	579	718	624	587	545	532
	Dry	397	364	372	321	381	477	651	771	683	665	606	586
	Critical	552	472	460	492	523	577	659	816	825	822	742	559

Table 107: Simulated Electrical Conductivity at Delta Mendota Canal at Tracy Pumping Plant (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								601	603	643	632	617
1922	Above Normal	473	356	356	355	389	343	477	562	583	637	514	490
1923	Below Normal	543	380	369	379	331	379	500	530	564	692	766	766
1924	Critical	993	666	566	568	496	519	557	670	715	763	832	753
1925	Dry	928	469	374	391	338	415	559	667	609	723	773	736
1926	Dry	611	436	474	395	378	465	562	678	529	477	575	690
1927	Wet	572	374	361	339	304	319	485	568	519	527	558	558
1928	Above Normal	429	356	413	337	329	341	539	622	637	751	785	892
1929	Critical	872	644	534	531	453	484	553	665	721	759	682	642
1930	Dry	598	471	441	377	378	480	599	696	629	717	792	931
1931	Critical	884	703	600	602	502	552	570	664	721	646	545	545
1932	Dry	741	582	500	469	492	426	622	693	582	687	764	809
1933	Critical	778	629	503	502	473	527	547	650	722	741	716	784
1934	Critical	960	671	559	505	421	475	558	680	708	784	755	679
1935	Below Normal	597	421	401	368	321	392	498	643	618	726	684	684
1936	Below Normal	361	348	394	383	313	368	475	573	582	691	757	455
1937	Below Normal	466	321	288	451	367	392	474	583	468	453	551	433
1938	Wet	353	264	268	269	370	321	326	306	347	619	771	779
1939	Dry	682	602	422	360	402	470	542	650	615	730	736	736
1940	Above Normal	365	323	364	357	352	316	493	582	614	633	540	466
1941	Wet	334	283	283	424	405	349	416	399	507	581	479	329
1942	Wet	380	326	300	396	401	329	346	347	396	459	365	295
1943	Wet	321	305	361	413	358	343	488	602	590	691	765	765
1944	Dry	572	416	379	376	378	476	581	670	611	629	618	533
1945	Below Normal	366	401	370	351	345	380	524	572	565	499	469	468
1946	Below Normal	464	395	375	367	325	384	536	651	632	692	653	679
1947	Dry	632	542	447	364	382	473	563	665	633	765	764	764
1948	Below Normal	654	441	415	339	301	380	499	586	600	709	809	966
1949	Dry	634	458	499	430	352	470	542	645	622	712	692	614
1950	Below Normal	579	386	378	352	304	361	523	631	473	402	389	300
1951	Above Normal	395	369	288	306	307	320	523	598	632	664	564	564
1952	Wet	428	254	216	311	369	308	300	303	417	600	473	509
1953	Wet	531	357	316	306	284	333	453	440	517	669	765	533
1954	Above Normal	530	392	431	348	340	310	494	623	667	664	537	587
1955	Dry	648	534	472	388	355	494	545	634	677	692	446	446
1956	Wet	374	357	366	399	400	346	369	339	410	640	766	646
1957	Above Normal	547	465	335	323	311	335	543	522	374	495	510	615
1958	Wet	564	238	212	333	382	319	312	307	391	650	725	533
1959	Below Normal	802	489	396	349	328	345	486	642	661	739	767	767
1960	Dry	568	581	488	347	378	451	635	700	631	796	788	790
1961	Dry	624	567	454	343	372	445	537	629	641	740	809	704
1962	Below Normal	548	419	364	339	329	354	566	617	357	483	508	564
1963	Wet	591	421	358	340	318	309	484	566	560	471	543	543
1964	Dry	589	511	506	380	390	506	567	650	671	593	453	368
1965	Wet	469	359	363	339	320	334	465	561	459	460	501	484
1966	Below Normal	528	401	405	335	323	368	569	681	697	727	628	556
1967	Wet	445	304	242	301	310	304	296	301	373	591	668	668
1968	Below Normal	540	507	391	342	322	362	525	652	650	623	656	433
1969	Wet	406	290	257	259	368	324	338	309	363	486	313	348
1970	Wet	357	337	366	333	319	318	505	631	518	523	472	522
1971	Wet	497	335	326	296	277	318	444	424	541	707	654	654
1972	Below Normal	520	417	397	354	324	380	550	698	568	517	628	611
1973	Above Normal	509	397	417	389	314	344	489	566	424	461	474	467
1974	Wet	330	334	377	412	349	346	387	332	411	584	571	380
1975	Wet	325	346	352	400	353	352	387	323	346	535	706	706
1976	Critical	701	531	495	541	593	615	666	736	687	812	782	892
1977	Critical	945	715	612	621	595	559	613	748	783	816	683	610
1978	Above Normal	662	415	340	407	383	366	493	599	628	693	643	399
1979	Below Normal	337	367	328	333	301	397	541	647	623	631	423	423
1980	Above Normal	401	365	373	398	421	361	446	536	555	719	783	574
1981	Dry	554	429	388	361	407	475	614	708	567	457	564	311
1982	Wet	343	235	221	365	391	326	267	212	272	385	420	360
1983	Wet	304	296	278	256	236	209	230	278	218	322	347	347
1984	Wet	342	380	381	380	322	339	486	538	495	447	474	609
1985	Dry	664	502	416	350	408	490	583	626	599	673	600	511
1986	Wet	341	266	245	400	378	349	448	513	547	702	749	780
1987	Dry	656	586	441	358	411	502	549	661	651	746	755	755
1988	Critical	955	574	516	417	426	604	599	693	744	774	871	1,038
1989	Dry	585	369	415	293	374	487	592	688	677	761	714	935
1990	Critical	672	546	524	496	578	532	590	714	745	811	916	1,058
1991	Critical	730	595	472	465	578	558	567	734	802	798	927	927
1992	Critical	588	563	423	379	358	501	678	757	738	847	726	648
1993	Above Normal	591	407	437	441	377	354	511	604	635	732	847	844
1994	Critical	763	492	478	365	531	641	558	694	731	762	781	592
1995	Wet	400	273	219	333	274	291	292	306	410	626	571	571
1996	Wet	371	350	334	411	342	349	416	392	419	335	281	317
1997	Wet	263	317	370	375	327	351	530	661	679	703	627	506
1998	Wet	354	295	282	259	266	280	273	283	309	411	462	273
1999	Wet	369	355	367	356	298	336	458	455	549	692	715	715
2000	Above Normal	346	344	372	374	362	329	504	560	561	730	698	663
2001	Dry	528	535	431	394	387	445	550	657	663	717	544	949
2002	Dry	840	467	482	351	387	475	545	665	582	599	483	927
2003	Above Normal	567	398	374	265	286	326	536					
	Average	549	426	392	379	371	399	498	570	568	638	635	618
	Wet	399	317	308	346	335	323	392	411	445	554	567	528
	Above Normal	485	382	375	358	348	337	504	581	576	652	627	598
	Below Normal	522	407	376	360	324	374	519	622	576	613	621	579
	Dry	647	503	446	374	387	469	571	666	622	679	660	695
	Critical	820	611	524	499	500	547	588	700	735	776	768	764

Table 108: Simulated Electrical Conductivity at Delta Mendota Canal at Tracy Pumping Plant (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								598	595	640	632	613
1922	Above Normal	452	347	357	355	390	343	477	559	571	629	516	487
1923	Below Normal	561	365	366	381	333	379	495	528	564	689	765	765
1924	Critical	991	687	576	570	498	518	556	669	690	739	854	754
1925	Dry	793	447	375	394	339	416	561	666	599	712	768	733
1926	Dry	638	432	480	403	384	467	571	680	524	471	565	680
1927	Wet	550	361	360	342	305	319	485	566	506	513	553	553
1928	Above Normal	414	353	415	342	331	341	538	620	629	750	776	881
1929	Critical	790	637	542	543	455	485	554	665	712	754	686	650
1930	Dry	589	486	446	390	384	486	599	697	629	717	792	931
1931	Critical	887	710	604	601	499	548	567	663	708	639	544	544
1932	Dry	677	515	482	448	496	429	619	689	576	698	783	797
1933	Critical	747	588	516	513	472	494	546	647	708	731	728	773
1934	Critical	938	684	572	517	424	474	558	678	683	763	809	683
1935	Below Normal	578	395	399	369	320	392	502	634	603	716	693	693
1936	Below Normal	352	327	386	384	319	368	469	568	574	685	763	504
1937	Below Normal	454	318	305	453	364	390	477	609	472	440	557	454
1938	Wet	355	278	271	272	370	321	325	306	345	611	770	773
1939	Dry	654	593	423	363	399	470	542	650	610	725	740	740
1940	Above Normal	358	308	363	362	354	316	491	571	607	639	542	495
1941	Wet	328	265	263	392	403	349	416	397	500	573	491	323
1942	Wet	368	310	295	396	401	328	346	347	391	453	405	295
1943	Wet	324	298	362	414	356	343	490	583	559	680	774	774
1944	Dry	553	402	383	377	377	483	591	688	607	614	615	591
1945	Below Normal	359	379	369	361	347	380	523	569	543	482	469	462
1946	Below Normal	447	386	376	369	326	387	541	630	614	684	650	671
1947	Dry	626	471	441	369	385	480	568	661	624	777	804	804
1948	Below Normal	645	420	415	341	300	383	498	596	618	727	787	894
1949	Dry	632	462	509	436	356	474	553	653	618	706	695	604
1950	Below Normal	540	381	381	355	304	352	522	627	467	450	414	299
1951	Above Normal	387	351	290	310	308	321	523	596	625	662	556	556
1952	Wet	427	247	224	316	369	308	300	304	410	591	472	505
1953	Wet	521	353	319	309	284	328	432	420	494	641	751	533
1954	Above Normal	504	383	435	351	340	309	492	622	647	634	532	574
1955	Dry	634	511	476	393	356	506	557	644	676	758	454	454
1956	Wet	364	346	343	369	398	346	348	320	375	604	760	657
1957	Above Normal	520	435	340	325	311	333	541	519	370	485	508	610
1958	Wet	545	224	203	333	382	319	312	308	388	642	723	530
1959	Below Normal	736	479	401	353	330	344	486	637	650	733	771	771
1960	Dry	574	593	495	353	377	451	634	700	632	796	789	778
1961	Dry	623	572	459	343	372	445	548	639	639	736	815	700
1962	Below Normal	527	387	356	342	332	359	580	622	360	480	507	564
1963	Wet	551	407	362	341	318	309	483	563	543	461	538	538
1964	Dry	611	528	511	383	389	505	570	651	654	580	467	368
1965	Wet	433	337	362	340	320	335	467	564	457	458	499	482
1966	Below Normal	489	392	409	340	324	368	569	677	673	701	626	551
1967	Wet	436	294	242	317	308	303	296	302	364	572	661	661
1968	Below Normal	522	504	395	346	324	362	526	651	642	618	707	454
1969	Wet	417	290	254	270	369	324	339	308	357	476	318	344
1970	Wet	348	341	364	334	319	319	504	625	509	517	471	538
1971	Wet	485	328	332	299	277	317	444	424	534	699	651	651
1972	Below Normal	518	418	403	357	325	380	549	694	564	518	628	608
1973	Above Normal	492	372	395	381	313	344	489	589	427	461	493	466
1974	Wet	322	323	370	406	348	346	385	329	399	570	572	384
1975	Wet	314	335	353	393	353	351	387	323	343	524	697	697
1976	Critical	700	533	495	542	593	610	670	735	681	810	790	897
1977	Critical	946	716	612	621	595	559	612	747	775	811	684	664
1978	Above Normal	692	452	349	379	379	364	491	595	619	692	651	400
1979	Below Normal	329	353	321	334	302	395	536	643	602	605	460	460
1980	Above Normal	413	371	363	362	418	365	440	532	550	719	781	566
1981	Dry	505	409	391	363	404	473	608	704	561	455	563	324
1982	Wet	339	235	230	355	390	326	267	213	283	394	423	374
1983	Wet	302	295	281	258	236	208	230	278	220	330	357	357
1984	Wet	338	373	383	384	323	341	486	515	463	441	472	601
1985	Dry	624	478	422	355	408	490	578	622	593	670	600	535
1986	Wet	347	269	249	390	377	351	450	512	540	699	754	776
1987	Dry	628	591	449	362	410	501	550	661	644	735	751	751
1988	Critical	981	595	528	425	429	607	602	693	730	770	865	983
1989	Dry	590	395	435	303	376	484	595	692	673	748	701	851
1990	Critical	695	584	539	501	573	532	593	715	735	799	925	1,026
1991	Critical	687	573	483	456	573	582	563	723	784	786	927	927
1992	Critical	589	573	451	393	360	504	682	757	727	838	725	643
1993	Above Normal	563	390	420	406	377	354	512	602	634	746	813	897
1994	Critical	792	525	492	379	533	617	581	730	707	740	785	649
1995	Wet	397	283	228	328	273	291	292	307	404	616	570	570
1996	Wet	362	335	341	414	342	349	416	391	415	359	283	320
1997	Wet	261	316	362	397	329	356	524	650	662	685	626	517
1998	Wet	348	299	296	276	267	280	274	283	309	411	462	271
1999	Wet	364	349	368	359	299	336	458	453	531	666	723	723
2000	Above Normal	334	339	367	376	361	329	503	555	544	710	719	663
2001	Dry	513	462	437	400	389	452	570	673	658	714	546	950
2002	Dry	757	474	491	357	387	476	544	664	571	586	482	928
2003	Above Normal	571	376	355	270	287	327	536					
	Average	535	418	393	380	371	399	499	569	558	632	638	620
	Wet	390	311	308	346	335	323	390	407	435	546	568	529
	Above Normal	475	373	371	352	348	337	503	580	568	647	627	601
	Below Normal	504	393	377	363	325	374	520	620	568	609	628	582
	Dry	623	490	450	377	388	472	575	669	616	678	663	696
	Critical	812	617	534	505	500	544	590	702	720	765	777	766

Table 109: Simulated Electrical Conductivity at Contra Costa Canal Pumping Plant #1 (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								763	748	742	628	648
1922	Above Normal	292	290	284	274	248	291	581	726	740	781	353	300
1923	Below Normal	281	301	306	232	267	387	634	679	714	833	909	909
1924	Critical	535	529	444	665	562	615	697	918	1,012	940	983	698
1925	Dry	445	323	286	250	270	434	701	923	746	890	916	691
1926	Dry	304	265	328	286	401	530	722	932	620	331	371	305
1927	Wet	310	230	274	222	231	288	599	741	642	455	494	494
1928	Above Normal	256	287	300	238	257	335	672	810	829	951	930	1,022
1929	Critical	575	434	418	417	451	554	696	907	980	934	701	406
1930	Dry	268	260	310	307	390	521	805	958	762	816	910	1,071
1931	Critical	643	528	508	636	552	691	704	893	967	711	379	379
1932	Dry	342	348	369	305	274	430	842	947	668	779	765	616
1933	Critical	432	355	355	409	438	547	671	867	985	893	756	458
1934	Critical	407	397	379	400	380	525	729	931	920	963	851	368
1935	Below Normal	260	264	304	232	249	346	617	875	777	872	725	725
1936	Below Normal	364	263	296	236	255	339	570	753	732	825	866	696
1937	Below Normal	698	387	278	251	247	322	553	769	526	268	313	697
1938	Wet	555	448	361	351	268	279	343	240	287	657	986	921
1939	Dry	522	431	365	326	457	488	669	894	781	865	892	892
1940	Above Normal	305	260	294	238	238	282	621	768	809	815	457	524
1941	Wet	378	287	259	246	238	300	477	409	588	771	448	366
1942	Wet	261	274	282	246	238	287	386	319	402	346	403	325
1943	Wet	400	415	288	260	255	301	598	819	787	859	945	945
1944	Dry	338	302	312	292	399	549	727	913	787	689	578	581
1945	Below Normal	516	379	314	244	273	389	682	773	728	587	257	325
1946	Below Normal	329	284	317	246	289	404	667	910	850	886	674	636
1947	Dry	387	326	313	303	434	526	706	899	802	979	878	878
1948	Below Normal	338	257	290	217	256	410	607	744	740	840	963	899
1949	Dry	414	290	325	294	352	562	685	860	771	862	733	414
1950	Below Normal	233	243	300	238	268	376	661	832	501	349	565	446
1951	Above Normal	258	261	280	229	244	303	647	777	823	797	528	528
1952	Wet	318	382	253	263	261	249	267	230	416	749	312	265
1953	Wet	253	281	271	228	236	326	537	482	604	716	1,012	284
1954	Above Normal	224	272	291	231	254	283	599	811	864	781	375	312
1955	Dry	285	320	328	305	360	519	661	829	873	780	858	858
1956	Wet	304	251	295	242	234	292	395	295	403	717	941	587
1957	Above Normal	248	292	294	231	245	327	693	641	323	413	342	494
1958	Wet	589	551	255	251	249	269	295	235	366	770	986	374
1959	Below Normal	307	357	328	312	324	350	579	857	867	891	889	889
1960	Dry	346	319	330	299	443	525	812	944	773	1,027	903	750
1961	Dry	319	279	286	338	439	536	678	816	793	905	907	686
1962	Below Normal	301	257	295	262	306	359	754	773	277	360	379	314
1963	Wet	246	262	293	218	222	275	581	719	681	328	435	435
1964	Dry	278	349	356	284	448	619	716	851	864	597	323	258
1965	Wet	252	269	302	232	243	294	577	736	553	301	307	268
1966	Below Normal	241	274	306	264	314	398	708	906	912	880	514	270
1967	Wet	277	295	277	269	293	261	259	219	331	664	833	833
1968	Below Normal	227	295	331	291	318	362	647	854	844	689	547	770
1969	Wet	568	457	370	308	264	287	364	241	319	451	496	361
1970	Wet	262	300	293	243	249	304	621	854	667	388	243	231
1971	Wet	221	265	271	219	233	308	525	451	619	877	742	742
1972	Below Normal	305	289	311	321	317	406	686	967	705	404	469	424
1973	Above Normal	290	266	310	243	235	321	603	750	461	276	269	252
1974	Wet	259	293	291	246	231	317	422	281	430	669	539	408
1975	Wet	303	311	296	233	229	322	417	263	285	482	789	789
1976	Critical	566	419	407	624	725	792	963	1,076	885	1,104	825	869
1977	Critical	680	566	525	724	729	716	832	1,065	1,071	1,025	692	405
1978	Above Normal	458	416	329	300	250	348	649	796	864	882	717	395
1979	Below Normal	315	278	305	242	264	425	705	918	838	721	449	449
1980	Above Normal	567	361	313	307	272	297	524	711	721	934	999	376
1981	Dry	232	272	318	339	459	568	800	980	678	265	450	347
1982	Wet	423	424	264	256	259	293	312	206	271	433	826	749
1983	Wet	636	565	377	316	310	239	206	207	240	405	432	432
1984	Wet	254	303	316	254	248	313	618	748	643	266	279	470
1985	Dry	357	348	326	299	454	582	742	834	762	826	579	646
1986	Wet	709	363	250	275	273	308	555	695	758	926	887	748
1987	Dry	402	357	335	344	473	530	689	883	822	920	836	836
1988	Critical	427	359	381	382	522	789	759	945	977	943	1,039	633
1989	Dry	356	241	269	262	446	601	774	919	863	922	761	680
1990	Critical	376	357	339	575	731	635	768	996	1,005	1,022	1,060	1,010
1991	Critical	637	345	314	537	729	687	733	1,049	1,098	952	1,151	1,151
1992	Critical	348	288	311	379	416	689	957	1,049	949	1,062	752	461
1993	Above Normal	349	241	254	229	229	323	658	803	831	885	1,007	951
1994	Critical	496	343	307	373	688	835	693	943	952	902	906	287
1995	Wet	536	402	291	274	306	241	218	225	411	745	441	441
1996	Wet	487	289	290	251	236	321	471	377	465	559	587	390
1997	Wet	329	314	304	260	262	337	664	945	937	917	638	1,087
1998	Wet	661	347	296	346	296	232	208	205	211	211	291	333
1999	Wet	271	289	301	236	233	319	555	513	664	815	954	954
2000	Above Normal	346	249	302	243	244	304	623	748	705	921	783	553
2001	Dry	307	285	352	347	413	495	662	884	859	871	341	366
2002	Dry	349	266	352	285	450	577	699	889	695	590	259	318
2003	Above Normal	253	225	280	220	235	317	660					
	Average	378	328	317	304	339	417	614	734	700	725	665	577
	Wet	387	341	293	259	254	291	441	448	499	595	625	547
	Above Normal	320	285	294	249	246	311	628	759	727	765	616	530
	Below Normal	337	295	306	256	282	377	648	829	715	672	609	603
	Dry	347	310	326	304	409	533	727	897	773	773	681	622
	Critical	510	410	391	510	577	673	767	970	983	954	841	594

Table 110: Simulated Electrical Conductivity at Contra Costa Canal Pumping Plant #1 (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								760	740	738	627	648
1922	Above Normal	298	295	284	274	249	291	580	722	727	762	352	300
1923	Below Normal	282	302	303	232	268	388	622	673	716	834	908	908
1924	Critical	553	566	454	667	562	615	696	916	984	888	1,032	713
1925	Dry	493	360	286	251	270	435	704	920	738	890	913	688
1926	Dry	307	264	329	287	405	535	737	934	614	320	367	303
1927	Wet	317	238	274	222	230	288	598	737	627	428	482	482
1928	Above Normal	262	294	303	239	256	334	671	809	824	958	910	1,013
1929	Critical	564	423	419	421	452	555	696	905	969	926	710	407
1930	Dry	271	263	313	308	390	522	804	960	764	817	910	1,072
1931	Critical	640	530	510	636	546	687	705	887	955	703	377	377
1932	Dry	345	347	362	296	275	428	837	941	662	774	752	571
1933	Critical	416	354	366	412	438	546	673	862	966	884	762	408
1934	Critical	394	408	386	403	381	525	730	928	884	939	980	388
1935	Below Normal	268	278	301	232	248	346	622	855	759	864	749	749
1936	Below Normal	367	264	290	235	256	336	558	747	727	822	916	753
1937	Below Normal	629	370	278	248	246	323	560	825	542	258	304	710
1938	Wet	576	450	344	354	269	279	342	237	283	639	981	926
1939	Dry	521	437	366	325	452	486	670	895	781	862	904	904
1940	Above Normal	311	264	284	239	238	282	617	747	806	837	461	515
1941	Wet	376	276	254	256	245	300	476	405	582	755	435	332
1942	Wet	255	283	277	246	238	287	385	318	394	330	393	317
1943	Wet	373	426	286	259	255	304	602	788	724	825	971	971
1944	Dry	345	305	316	291	398	553	747	954	788	659	572	563
1945	Below Normal	483	362	311	244	273	389	682	769	695	549	257	314
1946	Below Normal	326	292	316	247	290	418	682	877	833	880	667	629
1947	Dry	382	314	336	308	437	540	715	894	786	1,013	963	963
1948	Below Normal	342	255	289	216	255	415	606	763	787	889	915	1,016
1949	Dry	517	310	332	297	357	568	703	870	770	855	743	416
1950	Below Normal	235	244	298	237	262	365	660	827	493	341	536	421
1951	Above Normal	261	264	280	229	244	305	648	774	821	802	530	530
1952	Wet	316	378	247	263	262	249	266	229	406	731	311	265
1953	Wet	254	283	273	228	236	314	497	444	568	663	981	281
1954	Above Normal	225	273	293	232	254	282	595	809	843	722	366	310
1955	Dry	289	324	332	307	356	536	689	847	879	767	839	839
1956	Wet	308	255	292	253	238	283	360	259	331	646	932	611
1957	Above Normal	249	337	302	231	244	325	690	635	314	391	339	494
1958	Wet	581	527	254	249	249	269	294	234	359	748	980	373
1959	Below Normal	333	398	336	314	327	349	580	851	854	884	899	899
1960	Dry	344	322	336	298	441	523	809	942	774	1,027	904	750
1961	Dry	319	282	288	337	439	537	699	833	797	904	918	689
1962	Below Normal	304	261	297	267	312	373	778	782	278	350	378	315
1963	Wet	249	264	299	218	222	274	580	716	661	316	427	427
1964	Dry	279	347	358	283	446	617	720	856	844	569	320	255
1965	Wet	247	271	295	232	244	295	581	744	558	298	304	268
1966	Below Normal	240	275	311	264	313	397	707	901	892	831	511	270
1967	Wet	277	295	274	266	296	261	258	218	319	619	816	816
1968	Below Normal	230	304	337	294	318	361	648	852	841	683	536	783
1969	Wet	603	473	369	316	269	288	364	240	309	425	488	356
1970	Wet	266	305	302	245	250	305	619	846	658	375	243	232
1971	Wet	223	267	269	219	232	308	524	449	613	866	735	735
1972	Below Normal	305	292	315	321	316	404	683	963	704	408	471	425
1973	Above Normal	298	273	313	242	236	320	602	799	476	276	263	247
1974	Wet	256	286	289	247	231	318	420	276	410	640	533	419
1975	Wet	299	309	296	235	230	321	415	263	282	462	770	770
1976	Critical	560	407	403	623	726	783	973	1,073	873	1,104	846	883
1977	Critical	686	568	526	724	729	716	831	1,062	1,063	1,021	695	391
1978	Above Normal	442	406	338	304	250	345	645	791	860	880	743	400
1979	Below Normal	314	280	303	243	263	420	694	913	812	671	433	433
1980	Above Normal	588	358	314	313	275	294	510	703	718	937	995	368
1981	Dry	230	273	321	336	453	565	789	976	673	264	450	341
1982	Wet	397	402	258	258	260	292	311	206	270	417	822	799
1983	Wet	661	563	380	320	312	239	206	207	239	410	435	435
1984	Wet	257	314	317	255	248	314	619	725	584	257	275	464
1985	Dry	356	355	327	299	454	582	734	828	760	826	578	633
1986	Wet	699	370	252	278	275	314	560	695	754	925	901	759
1987	Dry	399	366	340	341	470	526	690	882	819	906	829	829
1988	Critical	432	368	386	383	525	794	764	943	964	943	1,031	644
1989	Dry	361	243	274	263	448	594	783	927	862	899	735	666
1990	Critical	375	358	344	565	722	638	772	996	992	1,007	1,076	969
1991	Critical	606	341	318	502	726	723	712	1,026	1,078	945	1,158	1,158
1992	Critical	348	289	317	377	415	693	961	1,046	936	1,056	752	461
1993	Above Normal	351	245	264	245	236	325	662	801	840	928	930	1,066
1994	Critical	526	354	313	379	689	796	741	996	911	869	915	284
1995	Wet	548	418	289	278	305	241	218	224	400	725	439	439
1996	Wet	468	291	288	251	236	321	471	376	459	495	567	394
1997	Wet	324	314	302	267	261	343	665	933	928	893	630	1,111
1998	Wet	737	355	294	318	293	232	208	205	211	210	291	331
1999	Wet	274	295	301	236	233	320	553	507	646	755	962	962
2000	Above Normal	349	254	302	245	244	305	621	741	682	885	834	571
2001	Dry	309	287	356	348	413	508	714	914	858	872	340	372
2002	Dry	352	274	355	284	449	579	693	885	682	567	258	319
2003	Above Normal	256	225	277	220	235	317	659					
	Average	381	332	318	304	339	418	615	733	690	711	665	581
	Wet	390	343	291	260	254	291	438	442	484	571	619	549
	Above Normal	324	291	296	251	247	310	625	758	721	760	612	538
	Below Normal	333	298	306	257	282	377	649	828	710	662	606	616
	Dry	357	315	329	303	408	535	735	903	770	766	683	621
	Critical	508	414	395	508	576	673	771	970	965	940	861	590

Table 111: Simulated Electrical Conductivity at West Canal at mouth of CCForebay Intake (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								588	587	605	560	560
1922	Above Normal	429	342	336	338	305	295	463	559	582	622	466	468
1923	Below Normal	509	366	347	319	277	340	495	528	555	679	754	754
1924	Critical	934	640	549	558	484	505	544	671	726	751	815	698
1925	Dry	913	453	349	350	308	374	542	671	599	717	746	668
1926	Dry	569	401	445	367	354	436	550	682	505	398	529	612
1927	Wet	522	336	334	276	244	271	467	567	509	468	490	490
1928	Above Normal	391	326	381	291	288	300	527	620	635	743	774	873
1929	Critical	805	588	519	510	432	468	544	667	729	740	628	576
1930	Dry	564	443	420	360	346	452	590	698	622	710	770	925
1931	Critical	845	668	586	595	489	542	563	665	726	615	461	461
1932	Dry	697	561	476	442	454	388	618	699	572	678	724	746
1933	Critical	711	564	487	478	458	510	536	648	728	726	683	672
1934	Critical	864	622	541	487	404	458	549	680	708	780	730	637
1935	Below Normal	535	400	367	313	260	339	477	650	610	714	630	630
1936	Below Normal	355	334	372	333	266	317	456	570	574	679	739	442
1937	Below Normal	411	326	281	407	312	344	455	580	444	415	504	389
1938	Wet	335	255	259	253	336	298	311	271	312	591	767	763
1939	Dry	648	571	401	327	380	447	536	657	604	716	720	720
1940	Above Normal	358	313	342	307	286	268	477	581	616	627	481	443
1941	Wet	337	282	276	372	332	305	392	372	500	552	454	332
1942	Wet	365	323	294	354	336	301	335	316	368	389	360	301
1943	Wet	306	303	344	375	307	297	474	610	597	686	764	764
1944	Dry	509	398	357	324	345	448	572	675	610	589	574	520
1945	Below Normal	363	399	352	308	283	345	520	583	566	494	410	461
1946	Below Normal	450	383	356	322	283	345	524	661	639	689	628	633
1947	Dry	596	487	427	325	363	445	556	667	627	765	741	741
1948	Below Normal	611	391	377	279	260	345	479	576	588	692	801	947
1949	Dry	532	433	479	401	326	445	522	632	611	708	643	523
1950	Below Normal	535	332	359	308	268	323	506	627	432	383	343	291
1951	Above Normal	376	355	281	266	257	275	506	594	630	639	503	503
1952	Wet	412	260	210	299	337	280	269	262	387	568	420	470
1953	Wet	459	338	292	258	242	295	427	415	497	644	751	413
1954	Above Normal	447	332	398	299	292	266	473	617	669	634	448	520
1955	Dry	611	503	444	358	327	473	525	624	671	663	392	392
1956	Wet	360	339	343	356	322	306	348	303	381	611	762	563
1957	Above Normal	445	434	315	278	262	292	530	508	328	422	422	532
1958	Wet	509	222	214	320	333	288	285	264	358	632	710	458
1959	Below Normal	724	475	375	316	294	306	457	636	652	730	746	746
1960	Dry	487	516	457	321	362	422	626	704	617	786	758	742
1961	Dry	579	491	421	327	360	422	511	618	628	720	794	654
1962	Below Normal	487	394	335	287	286	313	550	610	310	403	404	461
1963	Wet	568	387	323	281	245	262	463	559	546	394	462	462
1964	Dry	547	493	477	338	373	484	554	647	669	540	411	348
1965	Wet	446	354	340	302	267	289	456	557	448	403	441	432
1966	Below Normal	468	376	385	294	285	332	555	680	694	715	541	446
1967	Wet	397	293	245	290	304	277	267	259	335	557	640	640
1968	Below Normal	483	472	373	304	289	317	503	648	644	585	594	387
1969	Wet	402	279	246	246	334	300	323	273	330	445	300	346
1970	Wet	345	324	347	303	263	280	488	636	497	444	377	415
1971	Wet	376	309	297	250	236	278	418	397	525	686	610	610
1972	Below Normal	409	393	374	315	292	339	530	705	544	451	527	532
1973	Above Normal	462	374	393	343	257	298	479	576	398	388	418	399
1974	Wet	322	319	352	365	277	302	362	298	391	546	518	389
1975	Wet	321	327	324	340	278	308	359	289	306	476	682	682
1976	Critical	660	508	475	526	579	610	677	752	683	818	770	868
1977	Critical	870	684	602	619	594	556	604	749	791	808	634	562
1978	Above Normal	632	421	336	386	309	326	499	601	644	681	613	401
1979	Below Normal	336	354	323	295	264	361	534	665	633	592	415	415
1980	Above Normal	397	362	362	383	371	326	430	542	559	720	784	470
1981	Dry	487	405	367	330	380	450	605	719	551	368	472	305
1982	Wet	327	228	214	343	350	306	275	215	262	380	358	331
1983	Wet	272	282	271	243	226	215	220	244	220	303	345	345
1984	Wet	327	362	359	339	259	290	483	560	488	370	391	558
1985	Dry	632	478	394	312	378	467	578	623	594	650	541	472
1986	Wet	317	266	242	377	328	305	441	527	569	707	742	756
1987	Dry	628	539	421	331	387	481	540	660	644	731	724	724
1988	Critical	852	549	497	404	421	597	589	691	749	771	864	953
1989	Dry	483	328	384	279	364	467	580	680	664	754	662	858
1990	Critical	642	491	498	491	578	521	583	717	751	810	903	1,012
1991	Critical	651	537	448	463	577	548	556	739	807	793	921	921
1992	Critical	538	478	407	377	358	492	676	760	734	839	681	562
1993	Above Normal	495	352	391	372	292	308	503	607	631	712	825	799
1994	Critical	723	467	450	357	528	635	539	681	725	738	748	488
1995	Wet	370	283	212	322	268	258	241	263	385	587	476	476
1996	Wet	350	345	326	367	293	306	392	365	406	321	254	310
1997	Wet	265	307	346	332	285	304	520	673	687	680	573	380
1998	Wet	342	298	281	247	259	256	240	251	263	326	403	271
1999	Wet	353	333	346	314	252	293	439	437	540	674	685	685
2000	Above Normal	345	323	351	320	301	285	495	565	559	719	661	570
2001	Dry	453	484	419	374	360	420	541	649	655	686	455	923
2002	Dry	757	442	453	324	369	453	527	660	558	546	380	858
2003	Above Normal	467	326	331	236	247	282	519					
	Average	505	400	372	346	333	367	484	564	557	611	593	571
	Wet	373	306	294	312	289	287	373	392	427	517	528	486
	Above Normal	437	355	351	318	289	293	492	580	570	626	580	545
	Below Normal	477	385	355	314	280	333	503	623	563	587	574	538
	Dry	594	468	422	344	363	443	560	665	611	651	613	652
	Critical	758	566	505	489	492	537	580	702	738	766	737	701

Table 112: Simulated Electrical Conductivity at West Canal at mouth of CCForebay Intake (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								586	582	601	560	559
1922	Above Normal	420	335	337	338	305	295	462	557	573	612	467	465
1923	Below Normal	525	359	343	321	279	340	488	526	555	678	754	754
1924	Critical	955	665	560	560	485	504	544	670	703	722	842	706
1925	Dry	789	448	350	353	309	374	544	670	593	708	742	667
1926	Dry	604	411	452	372	357	438	559	685	502	392	516	606
1927	Wet	508	339	335	278	244	271	466	565	499	453	484	484
1928	Above Normal	383	334	383	295	290	300	526	619	631	743	764	863
1929	Critical	765	585	526	522	434	469	545	667	722	734	633	590
1930	Dry	560	461	425	368	349	457	590	699	623	710	769	925
1931	Critical	855	676	590	594	485	538	560	666	716	607	460	460
1932	Dry	641	508	455	419	464	392	615	695	567	687	722	729
1933	Critical	684	539	499	489	454	479	535	645	717	716	703	655
1934	Critical	852	638	554	499	406	456	548	678	687	760	798	644
1935	Below Normal	534	383	364	314	260	339	484	639	599	705	642	642
1936	Below Normal	350	317	364	332	267	318	449	566	569	673	753	489
1937	Below Normal	410	322	295	410	308	342	458	611	452	390	505	407
1938	Wet	337	271	263	256	337	297	310	270	310	582	766	760
1939	Dry	624	569	402	329	377	447	535	656	603	711	726	726
1940	Above Normal	354	301	344	311	286	268	476	570	613	636	482	472
1941	Wet	335	269	258	359	331	305	391	370	496	543	458	327
1942	Wet	353	308	289	354	335	301	335	315	364	382	393	302
1943	Wet	315	298	344	375	306	297	476	589	562	672	775	775
1944	Dry	503	389	361	325	344	457	581	696	609	571	570	574
1945	Below Normal	359	378	352	312	284	345	520	581	545	475	409	454
1946	Below Normal	434	376	357	324	283	354	533	642	627	681	624	628
1947	Dry	590	450	424	330	366	453	562	670	619	778	791	791
1948	Below Normal	606	390	376	278	258	348	478	588	613	714	772	881
1949	Dry	565	439	490	407	329	449	535	641	611	702	648	504
1950	Below Normal	495	346	360	310	270	316	505	624	428	426	363	294
1951	Above Normal	370	339	282	268	256	276	507	592	628	638	498	498
1952	Wet	410	256	220	304	338	280	269	262	381	558	419	466
1953	Wet	452	337	295	259	242	289	402	391	473	611	734	412
1954	Above Normal	422	340	401	301	293	265	471	616	650	598	443	494
1955	Dry	600	489	448	362	328	483	542	635	674	702	400	400
1956	Wet	352	332	328	342	321	306	328	282	342	570	755	578
1957	Above Normal	399	409	320	280	261	291	528	504	325	411	420	530
1958	Wet	504	213	206	320	333	288	285	264	355	622	707	457
1959	Below Normal	698	470	380	318	295	305	457	634	645	724	751	751
1960	Dry	496	535	465	324	362	421	624	703	618	786	759	730
1961	Dry	586	502	426	326	360	423	523	629	631	717	800	653
1962	Below Normal	480	368	327	289	290	321	567	617	313	397	402	470
1963	Wet	528	389	326	281	245	261	462	557	531	386	457	457
1964	Dry	575	511	482	339	371	482	557	649	654	524	419	347
1965	Wet	417	335	335	302	267	290	458	562	450	402	440	431
1966	Below Normal	409	373	388	298	285	332	554	677	672	685	539	447
1967	Wet	389	291	244	305	302	277	266	259	327	534	631	631
1968	Below Normal	475	476	377	307	289	317	503	647	640	579	626	407
1969	Wet	413	279	244	257	337	301	323	273	323	433	303	343
1970	Wet	339	329	346	302	261	280	485	631	491	437	377	464
1971	Wet	387	310	304	250	236	277	418	396	522	678	606	606
1972	Below Normal	399	394	380	317	293	338	527	702	544	453	527	530
1973	Above Normal	452	354	371	337	257	298	479	605	406	388	424	399
1974	Wet	315	312	347	362	276	302	361	296	380	530	517	394
1975	Wet	312	320	325	341	278	308	358	288	304	464	671	671
1976	Critical	662	511	474	526	580	604	681	751	677	816	779	874
1977	Critical	873	687	603	619	594	556	604	747	785	804	636	593
1978	Above Normal	658	453	344	365	305	324	497	598	641	679	624	403
1979	Below Normal	329	343	317	295	265	359	528	661	615	562	444	444
1980	Above Normal	409	368	353	350	368	331	423	537	557	721	781	466
1981	Dry	417	391	372	331	377	448	598	716	547	366	473	319
1982	Wet	331	228	224	338	349	307	275	215	269	389	362	343
1983	Wet	271	283	274	245	226	215	220	245	223	311	356	356
1984	Wet	325	357	361	342	260	291	484	539	453	365	389	551
1985	Dry	596	464	400	316	378	466	572	620	592	648	541	496
1986	Wet	323	270	246	371	326	308	444	527	565	705	748	755
1987	Dry	601	552	428	333	385	479	541	661	642	720	719	719
1988	Critical	895	572	509	409	423	601	592	691	738	768	857	915
1989	Dry	500	357	401	284	366	462	584	685	663	741	645	805
1990	Critical	668	525	513	494	572	521	586	718	744	799	908	990
1991	Critical	635	530	458	451	573	573	550	727	790	783	921	921
1992	Critical	542	493	427	389	359	493	679	760	726	830	681	560
1993	Above Normal	489	357	383	367	295	308	506	606	637	732	780	867
1994	Critical	768	501	464	366	530	606	566	717	693	713	752	498
1995	Wet	361	283	221	317	268	258	241	263	379	575	474	474
1996	Wet	347	333	332	371	293	307	393	365	402	349	256	314
1997	Wet	263	304	340	363	292	307	520	663	677	663	570	401
1998	Wet	336	303	295	265	260	256	240	251	264	326	403	272
1999	Wet	349	333	347	315	253	294	438	434	524	642	698	698
2000	Above Normal	336	323	349	323	300	285	493	561	543	697	690	579
2001	Dry	450	447	424	379	361	424	564	667	655	683	462	927
2002	Dry	713	456	461	328	369	454	524	657	550	531	379	862
2003	Above Normal	484	330	312	237	248	283	519					
	Average	498	399	374	348	334	367	484	564	550	604	596	574
	Wet	368	303	294	314	289	287	371	387	418	507	529	489
	Above Normal	431	354	348	314	289	294	491	579	566	621	578	549
	Below Normal	465	378	356	316	280	334	504	622	558	582	579	543
	Dry	578	466	426	346	364	445	564	669	609	649	616	654
	Critical	763	577	515	493	491	533	582	703	725	754	747	700

Table 113: Simulated Electrical Conductivity at Middle River at Victoria Canal (umhos/cm) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								432	467	469	479	549
1922	Above Normal	433	376	334	356	351	297	351	416	434	531	490	489
1923	Below Normal	470	416	359	343	286	299	371	403	431	489	598	598
1924	Critical	649	605	563	470	409	431	444	495	567	564	632	629
1925	Dry	662	516	344	371	327	314	402	496	484	508	566	567
1926	Dry	428	384	434	365	317	347	407	497	432	312	391	545
1927	Wet	465	354	332	292	259	257	353	425	413	349	403	403
1928	Above Normal	403	342	359	314	288	269	393	458	471	537	599	717
1929	Critical	627	557	517	473	391	396	444	503	563	550	500	444
1930	Dry	407	360	437	372	309	344	431	518	513	549	589	762
1931	Critical	703	622	566	550	403	445	455	498	573	511	400	400
1932	Dry	599	552	465	422	389	337	441	529	492	512	566	580
1933	Critical	551	501	486	445	432	429	445	495	564	546	529	499
1934	Critical	556	568	549	480	383	380	436	512	530	583	622	499
1935	Below Normal	472	440	356	326	273	288	369	475	478	506	531	531
1936	Below Normal	373	346	362	352	274	297	354	433	455	497	607	520
1937	Below Normal	520	360	284	334	344	320	359	443	395	395	504	411
1938	Wet	340	289	279	277	349	313	292	300	317	415	610	659
1939	Dry	616	578	416	320	316	359	422	482	478	521	627	627
1940	Above Normal	414	329	350	336	284	257	359	433	450	505	480	501
1941	Wet	369	300	282	367	384	309	328	338	387	455	494	394
1942	Wet	355	364	308	352	379	314	301	310	345	336	412	344
1943	Wet	317	315	341	391	345	294	359	443	448	505	595	595
1944	Dry	495	419	356	327	300	358	417	492	461	444	471	541
1945	Below Normal	482	414	362	327	291	308	383	431	418	449	422	490
1946	Below Normal	471	421	364	347	277	298	390	471	466	520	524	543
1947	Dry	448	403	443	326	305	347	425	492	481	575	564	564
1948	Below Normal	493	360	384	294	263	293	368	441	467	506	626	780
1949	Dry	527	381	457	422	301	356	402	485	485	539	522	429
1950	Below Normal	366	335	350	300	269	287	375	457	400	391	435	366
1951	Above Normal	354	375	291	264	256	251	376	445	461	513	495	495
1952	Wet	424	304	233	300	354	305	278	290	341	450	401	461
1953	Wet	403	358	295	274	252	272	342	354	398	469	636	352
1954	Above Normal	329	334	393	326	271	251	357	460	480	491	410	433
1955	Dry	446	459	459	375	299	357	410	483	500	601	505	505
1956	Wet	376	352	354	371	374	317	315	311	356	444	617	486
1957	Above Normal	347	377	318	293	267	262	387	412	325	327	375	511
1958	Wet	567	303	226	307	360	305	285	291	328	427	602	434
1959	Below Normal	486	518	384	311	269	279	359	464	491	535	573	573
1960	Dry	413	361	454	327	296	332	442	522	475	572	595	597
1961	Dry	422	384	447	314	302	323	395	470	498	525	620	643
1962	Below Normal	504	396	345	298	270	274	401	498	333	316	330	428
1963	Wet	440	428	329	292	266	252	350	420	446	304	366	366
1964	Dry	436	438	473	347	308	374	423	485	488	456	409	367
1965	Wet	407	403	342	315	284	285	349	420	387	360	430	450
1966	Below Normal	389	354	361	298	264	277	408	491	504	600	520	407
1967	Wet	412	371	263	300	322	293	278	295	317	383	531	531
1968	Below Normal	364	405	381	305	268	279	388	481	487	456	580	425
1969	Wet	414	318	260	252	344	312	297	302	321	370	388	357
1970	Wet	355	337	330	317	264	261	372	466	417	365	337	333
1971	Wet	339	319	302	269	244	253	339	348	408	503	471	471
1972	Below Normal	342	310	389	301	275	283	400	503	452	366	472	510
1973	Above Normal	448	403	385	360	274	278	365	420	376	365	442	411
1974	Wet	368	322	352	376	316	288	321	314	341	407	435	420
1975	Wet	343	323	332	347	322	297	319	312	318	352	524	524
1976	Critical	539	428	467	445	440	454	493	553	522	635	616	669
1977	Critical	703	643	590	553	503	446	451	542	595	597	589	585
1978	Above Normal	658	499	346	396	355	307	372	430	456	479	539	459
1979	Below Normal	369	354	339	314	264	315	390	466	455	444	451	451
1980	Above Normal	415	382	375	396	410	346	339	407	429	513	669	426
1981	Dry	398	411	378	323	314	364	438	509	461	315	444	367
1982	Wet	420	239	236	330	379	315	266	223	270	392	419	339
1983	Wet	277	289	280	248	245	226	226	278	242	312	386	386
1984	Wet	316	369	349	340	271	271	366	410	416	309	323	459
1985	Dry	534	497	413	314	315	367	427	468	463	486	446	534
1986	Wet	341	299	252	347	365	304	347	392	413	509	596	594
1987	Dry	519	474	449	316	316	368	422	495	509	533	617	617
1988	Critical	563	522	501	405	331	477	477	523	570	571	684	650
1989	Dry	464	287	394	284	294	354	434	497	510	558	505	600
1990	Critical	545	423	449	432	449	441	455	532	586	651	741	771
1991	Critical	602	446	463	431	447	452	441	531	632	628	713	713
1992	Critical	448	381	418	364	315	373	480	561	579	617	659	553
1993	Above Normal	470	331	370	371	346	295	371	439	479	510	626	673
1994	Critical	550	427	450	344	384	466	403	494	570	529	698	475
1995	Wet	439	319	233	316	297	277	265	298	337	435	446	446
1996	Wet	416	356	345	367	330	296	334	353	361	367	262	333
1997	Wet	316	295	331	337	300	275	385	477	487	518	558	453
1998	Wet	393	329	299	267	280	272	267	291	307	299	419	379
1999	Wet	329	351	346	328	269	271	351	368	411	474	588	588
2000	Above Normal	367	329	355	345	291	267	371	425	424	524	543	493
2001	Dry	420	430	438	381	318	357	420	495	492	555	427	602
2002	Dry	608	444	457	343	301	356	404	495	451	451	315	484
2003	Above Normal	437	300	350	248	240	252	385					
	Average	451	394	376	346	319	322	378	437	446	472	514	507
	Wet	382	331	301	319	314	286	319	347	367	404	471	444
	Above Normal	423	365	352	334	303	278	369	431	438	481	512	513
	Below Normal	436	388	359	318	278	293	380	461	445	462	512	502
	Dry	491	432	429	347	313	351	420	495	482	501	510	552
	Critical	586	510	502	449	407	433	452	520	571	582	615	574

Table 114: Simulated Electrical Conductivity at Middle River at Victoria Canal (umhos/cm) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								431	463	465	479	550
1922	Above Normal	429	368	334	357	352	297	351	415	430	523	490	490
1923	Below Normal	477	418	351	347	288	300	368	402	431	488	597	597
1924	Critical	682	635	576	472	407	429	443	495	565	541	650	641
1925	Dry	693	520	344	373	329	315	404	497	478	500	563	568
1926	Dry	458	432	444	369	316	348	412	499	432	308	386	543
1927	Wet	481	376	336	294	260	257	354	424	408	340	398	398
1928	Above Normal	405	356	363	318	290	269	393	457	467	536	591	712
1929	Critical	625	558	520	482	393	397	445	504	561	543	504	448
1930	Dry	440	396	443	378	315	347	431	518	512	549	588	763
1931	Critical	706	637	573	548	399	442	454	498	569	503	399	399
1932	Dry	603	560	431	411	394	344	439	526	488	505	566	567
1933	Critical	561	527	497	453	423	416	444	494	558	535	543	487
1934	Critical	556	586	561	487	384	378	434	510	521	555	676	518
1935	Below Normal	509	443	351	326	272	287	369	471	471	497	540	540
1936	Below Normal	378	331	350	350	275	299	351	429	451	489	610	566
1937	Below Normal	511	354	293	343	338	317	363	453	400	384	498	431
1938	Wet	343	304	282	280	349	313	292	300	318	408	608	661
1939	Dry	625	587	416	323	316	357	420	481	478	515	630	630
1940	Above Normal	413	321	344	340	284	257	358	424	443	509	481	521
1941	Wet	370	283	266	353	378	308	327	337	384	446	489	371
1942	Wet	351	349	301	351	378	313	301	311	344	331	431	346
1943	Wet	344	311	338	391	341	291	359	435	434	490	605	605
1944	Dry	507	442	361	328	299	360	424	503	462	431	466	564
1945	Below Normal	487	396	362	329	294	308	382	429	410	435	421	480
1946	Below Normal	465	419	365	349	278	300	397	464	455	513	521	543
1947	Dry	471	434	429	329	307	352	429	495	478	581	603	603
1948	Below Normal	524	396	385	294	259	295	369	444	469	524	598	719
1949	Dry	544	424	468	428	302	359	405	493	485	531	525	424
1950	Below Normal	389	367	351	302	276	284	374	456	399	413	458	363
1951	Above Normal	355	367	291	266	257	252	377	444	458	511	493	493
1952	Wet	422	297	237	305	356	304	277	291	340	440	399	461
1953	Wet	425	380	299	275	251	273	330	344	387	445	620	350
1954	Above Normal	356	359	399	328	271	252	356	459	472	462	405	424
1955	Dry	462	501	469	377	305	353	414	489	500	615	512	512
1956	Wet	374	349	340	357	368	325	309	303	345	416	605	496
1957	Above Normal	362	420	320	294	266	260	386	410	327	319	372	511
1958	Wet	556	283	221	306	360	305	285	293	330	420	600	437
1959	Below Normal	511	540	389	313	270	278	359	463	486	528	576	576
1960	Dry	433	393	463	331	296	332	441	522	476	572	596	596
1961	Dry	440	411	453	314	301	323	400	476	500	520	626	643
1962	Below Normal	515	402	323	296	271	276	411	502	338	311	328	436
1963	Wet	465	442	335	291	265	251	349	419	438	298	363	363
1964	Dry	462	474	481	347	307	372	424	485	482	441	414	370
1965	Wet	401	384	331	314	284	284	349	420	386	359	429	452
1966	Below Normal	396	385	367	303	264	277	408	489	493	572	518	412
1967	Wet	411	361	261	309	324	292	278	297	317	368	522	522
1968	Below Normal	396	440	386	307	269	279	389	481	485	450	591	475
1969	Wet	429	321	254	272	348	312	297	302	320	360	391	356
1970	Wet	351	345	335	314	262	260	372	462	414	359	336	351
1971	Wet	371	339	304	269	243	252	339	349	406	496	468	468
1972	Below Normal	363	353	396	303	276	283	399	501	452	367	473	511
1973	Above Normal	451	391	359	353	273	279	367	431	381	364	441	415
1974	Wet	361	317	348	374	315	289	321	314	338	396	430	424
1975	Wet	335	320	334	349	322	297	319	312	317	346	515	515
1976	Critical	559	450	469	445	441	450	494	554	519	635	623	677
1977	Critical	708	646	591	553	503	446	451	542	592	592	590	592
1978	Above Normal	683	522	359	383	347	307	370	429	451	475	546	462
1979	Below Normal	361	348	334	314	266	316	388	464	446	423	463	463
1980	Above Normal	430	388	370	373	401	355	338	405	426	510	669	426
1981	Dry	399	418	383	326	313	363	435	506	459	314	446	376
1982	Wet	410	239	242	327	376	316	266	224	278	399	432	355
1983	Wet	276	291	285	251	245	226	226	278	244	328	397	397
1984	Wet	317	369	350	345	273	272	366	401	397	306	321	460
1985	Dry	550	521	421	319	315	367	424	467	461	483	446	545
1986	Wet	350	303	255	346	362	305	349	392	410	505	601	605
1987	Dry	546	507	456	319	315	366	423	496	509	524	612	612
1988	Critical	575	559	516	412	332	479	478	524	564	565	677	650
1989	Dry	487	339	408	293	295	352	436	500	510	546	492	600
1990	Critical	565	456	470	443	444	440	457	534	583	635	751	771
1991	Critical	611	471	476	428	443	469	443	525	621	614	712	712
1992	Critical	463	402	430	384	318	373	482	563	575	608	658	555
1993	Above Normal	490	364	371	381	346	294	373	438	470	527	584	727
1994	Critical	589	477	468	356	388	453	423	514	544	504	701	448
1995	Wet	433	329	242	316	296	276	265	299	337	425	444	444
1996	Wet	403	348	346	373	330	297	335	354	360	391	265	336
1997	Wet	308	299	333	365	313	276	387	468	478	504	554	563
1998	Wet	397	331	309	287	282	273	267	292	308	299	419	376
1999	Wet	331	356	349	330	270	271	351	368	405	450	605	605
2000	Above Normal	360	333	356	347	292	267	372	424	420	504	563	505
2001	Dry	431	443	443	387	320	352	426	505	490	551	433	613
2002	Dry	621	494	468	350	302	357	403	494	449	437	314	489
2003	Above Normal	466	347	326	251	241	253	386					
	Average	462	408	378	348	319	322	379	437	442	466	515	512
	Wet	385	332	301	321	314	286	318	346	363	397	471	451
	Above Normal	433	378	349	333	302	279	369	431	434	475	510	519
	Below Normal	449	400	357	320	278	293	380	461	442	457	514	508
	Dry	510	461	432	350	314	351	422	497	480	496	512	557
	Critical	600	534	512	455	406	431	454	521	564	569	624	575

Table 115: Simulated Chloride Concentration at Contra Costa Canal Pumping Plant #1 (mg/L) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								120	121	132	129	125
1922	Above Normal	85	53	53	53	62	50	86	109	115	130	96	90
1923	Below Normal	104	60	57	60	46	60	93	101	110	145	165	165
1924	Critical	227	138	111	111	92	98	108	139	151	164	183	162
1925	Dry	209	84	58	63	48	69	109	138	122	153	167	157
1926	Dry	123	75	86	64	59	83	110	141	101	86	113	144
1927	Wet	112	58	55	49	39	43	89	111	98	100	109	109
1928	Above Normal	73	53	69	48	46	49	103	126	130	161	171	200
1929	Critical	194	132	102	101	80	88	107	138	153	163	142	131
1930	Dry	119	85	76	59	59	87	120	146	128	152	172	210
1931	Critical	197	148	120	120	93	107	112	137	153	133	105	105
1932	Dry	158	115	93	84	90	72	126	145	115	144	165	177
1933	Critical	169	128	94	93	85	100	105	133	153	158	152	170
1934	Critical	218	139	109	94	71	86	108	142	149	170	162	142
1935	Below Normal	119	71	66	57	44	63	92	132	125	154	143	143
1936	Below Normal	55	51	64	61	41	57	86	112	115	145	163	80
1937	Below Normal	83	44	35	79	56	63	85	115	84	80	107	74
1938	Wet	52	28	29	30	57	44	45	40	51	125	166	169
1939	Dry	142	120	71	54	66	84	104	134	124	155	157	157
1940	Above Normal	56	44	55	54	52	42	91	115	124	129	104	83
1941	Wet	47	33	33	72	67	51	70	65	94	115	87	46
1942	Wet	60	45	38	64	66	46	50	51	64	81	56	37
1943	Wet	44	39	55	69	54	50	89	121	117	145	165	165
1944	Dry	112	70	59	59	59	86	115	139	123	128	125	102
1945	Below Normal	56	65	57	52	50	60	99	112	110	92	84	84
1946	Below Normal	83	64	59	56	45	61	102	134	129	145	134	142
1947	Dry	129	104	78	55	60	85	110	138	129	165	165	165
1948	Below Normal	135	76	69	49	38	60	92	116	120	150	177	220
1949	Dry	129	81	92	73	52	84	104	132	126	151	145	124
1950	Below Normal	114	61	59	52	39	55	99	128	85	66	62	38
1951	Above Normal	64	57	35	40	40	44	99	119	129	137	110	110
1952	Wet	73	25	15	41	57	40	38	39	70	120	85	95
1953	Wet	101	54	42	40	34	47	80	76	97	139	165	102
1954	Above Normal	101	63	74	51	49	41	91	126	138	137	103	116
1955	Dry	133	102	85	62	53	91	105	129	141	145	78	78
1956	Wet	58	53	56	65	65	51	57	49	68	131	165	132
1957	Above Normal	106	83	48	44	41	47	104	99	58	91	95	124
1958	Wet	110	21	14	47	60	43	41	40	63	134	154	102
1959	Below Normal	175	90	64	51	46	50	89	131	136	158	165	165
1960	Dry	111	115	89	51	59	79	130	147	128	173	171	172
1961	Dry	126	111	80	50	58	77	103	128	131	158	177	148
1962	Below Normal	106	71	55	49	46	53	111	124	54	88	95	110
1963	Wet	117	71	54	49	43	41	88	111	109	85	104	104
1964	Dry	117	95	94	60	63	94	111	133	139	118	80	57
1965	Wet	84	54	55	49	43	47	83	109	81	82	93	88
1966	Below Normal	100	66	67	48	44	57	112	142	146	154	128	108
1967	Wet	78	39	22	38	41	39	37	38	58	118	139	139
1968	Below Normal	104	94	63	49	44	55	99	134	133	126	135	74
1969	Wet	67	35	26	27	56	45	48	40	55	89	42	51
1970	Wet	53	48	56	47	43	43	94	128	98	99	85	99
1971	Wet	92	47	45	37	32	43	77	72	104	149	135	135
1972	Below Normal	98	70	65	53	45	60	106	147	111	97	128	123
1973	Above Normal	95	64	70	62	42	50	90	111	72	82	85	84
1974	Wet	46	47	59	69	51	51	62	47	68	116	112	60
1975	Wet	45	51	52	65	52	52	62	44	50	102	149	149
1976	Critical	147	101	91	104	118	124	138	157	144	178	170	200
1977	Critical	214	151	123	126	119	109	123	160	170	179	143	123
1978	Above Normal	137	69	49	67	61	56	91	120	127	145	132	65
1979	Below Normal	48	56	46	47	38	64	104	133	126	128	72	72
1980	Above Normal	66	56	58	65	71	55	78	103	108	152	170	113
1981	Dry	107	73	62	55	67	86	124	149	111	81	110	41
1982	Wet	50	20	17	56	63	45	29	14	30	61	71	54
1983	Wet	39	37	32	26	21	13	19	32	16	44	51	51
1984	Wet	50	60	60	60	44	49	89	103	91	78	85	122
1985	Dry	137	93	70	52	67	90	115	127	120	140	120	96
1986	Wet	49	29	23	65	59	51	78	96	105	148	161	169
1987	Dry	135	116	77	54	68	93	106	136	134	160	162	162
1988	Critical	217	113	97	70	72	121	120	145	159	167	194	239
1989	Dry	116	57	70	36	58	89	118	144	141	164	151	211
1990	Critical	139	105	99	92	114	101	117	151	160	177	206	245
1991	Critical	155	119	85	83	114	108	111	157	175	174	209	209
1992	Critical	116	110	72	59	54	93	141	163	158	187	154	133
1993	Above Normal	118	67	75	77	59	53	96	121	129	156	187	186
1994	Critical	164	90	87	56	101	131	108	146	156	164	169	118
1995	Wet	65	31	16	47	31	36	36	40	68	127	112	112
1996	Wet	57	52	47	68	49	51	70	63	70	47	33	43
1997	Wet	28	43	57	59	45	52	101	137	141	148	127	94
1998	Wet	53	37	33	27	29	33	31	33	40	68	82	31
1999	Wet	57	53	56	53	38	48	81	80	106	145	151	151
2000	Above Normal	51	50	58	58	55	46	94	109	109	155	147	137
2001	Dry	100	102	74	64	62	78	106	135	137	152	105	215
2002	Dry	185	84	88	52	62	86	105	138	115	120	88	209
2003	Above Normal	111	65	58	29	34	45	102					
	Average	106	72	63	60	57	65	92	112	111	130	129	125
	Wet	65	43	40	51	48	44	63	68	77	107	111	100
	Above Normal	88	60	59	54	51	48	94	115	113	134	127	119
	Below Normal	99	67	59	54	45	58	98	126	113	123	126	114
	Dry	133	93	78	58	62	84	112	138	126	141	136	146
	Critical	180	123	99	92	93	105	117	147	157	168	166	165

Table 116: Simulated Chloride Concentration at Contra Costa Canal Pumping Plant #1 (mg/L) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								119	118	131	129	124
1922	Above Normal	79	51	54	53	63	50	86	109	112	128	97	89
1923	Below Normal	109	56	56	60	47	60	91	100	110	144	165	165
1924	Critical	227	144	113	112	92	98	108	139	145	158	189	162
1925	Dry	172	78	58	64	49	70	109	138	120	150	166	156
1926	Dry	130	74	87	66	61	84	112	142	99	85	110	142
1927	Wet	106	55	54	49	39	43	88	111	94	96	107	107
1928	Above Normal	69	52	69	49	46	49	103	125	128	161	168	197
1929	Critical	172	130	104	104	80	89	107	138	150	162	143	134
1930	Dry	117	89	78	62	61	89	120	146	128	152	172	210
1931	Critical	198	150	121	120	92	106	111	137	149	131	105	105
1932	Dry	141	97	88	78	92	73	125	144	113	147	170	174
1933	Critical	160	117	97	96	85	91	105	133	149	156	155	167
1934	Critical	212	143	112	97	72	85	108	141	142	164	177	143
1935	Below Normal	114	64	65	57	43	63	93	129	121	152	145	145
1936	Below Normal	52	45	61	61	43	57	84	111	113	143	164	94
1937	Below Normal	80	43	39	80	55	63	86	122	85	76	108	80
1938	Wet	53	32	30	30	57	44	45	40	50	123	166	167
1939	Dry	135	118	72	55	65	85	104	134	123	154	158	158
1940	Above Normal	54	40	55	55	53	43	90	112	122	130	104	91
1941	Wet	46	28	28	63	66	51	70	65	92	113	90	44
1942	Wet	57	41	37	64	65	46	50	51	63	80	67	37
1943	Wet	45	37	55	69	53	50	90	115	109	142	167	167
1944	Dry	107	66	61	59	59	88	118	144	122	124	124	118
1945	Below Normal	54	59	57	55	51	60	99	112	104	88	84	82
1946	Below Normal	78	62	59	57	45	62	104	128	124	143	134	139
1947	Dry	127	85	76	57	61	87	111	137	126	168	176	176
1948	Below Normal	132	71	69	49	38	61	92	119	125	155	171	200
1949	Dry	129	82	95	75	53	85	107	134	125	149	146	121
1950	Below Normal	103	60	60	53	39	52	99	127	84	79	69	38
1951	Above Normal	62	52	35	41	40	44	99	119	127	137	108	108
1952	Wet	73	23	17	42	57	40	38	39	68	117	85	94
1953	Wet	98	53	43	40	34	46	74	71	91	131	161	102
1954	Above Normal	94	61	75	52	49	41	90	126	133	129	101	113
1955	Dry	129	95	86	63	53	94	108	132	141	163	80	80
1956	Wet	55	50	50	57	65	51	51	43	58	121	164	135
1957	Above Normal	98	75	49	45	41	47	104	98	57	89	95	123
1958	Wet	105	17	12	47	60	43	41	40	62	131	153	101
1959	Below Normal	157	87	66	52	46	50	89	130	133	156	167	167
1960	Dry	113	118	91	52	59	79	129	147	129	174	171	169
1961	Dry	126	112	81	50	58	78	106	131	131	157	178	147
1962	Below Normal	100	62	53	49	47	54	115	126	54	87	95	110
1963	Wet	107	67	55	49	43	40	88	110	104	82	103	103
1964	Dry	123	100	96	61	62	94	112	134	135	114	84	57
1965	Wet	74	48	55	49	43	47	83	110	81	81	92	88
1966	Below Normal	90	63	68	49	44	57	111	141	140	147	127	106
1967	Wet	75	36	22	43	40	39	37	39	56	112	137	137
1968	Below Normal	99	94	64	51	44	55	100	134	131	125	149	80
1969	Wet	70	35	25	30	57	45	49	40	53	86	43	50
1970	Wet	51	49	55	47	43	43	94	127	95	97	85	103
1971	Wet	89	46	47	38	32	43	77	72	102	147	134	134
1972	Below Normal	97	70	66	54	45	60	106	146	110	97	128	122
1973	Above Normal	90	58	64	60	42	50	90	117	73	82	91	83
1974	Wet	44	44	57	67	51	51	61	46	65	112	112	61
1975	Wet	42	48	53	63	52	52	62	44	50	99	147	147
1976	Critical	147	102	91	104	118	123	139	157	142	177	172	201
1977	Critical	214	152	123	126	119	109	123	160	168	178	143	137
1978	Above Normal	145	80	51	60	60	55	90	119	125	145	134	65
1979	Below Normal	46	52	44	47	39	64	102	132	121	121	82	82
1980	Above Normal	69	57	55	55	70	56	76	101	106	152	169	111
1981	Dry	94	68	63	55	67	85	122	148	109	80	110	44
1982	Wet	49	20	19	53	63	45	29	14	33	64	72	58
1983	Wet	39	37	33	27	21	13	19	32	16	46	54	54
1984	Wet	48	58	61	61	44	49	89	97	82	76	85	120
1985	Dry	127	87	71	53	68	90	114	126	118	139	120	102
1986	Wet	51	29	24	63	59	52	79	96	103	147	162	168
1987	Dry	128	117	79	55	68	93	106	136	132	157	161	161
1988	Critical	224	119	100	72	73	122	120	145	155	166	192	224
1989	Dry	117	64	75	39	59	88	119	145	140	160	147	188
1990	Critical	146	116	103	93	113	101	118	151	157	174	209	236
1991	Critical	144	113	88	81	113	115	110	153	170	171	209	209
1992	Critical	117	113	79	63	54	94	142	163	155	185	154	132
1993	Above Normal	110	63	71	67	59	53	96	121	129	160	178	201
1994	Critical	172	99	90	60	102	125	115	155	149	158	170	133
1995	Wet	65	33	18	46	31	35	36	40	66	124	112	112
1996	Wet	55	48	49	69	50	52	70	63	69	54	33	44
1997	Wet	27	42	55	64	46	53	99	134	137	143	127	97
1998	Wet	51	38	37	31	29	33	31	33	40	68	82	30
1999	Wet	55	51	57	54	38	48	81	80	101	138	153	153
2000	Above Normal	47	49	56	59	55	46	93	108	105	150	152	137
2001	Dry	96	82	75	65	62	80	112	140	136	151	105	216
2002	Dry	163	86	90	54	62	86	105	137	112	116	88	209
2003	Above Normal	112	59	53	30	34	45	102					
	Average	102	70	63	60	57	65	92	112	109	129	130	125
	Wet	63	41	40	51	48	44	63	67	75	105	111	100
	Above Normal	86	58	57	52	51	48	93	114	111	133	127	120
	Below Normal	94	63	59	55	45	58	98	125	111	122	128	115
	Dry	126	90	79	59	62	85	113	139	124	141	137	146
	Critical	178	125	102	94	93	105	117	148	153	165	168	165

Table 117: Simulated Chloride Concentration at West Canal at mouth of CCForebay Intake (mg/L) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								181	176	175	144	150
1922	Above Normal	54	54	52	49	43	54	132	170	174	185	71	56
1923	Below Normal	51	57	58	38	47	80	146	158	167	199	220	220
1924	Critical	119	118	95	154	127	141	163	222	247	228	239	163
1925	Dry	95	63	53	43	48	92	164	223	176	214	221	161
1926	Dry	57	47	64	53	83	118	170	226	142	65	75	58
1927	Wet	59	38	49	35	38	53	137	175	148	98	108	108
1928	Above Normal	45	53	56	40	45	66	156	193	198	231	225	250
1929	Critical	130	92	88	88	97	124	162	219	239	226	164	85
1930	Dry	48	46	59	58	81	116	192	233	180	195	220	263
1931	Critical	148	117	112	147	124	161	165	215	235	166	77	77
1932	Dry	68	69	75	58	49	91	202	230	155	185	181	141
1933	Critical	92	71	71	86	93	123	156	208	240	215	179	99
1934	Critical	85	82	77	83	78	117	171	226	223	234	204	75
1935	Below Normal	46	47	58	38	43	69	141	210	184	210	170	170
1936	Below Normal	73	46	55	39	44	67	129	178	172	197	208	163
1937	Below Normal	163	80	51	43	42	62	124	182	117	48	60	163
1938	Wet	125	96	73	70	48	51	68	40	53	152	240	223
1939	Dry	116	91	74	63	99	107	155	216	185	208	215	215
1940	Above Normal	58	46	55	40	40	52	143	182	193	194	98	116
1941	Wet	77	53	45	42	40	56	104	86	134	183	96	74
1942	Wet	46	49	52	42	40	53	79	61	84	69	84	63
1943	Wet	83	87	53	46	44	57	136	196	187	206	229	229
1944	Dry	67	57	60	54	83	123	171	221	187	161	131	132
1945	Below Normal	114	77	60	41	49	80	159	183	171	133	45	63
1946	Below Normal	64	52	61	42	54	84	155	220	204	213	157	146
1947	Dry	80	63	60	57	92	117	165	217	191	238	211	211
1948	Below Normal	67	45	54	34	44	86	139	175	174	201	234	217
1949	Dry	87	54	63	55	70	127	160	206	183	207	172	87
1950	Below Normal	38	41	56	40	48	77	153	199	110	69	127	96
1951	Above Normal	45	46	51	37	41	57	149	184	197	190	118	118
1952	Wet	61	78	44	46	46	43	47	38	88	177	60	47
1953	Wet	44	51	49	37	39	63	120	105	138	168	247	52
1954	Above Normal	36	49	54	38	44	52	137	193	207	185	77	60
1955	Dry	52	62	64	58	72	115	153	198	210	185	206	206
1956	Wet	57	43	55	41	39	54	82	55	84	168	228	133
1957	Above Normal	42	54	55	38	42	64	162	148	62	87	68	108
1958	Wet	134	124	44	43	43	48	55	39	74	182	240	76
1959	Below Normal	58	72	64	60	63	70	131	206	208	215	214	214
1960	Dry	69	61	64	56	95	117	194	229	183	251	218	177
1961	Dry	61	51	53	67	94	120	158	195	188	219	219	160
1962	Below Normal	57	45	55	46	58	72	178	183	50	72	78	60
1963	Wet	42	46	55	34	36	50	132	169	159	64	93	93
1964	Dry	51	70	71	52	96	142	168	204	208	136	62	45
1965	Wet	44	48	57	38	41	55	131	173	124	57	58	48
1966	Below Normal	41	49	58	47	60	83	166	219	220	212	114	48
1967	Wet	50	55	50	48	55	46	45	35	65	154	199	199
1968	Below Normal	37	55	65	54	61	73	149	205	202	161	123	182
1969	Wet	128	98	75	58	47	53	74	41	62	97	109	73
1970	Wet	46	56	54	41	43	57	142	205	155	80	41	38
1971	Wet	35	47	49	35	38	59	117	97	142	211	175	175
1972	Below Normal	58	53	59	62	61	85	160	235	165	84	102	90
1973	Above Normal	54	47	59	41	39	62	138	177	100	50	48	44
1974	Wet	45	54	54	42	38	61	89	51	91	155	121	85
1975	Wet	57	59	55	38	37	62	88	47	53	105	187	187
1976	Critical	128	88	85	143	170	188	234	264	213	272	197	209
1977	Critical	158	128	117	170	171	168	199	261	263	251	162	85
1978	Above Normal	99	87	64	56	43	69	150	189	208	212	168	82
1979	Below Normal	60	50	58	41	47	90	165	222	201	169	96	96
1980	Above Normal	128	73	60	58	49	56	116	167	169	226	244	77
1981	Dry	38	49	61	67	99	128	190	239	158	47	97	69
1982	Wet	89	90	47	45	45	55	60	31	48	92	197	177
1983	Wet	146	127	77	61	59	40	31	32	40	85	92	92
1984	Wet	44	57	61	44	42	60	142	176	148	47	51	102
1985	Dry	72	69	63	56	98	132	175	200	180	197	131	149
1986	Wet	166	73	43	50	49	58	125	162	179	224	214	177
1987	Dry	84	72	66	68	103	118	161	213	196	223	200	200
1988	Critical	90	72	78	78	116	187	179	229	238	229	255	146
1989	Dry	71	41	48	46	96	137	184	222	207	223	180	158
1990	Critical	77	72	67	130	172	146	182	243	245	250	260	247
1991	Critical	147	69	60	120	171	160	173	257	270	231	284	284
1992	Critical	69	53	59	78	88	161	232	257	230	261	178	99
1993	Above Normal	69	41	44	37	37	63	152	191	199	213	246	231
1994	Critical	109	68	58	76	160	200	162	229	231	218	219	53
1995	Wet	120	84	54	49	58	41	34	36	86	176	94	94
1996	Wet	107	54	54	43	39	62	102	77	101	126	133	80
1997	Wet	64	60	57	46	46	66	154	229	227	222	147	267
1998	Wet	153	69	55	69	55	38	32	31	33	33	54	65
1999	Wet	49	54	57	39	39	61	125	114	154	194	232	232
2000	Above Normal	69	43	57	41	41	58	143	176	165	223	186	124
2001	Dry	58	52	70	69	87	109	153	213	206	210	67	74
2002	Dry	70	47	70	52	97	131	163	214	162	134	45	61
2003	Above Normal	44	36	51	35	39	61	153					
	Average	77	64	61	57	67	88	141	173	164	170	154	131
	Wet	80	67	55	45	44	54	94	96	110	136	143	123
	Above Normal	62	52	55	43	42	59	144	179	171	181	141	118
	Below Normal	66	55	58	45	52	77	150	198	168	156	139	138
	Dry	69	59	63	57	86	119	171	217	183	183	159	143
	Critical	113	86	81	113	131	156	181	236	240	232	201	135

Table 118: Simulated Chloride Concentration at West Canal at mouth of CCForebay Intake (mg/L) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								180	174	174	144	150
1922	Above Normal	56	55	52	50	43	54	131	170	171	180	70	56
1923	Below Normal	52	57	57	38	48	80	143	156	168	200	219	219
1924	Critical	124	128	98	155	127	141	162	221	240	214	252	167
1925	Dry	108	72	53	43	48	93	165	223	174	215	221	160
1926	Dry	58	47	64	53	85	119	173	226	141	62	74	57
1927	Wet	61	40	49	35	38	53	136	174	144	91	105	105
1928	Above Normal	46	55	57	40	45	66	156	193	197	233	220	247
1929	Critical	127	89	88	89	97	125	163	218	236	224	166	85
1930	Dry	49	47	60	59	81	116	192	233	181	195	220	263
1931	Critical	148	118	113	146	122	160	165	214	232	164	77	77
1932	Dry	68	69	73	55	50	91	200	228	154	183	178	129
1933	Critical	88	71	74	86	93	122	156	207	235	213	180	85
1934	Critical	82	85	79	84	78	117	172	225	213	228	239	80
1935	Below Normal	48	50	57	38	43	69	143	205	180	208	177	177
1936	Below Normal	74	47	54	39	45	66	126	176	171	196	222	178
1937	Below Normal	145	75	51	42	42	63	126	197	121	45	58	166
1938	Wet	130	96	68	71	48	51	68	40	52	147	239	224
1939	Dry	116	93	74	63	97	106	155	216	185	207	218	218
1940	Above Normal	59	47	52	40	40	52	141	176	192	200	100	114
1941	Wet	77	50	44	45	42	56	103	85	132	178	93	65
1942	Wet	44	52	50	42	40	53	79	61	82	65	81	61
1943	Wet	76	90	53	45	44	57	137	187	170	197	236	236
1944	Dry	68	58	61	54	83	124	176	232	187	152	129	127
1945	Below Normal	105	73	59	41	49	80	159	182	162	123	45	60
1946	Below Normal	63	54	61	42	54	88	159	211	199	212	155	145
1947	Dry	78	60	66	59	93	121	168	216	187	247	234	234
1948	Below Normal	68	44	53	34	44	87	138	181	187	214	221	248
1949	Dry	115	59	65	55	72	128	164	209	182	205	175	87
1950	Below Normal	39	41	56	40	46	74	153	198	108	67	120	89
1951	Above Normal	46	47	51	37	41	58	150	183	196	191	118	118
1952	Wet	61	77	42	47	46	43	47	37	85	172	59	47
1953	Wet	44	52	49	37	39	60	109	95	128	154	239	51
1954	Above Normal	36	49	55	38	44	52	136	193	202	169	74	59
1955	Dry	53	63	65	58	72	120	161	203	212	181	201	201
1956	Wet	58	44	54	44	40	52	72	45	65	149	226	140
1957	Above Normal	43	66	57	38	41	63	161	146	60	81	67	108
1958	Wet	132	117	44	43	43	48	55	39	72	177	239	76
1959	Below Normal	65	83	66	60	64	70	131	204	205	213	217	217
1960	Dry	68	62	66	56	94	116	193	229	183	251	218	177
1961	Dry	61	52	53	66	94	120	163	199	190	218	222	161
1962	Below Normal	57	46	56	48	60	76	184	186	50	70	77	60
1963	Wet	43	47	56	34	36	50	131	168	153	61	90	90
1964	Dry	51	69	72	52	95	141	169	205	202	129	62	44
1965	Wet	42	49	55	38	41	55	132	175	126	56	57	48
1966	Below Normal	40	50	59	47	60	82	165	217	215	199	113	48
1967	Wet	50	55	49	47	55	46	45	35	61	142	195	195
1968	Below Normal	38	57	66	55	61	73	150	204	201	159	120	186
1969	Wet	138	103	75	61	48	53	74	40	59	90	107	71
1970	Wet	47	58	57	42	43	58	142	203	152	77	41	38
1971	Wet	36	47	48	35	38	59	117	96	140	208	173	173
1972	Below Normal	58	54	60	62	61	84	159	234	165	85	102	90
1973	Above Normal	56	49	60	41	39	62	137	190	104	50	46	42
1974	Wet	45	53	53	42	38	61	89	50	86	147	119	88
1975	Wet	56	59	55	39	38	62	87	46	52	100	182	182
1976	Critical	126	85	84	143	171	186	237	263	210	272	203	213
1977	Critical	160	128	117	170	171	168	199	261	261	250	162	81
1978	Above Normal	94	85	66	57	43	68	149	188	207	212	175	83
1979	Below Normal	60	51	57	41	47	88	162	221	194	156	92	92
1980	Above Normal	133	72	60	60	50	55	113	164	168	227	243	75
1981	Dry	38	49	62	66	97	127	187	238	156	47	97	67
1982	Wet	82	84	45	45	46	54	59	31	48	88	196	190
1983	Wet	153	127	78	62	60	40	31	32	40	86	93	93
1984	Wet	45	60	61	44	42	60	142	170	133	45	50	100
1985	Dry	72	71	64	56	98	132	173	198	180	197	131	146
1986	Wet	163	75	43	50	50	60	126	162	178	224	218	179
1987	Dry	83	74	67	67	102	117	161	212	196	219	198	198
1988	Critical	92	75	79	79	117	189	181	229	234	229	252	149
1989	Dry	73	41	49	46	96	135	186	225	207	217	173	154
1990	Critical	76	72	68	128	169	147	183	243	242	246	264	236
1991	Critical	138	67	61	111	171	170	167	251	265	229	286	286
1992	Critical	69	54	61	77	87	162	233	256	227	259	178	100
1993	Above Normal	70	42	47	42	39	63	153	191	201	225	225	262
1994	Critical	117	71	60	77	161	189	175	243	220	209	221	52
1995	Wet	123	88	54	50	58	41	34	36	83	170	94	94
1996	Wet	101	54	53	43	39	62	102	77	99	109	128	82
1997	Wet	63	60	57	47	46	68	154	226	225	215	145	274
1998	Wet	173	71	55	61	55	38	32	31	32	32	54	65
1999	Wet	49	55	57	39	39	62	124	112	149	178	234	234
2000	Above Normal	69	44	57	42	41	58	142	174	159	213	200	129
2001	Dry	59	53	71	69	87	112	167	221	206	210	67	76
2002	Dry	70	49	71	52	96	131	162	213	159	128	45	61
2003	Above Normal	44	36	50	35	39	61	153					
	Average	78	65	61	57	67	88	141	172	161	167	154	132
	Wet	81	68	54	46	44	54	93	94	106	129	142	123
	Above Normal	63	54	55	43	42	59	143	179	169	180	140	120
	Below Normal	65	56	58	45	52	77	150	198	166	153	138	141
	Dry	72	60	64	57	85	119	173	218	182	181	159	142
	Critical	112	87	82	112	130	156	183	236	234	228	207	134

Table 119: Simulated Chloride Concentration at Middle River at Victoria Canal (mg/L) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								117	116	121	109	109
1922	Above Normal	73	50	48	49	39	37	82	109	115	126	83	84
1923	Below Normal	95	56	51	43	32	49	91	100	108	142	162	162
1924	Critical	211	131	106	108	88	94	105	139	154	161	179	147
1925	Dry	205	80	51	52	40	58	104	139	120	152	160	139
1926	Dry	111	65	78	56	53	75	106	142	94	65	101	123
1927	Wet	99	48	47	31	23	30	83	111	95	84	90	90
1928	Above Normal	63	45	60	36	35	38	100	125	129	159	168	194
1929	Critical	176	117	98	95	74	84	105	138	155	158	128	113
1930	Dry	110	77	71	54	51	80	117	147	126	150	166	209
1931	Critical	187	138	116	119	90	104	110	138	154	124	82	82
1932	Dry	146	109	86	77	80	62	125	147	112	141	154	160
1933	Critical	150	110	89	87	81	95	102	133	155	154	142	139
1934	Critical	192	126	104	89	66	81	106	142	149	169	155	130
1935	Below Normal	102	65	56	42	27	49	86	133	123	151	128	128
1936	Below Normal	53	47	58	47	29	43	81	112	113	141	158	77
1937	Below Normal	68	45	33	67	41	50	80	114	77	69	94	62
1938	Wet	48	26	27	25	48	37	41	30	41	117	166	164
1939	Dry	133	112	66	45	60	78	102	136	121	152	153	153
1940	Above Normal	54	42	49	40	34	29	86	115	124	127	87	77
1941	Wet	48	33	31	58	47	39	63	58	93	107	80	47
1942	Wet	56	44	36	53	48	38	48	42	57	62	55	38
1943	Wet	40	39	50	58	40	37	85	123	119	143	165	165
1944	Dry	95	65	54	45	50	78	112	140	123	117	113	98
1945	Below Normal	55	65	52	40	33	50	98	115	111	91	68	82
1946	Below Normal	79	61	53	44	33	50	99	137	131	144	127	129
1947	Dry	119	89	73	45	55	77	108	138	127	165	158	158
1948	Below Normal	123	63	59	32	27	50	87	113	116	145	175	215
1949	Dry	101	74	87	65	45	78	99	129	123	149	132	99
1950	Below Normal	102	47	54	40	29	44	94	127	74	61	50	36
1951	Above Normal	59	53	33	29	26	31	94	118	128	131	93	93
1952	Wet	69	27	13	38	48	33	30	28	62	111	71	85
1953	Wet	81	48	36	26	22	37	73	69	92	132	161	69
1954	Above Normal	78	47	65	38	36	29	85	124	139	129	78	98
1955	Dry	123	93	77	54	45	85	99	126	139	137	63	63
1956	Wet	54	49	50	53	44	40	51	39	60	123	164	110
1957	Above Normal	78	75	42	32	28	36	101	95	46	71	71	101
1958	Wet	95	17	15	44	47	35	34	28	54	129	150	81
1959	Below Normal	154	86	58	42	36	40	81	130	134	155	160	160
1960	Dry	89	97	81	44	55	71	127	148	125	171	163	159
1961	Dry	114	90	71	45	54	71	96	125	128	153	173	135
1962	Below Normal	89	64	48	35	34	41	106	123	41	66	66	82
1963	Wet	111	62	44	33	23	27	82	109	105	64	82	82
1964	Dry	106	91	86	48	58	88	107	133	139	104	68	51
1965	Wet	78	53	49	38	29	35	81	108	78	66	77	74
1966	Below Normal	84	59	61	36	34	47	108	142	146	151	104	78
1967	Wet	64	36	23	35	39	32	29	27	48	108	131	131
1968	Below Normal	88	85	58	39	35	43	93	133	132	116	118	62
1969	Wet	66	32	23	23	47	38	44	31	46	78	38	51
1970	Wet	50	45	51	39	28	32	89	130	92	77	59	69
1971	Wet	59	40	37	24	21	32	70	64	99	143	123	123
1972	Below Normal	68	63	58	42	36	49	101	148	105	79	100	101
1973	Above Normal	82	58	63	50	26	37	87	113	65	62	70	65
1974	Wet	44	43	52	56	32	38	55	38	63	105	98	62
1975	Wet	44	45	45	49	32	40	54	35	40	86	142	142
1976	Critical	136	95	86	100	114	123	141	161	143	179	166	193
1977	Critical	194	143	120	125	118	108	121	161	172	177	129	109
1978	Above Normal	129	71	48	62	41	45	92	120	132	142	123	66
1979	Below Normal	48	53	44	37	28	55	102	138	129	118	70	70
1980	Above Normal	65	55	55	61	57	45	74	104	109	153	170	84
1981	Dry	89	67	56	46	60	79	121	152	107	57	85	39
1982	Wet	45	18	14	50	52	40	31	15	28	60	54	47
1983	Wet	30	33	30	22	18	15	16	23	16	39	50	50
1984	Wet	45	55	54	49	27	35	88	109	89	57	63	108
1985	Dry	129	87	64	41	59	84	114	126	118	134	104	85
1986	Wet	43	29	22	59	46	39	77	100	111	149	159	162
1987	Dry	127	103	71	47	62	87	103	136	132	156	154	154
1988	Critical	189	106	92	66	71	119	117	145	161	167	192	216
1989	Dry	88	46	61	32	55	84	114	142	137	162	137	190
1990	Critical	131	90	92	90	114	98	115	152	161	177	203	232
1991	Critical	134	103	78	83	114	106	108	158	176	173	208	208
1992	Critical	103	87	67	59	54	91	141	164	157	185	142	110
1993	Above Normal	91	52	63	58	36	40	93	122	128	150	181	174
1994	Critical	153	84	79	53	100	129	103	142	154	158	160	89
1995	Wet	57	33	14	44	29	27	22	28	61	116	86	86
1996	Wet	52	50	45	56	36	40	63	56	67	44	25	41
1997	Wet	28	40	50	47	34	39	98	140	144	142	113	60
1998	Wet	50	38	33	24	27	26	21	25	28	45	66	30
1999	Wet	52	47	50	42	25	36	76	75	104	140	143	143
2000	Above Normal	50	44	52	44	38	34	91	110	109	152	137	112
2001	Dry	80	88	70	58	54	71	104	133	135	143	80	208
2002	Dry	163	77	80	45	57	80	100	136	108	105	60	190
2003	Above Normal	84	45	46	21	24	33	98					
	Average	94	65	58	51	47	56	88	110	108	123	118	112
	Wet	58	40	36	41	35	35	58	63	73	97	100	89
	Above Normal	75	53	52	43	35	36	90	114	112	127	114	105
	Below Normal	86	61	53	42	33	47	93	126	110	116	113	103
	Dry	118	84	71	50	55	77	109	138	123	134	124	134
	Critical	163	111	94	90	90	103	114	148	158	165	157	147

Table 120: Simulated Chloride Concentration at Middle River at Victoria Canal (mg/L) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								116	115	120	109	109
1922	Above Normal	71	48	48	49	39	37	82	108	112	123	84	83
1923	Below Normal	99	54	50	44	32	49	89	100	108	141	162	162
1924	Critical	217	138	109	109	89	94	104	139	148	153	186	149
1925	Dry	171	78	52	52	40	58	105	139	118	149	159	138
1926	Dry	121	68	80	58	54	76	109	143	93	63	97	122
1927	Wet	95	49	47	32	23	30	83	110	92	80	88	88
1928	Above Normal	61	47	61	37	35	38	100	125	128	159	165	192
1929	Critical	165	116	100	98	74	84	105	138	153	157	129	117
1930	Dry	109	82	72	57	51	81	117	147	126	150	166	209
1931	Critical	190	141	117	118	88	103	109	138	152	122	82	82
1932	Dry	131	95	80	70	83	63	124	146	111	144	153	155
1933	Critical	143	103	92	90	80	87	102	132	152	151	148	135
1934	Critical	189	130	107	92	67	81	106	141	144	163	174	132
1935	Below Normal	102	61	56	42	27	49	88	131	120	148	131	131
1936	Below Normal	52	43	55	47	29	43	79	111	111	140	162	90
1937	Below Normal	68	44	37	68	40	50	81	123	80	63	94	67
1938	Wet	48	30	28	26	48	37	41	30	41	115	165	163
1939	Dry	127	111	66	46	59	78	102	135	121	150	154	154
1940	Above Normal	53	38	50	41	34	29	86	112	123	130	88	85
1941	Wet	48	29	27	54	47	39	63	57	91	104	81	45
1942	Wet	53	40	35	53	48	38	48	42	55	60	63	39
1943	Wet	42	38	50	59	40	37	86	117	110	140	168	168
1944	Dry	93	62	55	45	50	81	115	146	122	112	112	113
1945	Below Normal	54	59	52	41	34	50	98	115	105	86	68	80
1946	Below Normal	75	59	54	45	33	53	102	131	127	142	126	127
1947	Dry	117	79	72	46	56	80	110	139	125	168	172	172
1948	Below Normal	122	62	59	32	26	51	86	117	123	151	167	197
1949	Dry	110	76	90	67	46	79	102	131	123	148	133	94
1950	Below Normal	91	50	55	41	30	42	94	126	73	72	55	36
1951	Above Normal	57	49	33	29	26	31	94	118	128	130	92	92
1952	Wet	68	26	16	39	48	32	30	28	60	108	71	83
1953	Wet	79	48	37	27	22	35	66	63	85	123	156	69
1954	Above Normal	71	49	66	38	36	28	85	124	134	119	77	91
1955	Dry	120	90	78	55	46	88	104	129	140	148	65	65
1956	Wet	52	47	46	50	44	40	46	33	50	112	162	114
1957	Above Normal	65	68	43	33	27	35	100	94	45	68	71	101
1958	Wet	94	14	12	44	47	35	34	28	53	126	149	81
1959	Below Normal	147	84	60	43	37	39	81	129	132	154	161	161
1960	Dry	92	102	83	45	55	71	126	148	125	171	163	155
1961	Dry	116	93	72	45	54	72	99	128	128	152	174	134
1962	Below Normal	87	57	45	35	35	44	111	124	41	64	66	84
1963	Wet	100	62	45	33	23	27	82	108	101	61	81	81
1964	Dry	113	96	88	49	57	88	108	133	135	99	71	51
1965	Wet	70	47	47	38	29	35	81	109	79	66	76	74
1966	Below Normal	68	58	62	38	34	47	107	141	140	143	103	78
1967	Wet	62	35	23	39	39	32	29	27	45	102	128	128
1968	Below Normal	86	86	59	40	35	43	94	133	131	114	127	67
1969	Wet	69	32	23	26	48	38	44	31	44	74	39	50
1970	Wet	49	46	50	39	27	33	89	128	90	75	59	83
1971	Wet	62	41	39	24	20	32	70	64	99	141	122	122
1972	Below Normal	65	64	60	43	36	48	100	148	105	80	100	101
1973	Above Normal	79	53	57	48	26	37	87	121	67	62	72	65
1974	Wet	42	41	51	55	31	39	55	37	60	101	97	64
1975	Wet	41	44	45	49	32	40	54	35	39	83	139	139
1976	Critical	137	96	86	100	114	121	142	161	141	179	169	195
1977	Critical	194	144	121	125	118	108	121	160	170	175	130	118
1978	Above Normal	136	80	50	56	39	45	92	119	131	141	126	66
1979	Below Normal	46	50	43	37	28	54	100	137	124	110	77	77
1980	Above Normal	68	56	52	52	57	47	72	103	108	153	169	83
1981	Dry	70	63	58	46	59	78	119	152	106	56	85	43
1982	Wet	47	18	17	48	51	40	31	15	30	62	55	50
1983	Wet	30	33	31	23	18	15	16	23	17	41	53	53
1984	Wet	45	53	55	49	27	36	88	103	80	56	62	107
1985	Dry	119	83	65	42	59	83	112	125	118	133	104	91
1986	Wet	44	30	23	57	45	40	77	100	110	148	160	162
1987	Dry	120	107	73	47	61	87	104	137	131	153	152	152
1988	Critical	200	112	95	68	72	120	118	145	157	166	190	206
1989	Dry	93	54	65	34	56	82	116	143	137	158	132	176
1990	Critical	138	100	96	91	112	98	116	152	159	174	204	226
1991	Critical	130	101	81	79	112	112	106	155	172	170	208	208
1992	Critical	104	91	73	62	54	91	142	164	154	183	142	109
1993	Above Normal	90	54	61	56	37	40	94	122	130	156	169	193
1994	Critical	166	93	83	56	101	122	111	152	145	151	161	92
1995	Wet	55	33	17	43	29	26	22	28	60	113	86	86
1996	Wet	51	47	47	57	36	40	63	56	66	51	26	42
1997	Wet	28	39	49	55	36	40	98	137	141	137	112	65
1998	Wet	48	39	37	28	27	26	22	25	28	45	66	30
1999	Wet	51	47	51	42	25	36	76	75	99	131	147	147
2000	Above Normal	48	44	51	44	38	34	91	109	104	146	144	114
2001	Dry	79	78	72	60	55	72	110	138	135	143	82	209
2002	Dry	151	81	82	46	57	80	99	135	106	101	60	191
2003	Above Normal	88	46	41	21	24	33	98					
	Average	92	65	58	51	47	56	88	110	106	121	119	113
	Wet	57	39	36	42	35	35	57	62	70	94	100	90
	Above Normal	74	53	51	42	35	36	90	114	110	126	114	106
	Below Normal	83	59	53	42	33	47	94	126	109	115	114	104
	Dry	114	83	72	51	55	78	110	139	122	133	124	135
	Critical	164	114	97	91	90	102	115	148	154	162	160	147

Table 121: Monthly Averages of Simulated Stage at Old River Near Tracy Bridge (ft msl) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (17%)
Apr	0	0	0 (13%)
May	1	1	0 (0%)
Jun	2	2	0 (1%)
Jul	2	2	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (1%)
Oct	1	1	0 (1%)
Nov	1	1	0 (3%)
Dec	0	0	0 (5%)
Jan	0	0	0 (23%)
Feb	0	0	0 (-18%)

Source: DSM2 Modeling (Node 071_3116)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 122: Monthly Averages of Simulated Stage at Old River Near Tracy Bridge (ft msl) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	1	1	0 (1%)
Apr	1	1	0 (3%)
May	2	2	0 (-2%)
Jun	3	3	0 (0%)
Jul	2	2	0 (0%)
Aug	2	2	0 (0%)
Sep	2	2	0 (1%)
Oct	1	1	0 (1%)
Nov	1	1	0 (2%)
Dec	0	0	0 (20%)
Jan	0	0	0 (-8%)
Feb	0	0	0 (-11%)

Source: DSM2 Modeling (Node 071_3116)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 123: Monthly Averages of Simulated Stage at Old River Near Tracy Bridge (ft msl) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (97%)
Apr	0	0	0 (38%)
May	1	1	0 (3%)
Jun	2	2	0 (5%)
Jul	2	2	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (1%)
Oct	1	1	0 (1%)
Nov	1	1	0 (3%)
Dec	-1	-1	0 (0%)
Jan	0	0	0 (3%)
Feb	0	0	0 (17%)

Source: DSM2 Modeling (Node 071_3116)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 124: Monthly Averages of Simulated Stage at Old River Near Tracy Bridge (ft msl) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (-19%)
Apr	0	0	0 (-112%)
May	1	1	0 (-1%)
Jun	1	1	0 (1%)
Jul	1	1	0 (1%)
Aug	1	1	0 (0%)
Sep	1	1	0 (1%)
Oct	1	1	0 (1%)
Nov	1	1	0 (3%)
Dec	0	0	0 (11%)
Jan	0	0	0 (95%)
Feb	1	1	0 (-15%)

Source: DSM2 Modeling (Node 071_3116)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 125: Monthly Averages of Simulated Stage at Old River Near Tracy Bridge (ft msl) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (-11%)
Apr	0	0	0 (-19%)
May	1	1	0 (1%)
Jun	1	1	0 (2%)
Jul	1	1	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (0%)
Oct	1	1	0 (1%)
Nov	1	1	0 (3%)
Dec	-1	-1	0 (2%)
Jan	0	0	0 (1%)
Feb	0	0	0 (-25%)

Source: DSM2 Modeling (Node 071_3116)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 126: Monthly Averages of Simulated Stage at Old River Near Tracy Bridge (ft msl) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	-1	-1	0 (-5%)
Apr	0	0	0 (-7%)
May	0	0	0 (2%)
Jun	1	1	0 (2%)
Jul	1	1	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (1%)
Oct	1	1	0 (1%)
Nov	1	1	0 (2%)
Dec	-1	-1	0 (1%)
Jan	0	0	0 (-2%)
Feb	0	0	0 (5%)

Source: DSM2 Modeling (Node 071_3116)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 127: Monthly Averages of Simulated Stage at Middle River Near Howard Road Bridge (ft msl) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (41%)
Apr	0	0	0 (9%)
May	1	1	0 (-1%)
Jun	1	1	0 (1%)
Jul	1	1	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (0%)
Oct	1	1	0 (0%)
Nov	1	1	0 (1%)
Dec	0	-1	0 (4%)
Jan	0	0	0 (18%)
Feb	0	0	0 (-27%)

Source: DSM2 Modeling (Node 129_5691)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 128: Monthly Averages of Simulated Stage at Middle River Near Howard Road Bridge (ft msl) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	1	1	0 (2%)
Apr	1	1	0 (4%)
May	1	1	0 (-2%)
Jun	2	2	0 (-1%)
Jul	2	2	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (0%)
Oct	1	1	0 (0%)
Nov	1	1	0 (1%)
Dec	0	0	0 (12%)
Jan	0	0	0 (-10%)
Feb	0	0	0 (-12%)

Source: DSM2 Modeling (Node 129_5691)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 129: Monthly Averages of Simulated Stage at Middle River Near Howard Road Bridge (ft msl) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (-139%)
Apr	0	0	0 (15%)
May	1	1	0 (3%)
Jun	1	1	0 (5%)
Jul	1	1	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (0%)
Oct	1	1	0 (0%)
Nov	1	1	0 (1%)
Dec	-1	-1	0 (0%)
Jan	0	0	0 (2%)
Feb	0	0	0 (15%)

Source: DSM2 Modeling (Node 129_5691)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 130: Monthly Averages of Simulated Stage at Middle River Near Howard Road Bridge (ft msl) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (-11%)
Apr	0	0	0 (84%)
May	1	1	0 (-1%)
Jun	1	1	0 (1%)
Jul	1	1	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (0%)
Oct	1	1	0 (0%)
Nov	1	1	0 (1%)
Dec	0	0	0 (10%)
Jan	0	0	0 (48%)
Feb	1	1	0 (-17%)

Source: DSM2 Modeling (Node 129_5691)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 131: Monthly Averages of Simulated Stage at Middle River Near Howard Road Bridge (ft msl) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	-1	-1	0 (-6%)
Apr	0	0	0 (-36%)
May	0	0	0 (1%)
Jun	1	1	0 (1%)
Jul	1	1	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (0%)
Oct	1	1	0 (0%)
Nov	1	1	0 (1%)
Dec	-1	-1	0 (1%)
Jan	0	0	0 (2%)
Feb	0	0	0 (-38%)

Source: DSM2 Modeling (Node 129_5691)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 132: Monthly Averages of Simulated Stage at Middle River Near Howard Road Bridge (ft msl) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	-1	-1	0 (-3%)
Apr	0	0	0 (-9%)
May	0	0	0 (1%)
Jun	1	1	0 (2%)
Jul	1	1	0 (0%)
Aug	1	1	0 (1%)
Sep	1	1	0 (0%)
Oct	1	1	0 (0%)
Nov	1	1	0 (1%)
Dec	-1	-1	0 (1%)
Jan	0	0	0 (-1%)
Feb	0	0	0 (4%)

Source: DSM2 Modeling (Node 129_5691)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 133: Monthly Averages of Simulated Stage at Grant Line Canal above Grant Line Canal Barrier (ft msl) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (14%)
Apr	0	0	0 (-327%)
May	1	1	0 (0%)
Jun	2	2	0 (1%)
Jul	2	2	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (1%)
Oct	1	1	0 (1%)
Nov	1	1	0 (3%)
Dec	0	0	0 (7%)
Jan	0	0	0 (-43%)
Feb	0	0	0 (-11%)

Source: DSM2 Modeling (Node 206_5533)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 134: Monthly Averages of Simulated Stage at Grant Line Canal above Grant Line Canal Barrier (ft msl) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	2	2	0 (2%)
Apr	1	1	0 (6%)
May	2	2	0 (-2%)
Jun	3	3	0 (0%)
Jul	3	3	0 (0%)
Aug	2	2	0 (0%)
Sep	2	2	0 (1%)
Oct	1	1	0 (1%)
Nov	1	1	0 (2%)
Dec	0	0	0 (225%)
Jan	1	0	0 (-6%)
Feb	1	0	0 (-7%)

Source: DSM2 Modeling (Node 206_5533)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 135: Monthly Averages of Simulated Stage at Grant Line Canal above Grant Line Canal Barrier (ft msl) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (27%)
Apr	0	0	0 (-27%)
May	1	1	0 (5%)
Jun	2	2	0 (5%)
Jul	2	2	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (1%)
Oct	1	1	0 (1%)
Nov	1	1	0 (3%)
Dec	0	0	0 (0%)
Jan	0	0	0 (5%)
Feb	0	0	0 (-4%)

Source: DSM2 Modeling (Node 206_5533)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 136: Monthly Averages of Simulated Stage at Grant Line Canal above Grant Line Canal Barrier (ft msl) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (-75%)
Apr	0	0	0 (-24%)
May	1	1	0 (-1%)
Jun	1	1	0 (1%)
Jul	1	1	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (1%)
Oct	1	1	0 (1%)
Nov	1	1	0 (3%)
Dec	0	0	0 (19%)
Jan	0	0	0 (-66%)
Feb	1	1	0 (-12%)

Source: DSM2 Modeling (Node 206_5533)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 137: Monthly Averages of Simulated Stage at Grant Line Canal above Grant Line Canal Barrier (ft msl) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (-17%)
Apr	0	0	0 (-10%)
May	0	0	0 (4%)
Jun	1	1	0 (2%)
Jul	1	1	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (0%)
Oct	1	1	0 (1%)
Nov	1	1	0 (3%)
Dec	0	0	0 (2%)
Jan	0	0	0 (2%)
Feb	0	0	0 (-14%)

Source: DSM2 Modeling (Node 206_5533)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 138: Monthly Averages of Simulated Stage at Grant Line Canal above Grant Line Canal Barrier (ft msl) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (-8%)
Apr	-1	0	0 (-3%)
May	0	0	0 (9%)
Jun	1	1	0 (2%)
Jul	1	1	0 (0%)
Aug	1	1	0 (0%)
Sep	1	1	0 (1%)
Oct	1	1	0 (1%)
Nov	1	1	0 (2%)
Dec	-1	-1	0 (1%)
Jan	0	0	0 (-2%)
Feb	0	0	0 (9%)

Source: DSM2 Modeling (Node 206_5533)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 139: Monthly Averages of Simulated Stage at East of Coney Island (ft msl) - Sacramento Valley All Years

Month	Average of All Years		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	-1	-1	0 (1%)
Apr	-1	-1	0 (0%)
May	-1	-1	0 (0%)
Jun	-1	-1	0 (0%)
Jul	-1	-1	0 (0%)
Aug	-1	-1	0 (0%)
Sep	-1	-1	0 (0%)
Oct	-1	-1	0 (0%)
Nov	-1	-1	0 (0%)
Dec	-1	-1	0 (1%)
Jan	-1	-1	0 (1%)
Feb	0	0	0 (5%)

Source: DSM2 Modeling (Node 218_4301)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 140: Monthly Averages of Simulated Stage at East of Coney Island (ft msl) - Sacramento Valley Wet

Month	Sacramento Valley Index Year Type - Wet		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	0	0	0 (-36%)
Apr	0	0	0 (1%)
May	-1	-1	0 (2%)
Jun	-1	-1	0 (1%)
Jul	-1	-1	0 (0%)
Aug	-1	-1	0 (0%)
Sep	-1	-1	0 (0%)
Oct	-1	-1	0 (0%)
Nov	-1	-1	0 (0%)
Dec	-1	-1	0 (1%)
Jan	0	0	0 (2%)
Feb	0	0	0 (6%)

Source: DSM2 Modeling (Node 218_4301)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 141: Monthly Averages of Simulated Stage at East of Coney Island (ft msl) - Sacramento Valley Above Normal

Month	Sacramento Valley Index Year Type - Above Normal		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	-1	-1	0 (-2%)
Apr	-1	-1	0 (0%)
May	-1	-1	0 (-1%)
Jun	-1	-1	0 (-2%)
Jul	-1	-1	0 (0%)
Aug	-1	-1	0 (0%)
Sep	-1	-1	0 (0%)
Oct	-1	-1	0 (0%)
Nov	-1	-1	0 (0%)
Dec	-1	-1	0 (0%)
Jan	-1	-1	0 (0%)
Feb	-1	-1	0 (1%)

Source: DSM2 Modeling (Node 218_4301)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 142: Monthly Averages of Simulated Stage at East of Coney Island (ft msl) - Sacramento Valley Below Normal

Month	Sacramento Valley Index Year Type - Below Normal		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	-1	-1	0 (0%)
Apr	-1	-1	0 (-1%)
May	-1	-1	0 (0%)
Jun	-1	-1	0 (0%)
Jul	-1	-1	0 (0%)
Aug	-1	-1	0 (0%)
Sep	-1	-1	0 (0%)
Oct	-1	-1	0 (0%)
Nov	-1	-1	0 (0%)
Dec	-1	-1	0 (2%)
Jan	-1	-1	0 (3%)
Feb	0	0	0 (24%)

Source: DSM2 Modeling (Node 218_4301)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 143: Monthly Averages of Simulated Stage at East of Coney Island (ft msl) - Sacramento Valley Dry

Month	Sacramento Valley Index Year Type - Dry		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	-1	-1	0 (-1%)
Apr	-1	-1	0 (0%)
May	-1	-1	0 (0%)
Jun	-1	-1	0 (0%)
Jul	-1	-1	0 (0%)
Aug	-1	-1	0 (0%)
Sep	-1	-1	0 (0%)
Oct	-1	-1	0 (0%)
Nov	-1	-1	0 (0%)
Dec	-1	-1	0 (0%)
Jan	-1	-1	0 (0%)
Feb	0	0	0 (3%)

Source: DSM2 Modeling (Node 218_4301)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 144: Monthly Averages of Simulated Stage at East of Coney Island (ft msl) - Sacramento Valley Critical

Month	Sacramento Valley Index Year Type - Critical		
	No-Action Alternative (ft msl)	Proposed Action (ft msl)	Change from No-Action (ft msl)
Mar	-1	-1	0 (0%)
Apr	-1	-1	0 (0%)
May	-1	-1	0 (0%)
Jun	-1	-1	0 (0%)
Jul	-1	-1	0 (0%)
Aug	-1	-1	0 (1%)
Sep	-1	-1	0 (0%)
Oct	-1	-1	0 (0%)
Nov	-1	-1	0 (0%)
Dec	-1	-1	0 (1%)
Jan	-1	-1	0 (-1%)
Feb	-1	-1	0 (0%)

Source: DSM2 Modeling (Node 218_4301)
Notes:
Simulation Period: WY 1922 -2003
(%) indicates percent change from No-Action Alternative
Year type as defined by the Sacramento Valley Index Year Type
Key: ft msl= Feet Mean Sea Level
WY = Water Year

Table 145: Simulated Stage Old River Near Tracy Road Bridge (ft msl) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1	1	-1	-1	0
1922	Above Normal	0	0	1	4	2	2	1	1	1	0	0	0
1923	Below Normal	-1	0	1	2	1	2	2	1	1	-1	-1	-1
1924	Critical	0	0	0	1	1	1	1	1	1	-1	-1	0
1925	Dry	0	0	1	2	1	1	1	1	1	0	-1	0
1926	Dry	0	0	1	1	1	1	1	1	1	-1	0	0
1927	Wet	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1928	Above Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1929	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	0
1930	Dry	0	0	1	1	1	1	1	1	1	0	-1	0
1931	Critical	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1932	Dry	0	0	1	1	2	1	1	1	1	-1	-1	-1
1933	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	0
1934	Critical	0	0	1	1	1	1	1	1	1	-1	-1	0
1935	Below Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1936	Below Normal	0	0	1	2	1	2	1	1	1	-1	-1	2
1937	Below Normal	1	0	2	2	2	2	1	1	1	0	0	4
1938	Wet	5	2	4	5	3	2	2	2	1	-1	-1	-1
1939	Dry	-1	0	0	1	1	1	2	1	1	-1	0	0
1940	Above Normal	0	0	1	2	1	1	1	1	1	0	1	2
1941	Wet	2	1	2	3	3	2	2	1	1	0	1	1
1942	Wet	0	1	1	3	3	2	2	1	1	-1	1	1
1943	Wet	3	0	1	2	2	2	1	1	1	-1	-1	-1
1944	Dry	0	0	1	1	1	1	1	1	1	-1	-1	1
1945	Below Normal	0	0	1	2	2	2	1	1	1	0	0	0
1946	Below Normal	0	0	1	2	1	1	1	1	1	-1	-1	-1
1947	Dry	0	0	0	1	1	1	1	1	1	-1	-1	-1
1948	Below Normal	-1	0	1	1	1	1	1	1	1	-1	-1	0
1949	Dry	0	0	1	1	1	1	1	1	1	-1	-1	-1
1950	Below Normal	-1	0	1	1	1	1	1	1	1	2	1	1
1951	Above Normal	0	0	1	1	1	1	1	1	1	0	0	0
1952	Wet	1	1	3	4	3	2	2	1	1	0	0	0
1953	Wet	-1	0	1	1	1	1	1	1	1	-1	-1	0
1954	Above Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1955	Dry	-1	0	1	1	1	1	1	1	1	0	3	3
1956	Wet	0	0	1	3	2	2	2	1	1	-1	-1	-1
1957	Above Normal	-1	0	1	1	1	1	1	1	1	0	0	1
1958	Wet	1	2	2	4	3	2	2	1	1	0	0	0
1959	Below Normal	0	0	0	1	1	1	2	1	1	0	-1	-1
1960	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1961	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	0
1962	Below Normal	0	0	0	1	1	1	1	1	1	-1	-1	0
1963	Wet	0	0	1	1	1	1	1	1	1	-1	-1	-1
1964	Dry	-1	0	0	1	1	1	1	1	1	0	1	0
1965	Wet	0	0	1	2	1	2	2	1	2	0	0	0
1966	Below Normal	-1	0	1	1	1	1	1	1	1	-1	0	0
1967	Wet	0	2	2	4	4	2	2	1	1	-1	-1	-1
1968	Below Normal	0	0	1	1	1	1	1	1	1	-1	1	4
1969	Wet	3	3	5	7	3	2	2	2	1	0	2	1
1970	Wet	0	0	1	1	1	1	1	1	1	0	-1	-1
1971	Wet	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1972	Below Normal	-1	0	0	1	1	1	1	1	1	0	0	1
1973	Above Normal	0	0	1	2	1	2	1	1	1	0	0	0
1974	Wet	1	0	1	2	2	2	2	1	1	-1	-1	0
1975	Wet	0	0	1	3	2	2	1	1	1	-1	-1	-1
1976	Critical	-1	0	0	1	1	1	1	1	1	0	0	-1
1977	Critical	-1	0	0	1	1	1	1	1	1	-1	0	1
1978	Above Normal	1	1	2	3	2	2	2	1	1	-1	0	0
1979	Below Normal	0	0	1	2	1	1	1	1	1	-1	1	1
1980	Above Normal	2	0	1	3	3	2	2	1	1	-1	-1	-1
1981	Dry	0	0	1	1	1	1	1	1	1	0	0	2
1982	Wet	2	5	4	4	3	2	3	2	3	3	4	6
1983	Wet	8	4	5	7	6	3	3	2	4	4	2	2
1984	Wet	0	0	1	2	1	2	2	1	1	-1	-1	-1
1985	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	2
1986	Wet	4	1	2	3	2	2	2	2	1	0	-1	0
1987	Dry	0	0	1	1	1	1	1	1	1	-1	-1	-1
1988	Critical	0	0	0	1	1	1	1	1	1	-1	-1	-1
1989	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1990	Critical	-1	0	1	1	1	1	1	1	1	-1	-1	0
1991	Critical	-1	0	0	1	1	1	1	1	1	0	0	0
1992	Critical	0	0	1	1	1	1	1	1	1	0	0	0
1993	Above Normal	0	0	1	2	2	2	1	1	1	-1	-1	-1
1994	Critical	-1	0	0	1	1	1	1	1	1	-1	1	0
1995	Wet	3	1	5	4	5	2	2	1	1	-1	-1	-1
1996	Wet	1	0	1	2	1	2	1	1	1	3	9	3
1997	Wet	0	0	1	2	1	1	2	1	1	0	0	4
1998	Wet	2	1	3	5	5	3	2	2	1	-1	0	1
1999	Wet	0	0	1	2	1	1	1	1	1	-1	-1	-1
2000	Above Normal	0	0	1	2	1	1	1	1	1	-1	-1	-1
2001	Dry	0	0	0	1	1	1	1	1	1	-1	-1	0
2002	Dry	0	0	1	1	1	1	1	1	1	0	-1	0
2003	Above Normal	-1	0	0	1	1	1	1					
	Average	0	0	1	2	2	1	1	1	1	0	0	0
	Wet	1	1	2	3	2	2	2	1	1	0	0	0
	Above Normal	0	0	1	2	2	1	1	1	1	-1	0	0
	Below Normal	0	0	1	1	1	1	1	1	1	0	0	1
	Dry	0	0	1	1	1	1	1	1	1	-1	0	0
	Critical	-1	0	0	1	1	1	1	1	1	-1	0	0
	Dry and Critical	-1	0	0	1	1	1	1	1	1	-1	0	0

Table 146: Simulated Stage Old River Near Tracy Road Bridge (ft msl) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1	1	-1	-1	0
1922	Above Normal	0	0	1	4	2	2	1	1	1	0	0	0
1923	Below Normal	-1	0	1	2	1	2	2	1	1	-1	-1	-1
1924	Critical	0	0	0	1	1	1	1	1	1	-1	-1	0
1925	Dry	0	0	1	2	1	1	1	1	1	0	-1	0
1926	Dry	0	0	1	1	1	1	1	1	1	-1	0	0
1927	Wet	0	0	1	1	1	1	1	1	1	-1	-1	-1
1928	Above Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1929	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	0
1930	Dry	0	0	1	1	1	1	1	1	1	0	-1	0
1931	Critical	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1932	Dry	0	0	1	1	2	1	1	1	1	-1	-1	-1
1933	Critical	0	0	0	1	1	1	1	1	1	-1	-1	0
1934	Critical	0	0	1	1	1	1	1	1	1	-1	-1	0
1935	Below Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1936	Below Normal	0	0	1	2	1	2	1	1	1	-1	-1	1
1937	Below Normal	1	0	1	2	2	2	1	1	1	0	0	3
1938	Wet	5	2	4	5	3	2	2	2	1	-1	-1	-1
1939	Dry	-1	0	0	1	1	1	2	1	1	-1	0	0
1940	Above Normal	1	0	1	2	1	1	1	1	1	0	1	2
1941	Wet	2	1	2	3	3	2	2	1	1	0	1	1
1942	Wet	0	1	1	3	3	2	2	1	1	-1	1	1
1943	Wet	2	0	1	2	2	2	1	1	1	-1	-1	-1
1944	Dry	0	0	1	1	1	1	1	1	1	-1	-1	0
1945	Below Normal	0	0	1	2	2	2	1	1	1	0	0	0
1946	Below Normal	0	0	1	2	1	1	1	1	1	-1	-1	-1
1947	Dry	0	0	0	1	1	1	1	1	1	-1	-1	-1
1948	Below Normal	-1	0	1	1	1	1	1	1	1	-1	-1	0
1949	Dry	0	0	1	1	1	1	1	1	1	-1	-1	-1
1950	Below Normal	-1	0	1	1	1	1	1	1	1	1	1	1
1951	Above Normal	0	0	1	1	1	1	1	1	1	0	0	0
1952	Wet	1	1	3	4	3	2	2	1	1	0	0	0
1953	Wet	-1	0	1	1	1	1	1	1	1	-1	-1	0
1954	Above Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1955	Dry	-1	0	1	1	1	1	1	1	1	0	3	3
1956	Wet	0	0	1	3	2	2	2	1	1	-1	-1	-1
1957	Above Normal	-1	0	1	1	1	1	1	1	1	0	0	1
1958	Wet	1	3	3	4	3	2	2	1	1	0	0	0
1959	Below Normal	0	0	0	1	1	1	2	1	1	0	-1	-1
1960	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1961	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	0
1962	Below Normal	0	0	0	1	1	1	1	1	1	-1	-1	0
1963	Wet	0	0	1	1	1	1	1	1	1	-1	-1	-1
1964	Dry	-1	0	0	1	1	1	1	1	1	0	1	0
1965	Wet	0	0	1	2	1	2	2	1	2	0	0	0
1966	Below Normal	-1	0	1	1	1	1	1	1	1	-1	0	0
1967	Wet	0	2	2	4	4	2	2	1	1	-1	-1	-1
1968	Below Normal	0	0	1	1	1	1	1	1	1	-1	1	4
1969	Wet	3	3	5	6	3	2	2	2	1	0	2	1
1970	Wet	0	0	1	1	1	1	1	1	1	0	-1	-1
1971	Wet	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1972	Below Normal	-1	0	0	1	1	1	1	1	1	0	0	1
1973	Above Normal	0	0	1	2	1	2	1	1	1	0	0	0
1974	Wet	1	0	1	2	2	2	2	2	1	-1	-1	0
1975	Wet	0	0	1	3	2	2	1	1	1	-1	-1	-1
1976	Critical	-1	0	0	1	1	1	1	1	1	0	0	-1
1977	Critical	-1	0	0	1	1	1	1	1	1	-1	0	1
1978	Above Normal	1	1	2	3	2	2	2	1	1	-1	0	0
1979	Below Normal	0	0	1	2	1	2	1	1	1	-1	1	1
1980	Above Normal	2	0	1	3	3	2	2	1	1	-1	-1	-1
1981	Dry	0	0	1	1	1	1	1	1	1	0	0	2
1982	Wet	2	5	3	4	3	2	3	2	3	3	4	5
1983	Wet	8	4	5	7	6	3	3	2	4	3	2	2
1984	Wet	0	0	1	2	1	2	2	2	1	-1	-1	-1
1985	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	2
1986	Wet	4	1	2	3	2	2	2	2	1	0	-1	0
1987	Dry	0	0	1	1	1	1	1	1	1	-1	-1	-1
1988	Critical	0	0	0	1	1	1	1	1	1	-1	-1	-1
1989	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	0
1990	Critical	-1	0	1	1	1	1	1	1	1	-1	-1	0
1991	Critical	-1	0	0	1	1	1	1	1	1	0	0	0
1992	Critical	0	0	1	1	1	1	1	1	1	0	0	0
1993	Above Normal	0	0	1	3	2	2	1	1	1	-1	-1	-1
1994	Critical	0	0	0	1	1	1	1	1	1	-1	1	0
1995	Wet	3	1	4	4	5	2	2	1	1	-1	-1	-1
1996	Wet	1	0	1	2	1	2	1	1	1	2	9	3
1997	Wet	0	0	1	2	1	1	2	2	1	0	0	4
1998	Wet	2	1	3	5	5	3	2	2	1	-1	0	1
1999	Wet	0	0	1	2	1	1	1	1	1	-1	-1	-1
2000	Above Normal	0	0	1	2	1	1	1	1	1	-1	-1	-1
2001	Dry	0	0	0	1	1	1	1	1	1	-1	-1	0
2002	Dry	0	0	1	1	1	1	1	1	1	0	-1	0
2003	Above Normal	-1	0	0	1	1	1	1					
	Average	0	0	1	2	2	1	1	1	1	0	0	0
	Wet	1	1	2	3	2	2	2	1	1	0	0	0
	Above Normal	0	0	1	2	2	1	1	1	1	-1	0	0
	Below Normal	0	0	1	1	1	1	1	1	1	0	0	1
	Dry	0	0	1	1	1	1	1	1	1	-1	0	0
	Critical	-1	0	0	1	1	1	1	1	1	-1	0	0
	Dry and Critical	0	0	0	1	1	1	1	1	1	-1	0	0

Table 147: Simulated Stage Middle River Near Howard Road Bridge (ft msl) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1	1	-1	-1	0
1922	Above Normal	0	0	1	2	1	1	1	1	1	0	0	0
1923	Below Normal	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1924	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	0
1925	Dry	0	0	1	1	1	1	1	1	1	-1	-1	0
1926	Dry	0	0	0	1	1	1	1	1	1	-1	-1	0
1927	Wet	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1928	Above Normal	0	0	0	1	1	1	1	1	1	-1	-1	-1
1929	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1930	Dry	0	0	0	1	1	1	1	1	1	-1	-1	0
1931	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1932	Dry	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1933	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	0
1934	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1935	Below Normal	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1936	Below Normal	0	0	1	1	1	1	1	1	1	-1	-1	2
1937	Below Normal	1	0	1	1	1	1	1	1	1	0	0	4
1938	Wet	5	2	3	4	2	1	1	1	1	-1	-1	-1
1939	Dry	-1	0	0	1	1	1	1	1	1	-1	0	0
1940	Above Normal	0	0	1	1	1	1	1	1	1	0	0	2
1941	Wet	1	1	1	1	1	1	1	1	1	0	1	1
1942	Wet	0	1	1	2	1	1	1	1	1	-1	1	1
1943	Wet	3	1	1	1	1	1	1	1	1	-1	-1	-1
1944	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	0
1945	Below Normal	0	0	1	1	1	1	1	1	1	0	0	0
1946	Below Normal	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1947	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1948	Below Normal	-1	0	0	1	1	1	1	1	1	-1	-1	0
1949	Dry	0	0	0	1	1	1	1	1	1	-1	-1	-1
1950	Below Normal	-1	0	0	1	1	1	1	1	1	2	1	1
1951	Above Normal	0	0	1	1	1	1	1	1	1	0	0	0
1952	Wet	1	1	2	3	2	1	1	1	1	0	0	-1
1953	Wet	-1	0	0	1	1	1	1	1	1	-1	-1	0
1954	Above Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1955	Dry	-1	0	0	1	1	1	1	1	1	0	3	3
1956	Wet	0	0	1	2	1	1	1	1	1	-1	-1	-1
1957	Above Normal	-1	0	1	1	1	1	1	1	1	-1	0	1
1958	Wet	1	2	2	2	1	1	1	1	1	-1	0	0
1959	Below Normal	0	0	0	1	1	1	1	1	1	-1	-1	-1
1960	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1961	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	0
1962	Below Normal	-1	0	0	1	1	1	1	1	1	-1	-1	0
1963	Wet	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1964	Dry	-1	0	0	1	0	1	1	1	1	0	1	0
1965	Wet	0	1	0	1	1	1	1	1	1	0	0	0
1966	Below Normal	-1	0	0	1	1	1	1	1	1	-1	0	0
1967	Wet	0	2	2	3	3	1	1	1	1	-1	-1	-1
1968	Below Normal	0	0	0	1	1	1	1	1	1	-1	1	4
1969	Wet	3	3	4	5	2	1	1	1	1	0	2	1
1970	Wet	0	0	0	1	1	1	1	1	1	0	-1	-1
1971	Wet	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1972	Below Normal	-1	0	0	1	1	1	1	1	1	0	0	0
1973	Above Normal	0	0	0	1	1	1	1	1	1	0	0	-1
1974	Wet	0	0	0	1	1	1	1	1	1	-1	-1	0
1975	Wet	0	0	0	1	1	1	1	1	1	-1	-1	-1
1976	Critical	-1	0	0	1	1	1	1	1	1	0	-1	-1
1977	Critical	-1	0	0	1	1	1	1	1	1	-1	0	1
1978	Above Normal	1	1	1	2	1	1	1	1	1	-1	0	0
1979	Below Normal	0	0	1	1	1	1	1	1	1	-1	1	1
1980	Above Normal	2	0	1	2	1	1	1	1	1	-1	0	-1
1981	Dry	0	0	0	1	1	1	1	1	1	0	0	2
1982	Wet	2	4	3	2	2	1	2	1	2	3	4	6
1983	Wet	8	3	4	5	4	2	2	1	2	4	2	2
1984	Wet	0	0	0	1	1	1	1	1	1	-1	-1	-1
1985	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	3
1986	Wet	4	1	1	2	1	1	1	1	1	-1	-1	0
1987	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1988	Critical	-1	0	0	1	0	1	1	1	1	-1	-1	-1
1989	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1990	Critical	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1991	Critical	-1	0	0	1	1	1	1	1	1	-1	0	0
1992	Critical	0	0	0	1	1	1	1	1	1	-1	0	0
1993	Above Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1994	Critical	-1	0	0	1	1	1	1	1	1	-1	0	0
1995	Wet	3	1	3	2	3	1	1	1	1	-1	-1	-1
1996	Wet	1	0	1	1	1	1	1	1	1	3	10	3
1997	Wet	0	0	1	1	1	1	1	1	1	0	0	4
1998	Wet	2	1	2	4	3	1	1	1	1	-1	0	1
1999	Wet	0	0	1	1	1	1	1	1	1	-1	-1	-1
2000	Above Normal	0	0	0	1	1	1	1	1	1	-1	-1	-1
2001	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
2002	Dry	-1	0	0	1	1	1	1	1	1	0	0	0
2003	Above Normal	-1	0	0	1	1	1	1					
	Average	0	0	1	1	1	1	1	1	1	0	0	0
	Wet	1	1	1	2	2	1	1	1	1	0	0	0
	Above Normal	0	0	1	1	1	1	1	1	1	-1	0	0
	Below Normal	0	0	1	1	1	1	1	1	1	0	0	1
	Dry	-1	0	0	1	1	1	1	1	1	-1	0	0
	Critical	-1	0	0	1	1	1	1	1	1	-1	0	0
	Dry and Critical	-1	0	0	1	1	1	1	1	1	-1	0	0

Table 148: Simulated Stage Middle River Near Howard Road Bridge (ft msl) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1	1	-1	-1	0
1922	Above Normal	0	0	1	2	1	1	1	1	1	0	0	0
1923	Below Normal	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1924	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	0
1925	Dry	0	0	1	1	1	1	1	1	1	-1	-1	0
1926	Dry	0	0	0	1	1	1	1	1	1	-1	-1	0
1927	Wet	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1928	Above Normal	0	0	0	1	1	1	1	1	1	-1	-1	-1
1929	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1930	Dry	0	0	0	1	1	1	1	1	1	-1	-1	0
1931	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1932	Dry	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1933	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	0
1934	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1935	Below Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1936	Below Normal	0	0	1	1	1	1	1	1	1	-1	-1	1
1937	Below Normal	1	0	1	1	1	1	1	1	1	0	0	3
1938	Wet	5	2	3	4	2	1	1	1	1	-1	-1	-1
1939	Dry	-1	0	0	1	1	1	1	1	1	-1	0	0
1940	Above Normal	1	1	1	1	1	1	1	1	1	0	0	2
1941	Wet	2	1	1	2	1	1	1	1	1	0	1	1
1942	Wet	0	1	1	2	1	1	1	1	1	-1	1	1
1943	Wet	2	1	1	1	1	1	1	1	1	-1	-1	-1
1944	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	0
1945	Below Normal	0	0	1	1	1	1	1	1	1	0	0	0
1946	Below Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1947	Dry	0	0	0	1	1	1	1	1	1	-1	-1	-1
1948	Below Normal	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1949	Dry	0	0	0	1	1	1	1	1	1	-1	-1	-1
1950	Below Normal	-1	0	0	1	1	1	1	1	1	1	1	1
1951	Above Normal	0	0	1	1	1	1	1	1	1	0	0	0
1952	Wet	1	1	2	3	2	1	1	1	1	0	0	-1
1953	Wet	-1	0	0	1	1	1	1	1	1	-1	-1	0
1954	Above Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1955	Dry	-1	0	0	1	1	1	1	1	1	0	3	3
1956	Wet	0	0	1	2	1	1	1	1	1	-1	-1	-1
1957	Above Normal	-1	0	1	1	1	1	1	1	1	-1	0	1
1958	Wet	1	2	2	2	1	1	1	1	1	-1	0	0
1959	Below Normal	0	0	0	1	1	1	1	1	1	-1	-1	-1
1960	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1961	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	0
1962	Below Normal	-1	0	0	1	1	1	1	1	1	-1	-1	0
1963	Wet	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1964	Dry	-1	0	0	1	0	1	1	1	1	0	0	0
1965	Wet	0	1	0	1	1	1	1	1	1	0	0	0
1966	Below Normal	-1	0	0	1	1	1	1	1	1	-1	0	0
1967	Wet	0	2	2	3	3	1	1	1	1	-1	-1	-1
1968	Below Normal	0	0	0	1	1	1	1	1	1	-1	1	4
1969	Wet	3	3	4	4	2	1	1	1	1	0	2	1
1970	Wet	0	0	0	1	1	1	1	1	1	0	-1	-1
1971	Wet	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1972	Below Normal	-1	0	0	1	1	1	1	1	1	0	0	1
1973	Above Normal	0	0	0	1	1	1	1	1	1	0	0	-1
1974	Wet	0	0	1	1	1	1	1	1	1	-1	-1	0
1975	Wet	0	0	0	1	1	1	1	1	1	-1	-1	-1
1976	Critical	-1	0	0	1	1	1	1	1	1	0	-1	-1
1977	Critical	-1	0	0	1	1	1	1	1	1	-1	0	0
1978	Above Normal	1	1	1	2	1	1	1	1	1	-1	0	0
1979	Below Normal	0	0	1	1	1	1	1	1	1	-1	1	1
1980	Above Normal	2	0	1	2	1	1	1	1	1	-1	0	-1
1981	Dry	0	0	0	1	1	1	1	1	1	0	0	2
1982	Wet	2	4	2	2	2	1	2	1	2	3	4	5
1983	Wet	8	3	4	5	4	2	2	1	2	3	2	2
1984	Wet	0	0	0	1	1	1	1	1	1	-1	-1	-1
1985	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	2
1986	Wet	4	1	1	2	1	1	1	1	1	-1	-1	0
1987	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1988	Critical	-1	0	0	1	0	1	1	1	1	-1	-1	-1
1989	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1990	Critical	-1	0	1	1	1	1	1	1	1	-1	-1	-1
1991	Critical	-1	0	0	1	1	1	1	1	1	-1	0	0
1992	Critical	0	0	0	1	1	1	1	1	1	-1	0	0
1993	Above Normal	0	0	1	2	1	1	1	1	1	-1	-1	-1
1994	Critical	-1	0	0	1	1	1	1	1	1	-1	0	0
1995	Wet	3	1	3	3	3	1	1	1	1	-1	-1	-1
1996	Wet	1	0	1	1	1	1	1	1	1	2	9	3
1997	Wet	0	0	1	1	1	1	1	1	1	0	0	4
1998	Wet	2	1	2	3	3	1	1	1	1	-1	0	1
1999	Wet	0	0	1	1	1	1	1	1	1	-1	-1	-1
2000	Above Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
2001	Dry	0	0	0	1	1	1	1	1	1	-1	-1	-1
2002	Dry	-1	0	0	1	1	1	1	1	1	0	0	0
2003	Above Normal	-1	0	0	1	1	1	1					
	Average	0	0	1	1	1	1	1	1	1	-1	0	0
	Wet	1	1	1	2	2	1	1	1	1	0	0	0
	Above Normal	0	0	1	1	1	1	1	1	1	-1	0	0
	Below Normal	0	0	1	1	1	1	1	1	1	0	0	1
	Dry	-1	0	0	1	1	1	1	1	1	-1	0	0
	Critical	-1	0	0	1	1	1	1	1	1	-1	0	0
	Dry and Critical	-1	0	0	1	1	1	1	1	1	-1	0	0

Table 149: Simulated Stage Grant Line Canal above Grant Line Canal Barrier (ft msl) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1	1	0	-1	0
1922	Above Normal	0	0	1	4	2	2	1	1	1	0	0	0
1923	Below Normal	0	0	1	2	1	2	2	1	1	-1	-1	-1
1924	Critical	0	0	0	1	1	1	1	1	1	-1	-1	0
1925	Dry	0	0	1	2	1	1	1	1	1	0	0	0
1926	Dry	0	0	0	1	1	1	1	1	1	-1	0	1
1927	Wet	0	0	0	1	1	1	1	1	1	0	-1	-1
1928	Above Normal	0	0	0	1	1	1	1	1	1	-1	-1	-1
1929	Critical	-1	-1	0	1	1	1	2	1	1	-1	-1	0
1930	Dry	0	0	0	1	1	1	1	1	1	0	-1	0
1931	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1932	Dry	0	0	1	2	2	1	1	1	1	-1	-1	-1
1933	Critical	0	0	0	1	1	1	1	1	1	-1	-1	0
1934	Critical	0	0	0	1	1	1	1	1	1	-1	0	0
1935	Below Normal	0	0	1	2	1	1	1	1	1	0	-1	-1
1936	Below Normal	0	0	1	2	1	2	1	1	1	0	0	2
1937	Below Normal	1	0	1	2	2	2	1	1	1	0	0	4
1938	Wet	5	2	4	6	3	2	2	2	1	-1	-1	-1
1939	Dry	-1	0	0	1	1	1	2	1	1	0	0	0
1940	Above Normal	1	0	1	2	1	1	1	1	1	0	1	2
1941	Wet	2	1	1	3	3	2	2	1	1	0	1	1
1942	Wet	0	0	1	3	3	2	2	1	1	-1	1	1
1943	Wet	3	0	1	2	2	2	1	1	1	0	-1	-1
1944	Dry	0	0	0	1	1	1	1	1	1	-1	-1	1
1945	Below Normal	1	0	1	2	2	2	1	1	1	0	0	0
1946	Below Normal	0	0	1	2	1	1	1	1	1	0	-1	0
1947	Dry	0	-1	0	1	1	1	1	1	1	-1	-1	-1
1948	Below Normal	-1	0	0	1	1	1	1	1	1	-1	-1	0
1949	Dry	0	-1	0	1	1	1	1	1	1	-1	-1	-1
1950	Below Normal	-1	-1	0	1	1	1	1	1	1	2	2	1
1951	Above Normal	0	0	0	2	1	1	1	1	1	0	1	1
1952	Wet	1	1	3	4	3	2	2	1	1	0	0	0
1953	Wet	0	-1	0	1	1	1	1	1	1	-1	0	0
1954	Above Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1955	Dry	-1	-1	0	1	1	1	1	1	1	1	3	3
1956	Wet	0	0	1	3	2	2	2	1	1	-1	0	0
1957	Above Normal	0	0	1	1	1	1	1	1	1	0	0	1
1958	Wet	1	2	2	4	3	2	2	1	1	0	0	0
1959	Below Normal	0	0	0	1	1	1	2	1	1	0	0	0
1960	Dry	-1	-1	0	1	1	1	1	1	1	-1	-1	0
1961	Dry	0	0	0	1	1	1	1	1	1	-1	-1	0
1962	Below Normal	0	-1	0	1	1	1	1	1	1	-1	-1	0
1963	Wet	0	0	0	2	1	1	1	1	1	0	-1	-1
1964	Dry	-1	-1	0	1	1	1	1	1	1	0	1	0
1965	Wet	0	0	1	2	1	2	2	1	2	0	0	0
1966	Below Normal	-1	0	0	1	1	1	1	1	1	0	0	0
1967	Wet	0	1	2	5	5	2	2	1	1	-1	0	0
1968	Below Normal	0	0	0	1	1	1	1	1	1	-1	1	5
1969	Wet	3	3	5	7	3	2	2	2	1	0	3	1
1970	Wet	0	-1	0	1	1	1	1	1	1	0	-1	-1
1971	Wet	-1	-1	0	1	1	1	1	1	1	-1	-1	-1
1972	Below Normal	-1	-1	0	1	1	1	1	1	1	0	0	1
1973	Above Normal	0	-1	0	2	1	2	1	1	1	0	1	0
1974	Wet	1	0	1	2	2	2	2	2	1	-1	-1	0
1975	Wet	1	0	0	3	2	2	1	1	1	-1	-1	-1
1976	Critical	-1	0	0	1	1	1	2	1	1	0	0	0
1977	Critical	-1	-1	0	1	1	1	1	1	1	-1	0	1
1978	Above Normal	1	1	2	3	2	2	2	1	1	-1	0	0
1979	Below Normal	1	0	1	2	1	2	1	1	1	-1	2	2
1980	Above Normal	2	0	1	3	3	2	2	1	1	-1	0	-1
1981	Dry	0	0	0	1	1	1	1	1	1	0	0	2
1982	Wet	2	4	4	4	3	2	3	2	3	3	5	6
1983	Wet	9	4	5	7	7	3	3	2	4	4	2	2
1984	Wet	0	0	1	2	1	2	2	2	1	0	-1	-1
1985	Dry	-1	-1	0	1	1	1	1	1	1	-1	-1	3
1986	Wet	5	1	1	3	2	2	2	2	1	0	-1	0
1987	Dry	0	-1	0	1	1	1	1	1	1	-1	-1	-1
1988	Critical	0	0	0	1	1	1	1	1	1	-1	-1	-1
1989	Dry	-1	-1	0	1	1	1	1	1	1	0	-1	0
1990	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	0
1991	Critical	-1	-1	0	1	1	1	1	1	1	0	0	0
1992	Critical	0	0	0	1	1	1	1	1	1	0	0	0
1993	Above Normal	0	0	0	3	2	2	1	1	1	-1	-1	0
1994	Critical	0	-1	0	1	1	1	1	1	1	-1	1	0
1995	Wet	3	1	4	4	5	2	2	1	1	-1	0	0
1996	Wet	1	0	1	2	2	2	1	1	1	3	10	4
1997	Wet	1	-1	1	2	1	2	2	2	1	0	1	5
1998	Wet	2	1	3	6	5	3	2	2	1	-1	0	1
1999	Wet	0	0	1	2	1	1	1	1	1	-1	-1	-1
2000	Above Normal	0	0	0	2	1	1	1	1	1	-1	-1	-1
2001	Dry	0	-1	0	1	1	1	1	1	1	-1	-1	0
2002	Dry	0	-1	0	1	1	1	1	1	1	0	0	0
2003	Above Normal	-1	0	0	1	1	1	1					
	Average	0	0	1	2	2	1	1	1	1	0	0	0
	Wet	2	1	2	3	3	2	2	1	1	0	1	1
	Above Normal	0	0	1	2	2	1	1	1	1	0	0	0
	Below Normal	0	0	1	1	1	1	1	1	1	0	0	1
	Dry	0	0	0	1	1	1	1	1	1	0	0	0
	Critical	0	-1	0	1	1	1	1	1	1	-1	0	0
	Dry and Critical	0	0	0	1	1	1	1	1	1	0	0	0

Table 150: Simulated Stage Grant Line Canal above Grant Line Canal Barrier (ft msl) - Proposed Action

	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								1	1	0	-1	0
1922	Above Normal	0	0	1	4	2	2	1	1	1	0	0	0
1923	Below Normal	0	0	1	2	1	2	2	1	1	-1	-1	-1
1924	Critical	0	0	0	1	1	1	1	1	1	-1	-1	0
1925	Dry	0	0	1	2	1	1	1	1	1	0	0	0
1926	Dry	0	0	0	1	1	1	1	1	1	-1	0	1
1927	Wet	0	0	0	1	1	1	1	1	1	0	-1	-1
1928	Above Normal	0	0	0	1	1	1	1	1	1	-1	-1	-1
1929	Critical	-1	-1	0	1	1	1	2	1	1	-1	-1	0
1930	Dry	0	0	0	1	1	1	1	1	1	0	-1	0
1931	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	-1
1932	Dry	0	0	1	2	2	1	1	1	1	-1	0	-1
1933	Critical	0	0	0	1	1	1	1	1	1	-1	-1	0
1934	Critical	0	0	0	1	1	1	1	1	1	-1	0	0
1935	Below Normal	0	0	1	2	1	1	1	1	1	0	-1	-1
1936	Below Normal	0	0	1	2	1	2	1	1	1	0	0	2
1937	Below Normal	1	0	1	2	2	2	1	1	1	0	0	4
1938	Wet	5	2	4	6	3	2	2	2	1	-1	-1	-1
1939	Dry	0	0	0	1	1	1	2	1	1	0	0	0
1940	Above Normal	1	0	1	2	1	1	1	1	1	0	1	2
1941	Wet	2	1	2	3	3	2	2	1	1	0	1	1
1942	Wet	0	1	1	3	3	2	2	1	1	-1	1	1
1943	Wet	3	0	1	2	2	2	1	1	1	0	-1	-1
1944	Dry	0	0	0	1	1	1	1	1	1	-1	-1	1
1945	Below Normal	1	0	1	2	2	2	2	1	1	1	0	0
1946	Below Normal	0	0	1	2	1	1	1	1	1	0	-1	0
1947	Dry	0	-1	0	1	1	1	1	1	1	-1	-1	-1
1948	Below Normal	-1	0	0	1	1	1	1	1	1	-1	-1	0
1949	Dry	0	0	0	2	1	1	1	1	1	-1	-1	-1
1950	Below Normal	-1	-1	0	1	1	1	1	1	1	1	2	1
1951	Above Normal	0	0	0	2	1	1	1	1	1	0	1	1
1952	Wet	1	1	3	4	3	2	2	1	1	0	0	0
1953	Wet	0	0	0	1	1	1	1	1	1	-1	0	0
1954	Above Normal	0	0	1	1	1	1	1	1	1	-1	-1	-1
1955	Dry	0	0	0	1	1	1	1	1	1	0	3	3
1956	Wet	0	0	1	3	2	2	2	1	1	-1	0	0
1957	Above Normal	0	0	1	1	1	1	1	1	1	0	0	1
1958	Wet	1	3	2	4	3	2	2	1	1	0	0	0
1959	Below Normal	0	0	0	1	1	1	2	1	1	0	0	0
1960	Dry	-1	0	0	1	1	1	1	1	1	-1	-1	0
1961	Dry	0	0	0	1	1	1	1	1	1	-1	-1	0
1962	Below Normal	0	-1	0	1	1	1	1	1	1	-1	-1	0
1963	Wet	0	0	1	2	1	1	1	1	1	0	-1	-1
1964	Dry	-1	-1	0	1	1	1	1	1	1	0	1	0
1965	Wet	0	0	1	2	1	2	2	1	2	0	0	0
1966	Below Normal	-1	0	0	1	1	1	1	1	1	0	0	0
1967	Wet	0	1	2	4	5	2	2	1	1	-1	0	0
1968	Below Normal	0	0	0	1	1	1	1	1	1	-1	1	4
1969	Wet	3	3	5	6	3	2	2	2	1	0	2	1
1970	Wet	1	0	0	1	1	1	1	1	1	0	-1	-1
1971	Wet	-1	-1	0	1	1	1	1	1	1	-1	-1	-1
1972	Below Normal	-1	0	0	1	1	1	1	2	1	0	0	1
1973	Above Normal	0	0	1	2	1	2	1	1	1	0	0	0
1974	Wet	1	0	1	2	2	2	2	2	1	-1	-1	0
1975	Wet	1	0	0	3	2	2	1	1	1	-1	-1	-1
1976	Critical	-1	0	0	1	1	1	2	1	1	0	0	0
1977	Critical	-1	-1	0	1	1	1	1	1	1	-1	0	1
1978	Above Normal	1	1	2	3	2	2	2	1	1	-1	0	1
1979	Below Normal	1	0	1	2	1	2	1	1	1	-1	1	1
1980	Above Normal	2	0	1	4	3	2	2	1	1	-1	0	0
1981	Dry	0	0	0	1	1	1	1	1	1	0	0	2
1982	Wet	2	4	3	4	3	2	3	2	3	3	5	6
1983	Wet	9	4	5	7	7	3	3	2	4	4	2	2
1984	Wet	0	0	1	2	2	2	2	2	1	0	-1	0
1985	Dry	0	0	0	1	1	1	1	1	1	-1	-1	2
1986	Wet	5	1	1	3	2	2	2	2	1	0	-1	0
1987	Dry	0	-1	0	1	1	1	1	1	1	-1	-1	-1
1988	Critical	0	0	0	1	1	1	1	1	1	-1	-1	-1
1989	Dry	-1	-1	0	1	1	1	1	1	1	0	-1	0
1990	Critical	-1	0	0	1	1	1	1	1	1	-1	-1	0
1991	Critical	0	-1	0	1	1	1	1	1	1	0	0	0
1992	Critical	0	0	0	1	1	1	1	1	1	0	0	0
1993	Above Normal	0	0	1	3	2	2	1	1	1	-1	-1	0
1994	Critical	0	-1	0	1	1	1	1	1	1	-1	1	0
1995	Wet	3	1	4	4	5	2	2	1	1	-1	0	0
1996	Wet	1	0	1	2	2	2	2	1	1	3	10	4
1997	Wet	1	0	1	2	1	2	2	2	1	0	1	4
1998	Wet	2	1	3	5	5	3	2	2	1	-1	0	1
1999	Wet	1	0	1	2	1	1	1	1	1	-1	-1	-1
2000	Above Normal	1	0	1	2	1	1	1	1	1	-1	-1	-1
2001	Dry	0	-1	0	1	1	1	1	1	1	-1	-1	0
2002	Dry	0	-1	0	1	1	1	1	1	1	0	0	0
2003	Above Normal	-1	0	0	1	1	1	1					
	Average	0	0	1	2	2	1	1	1	1	0	0	0
	Wet	2	1	2	3	3	2	2	1	1	0	0	0
	Above Normal	0	0	1	2	2	1	1	1	1	0	0	0
	Below Normal	0	0	1	1	1	1	1	1	1	0	0	1
	Dry	0	0	0	1	1	1	1	1	1	0	0	0
	Critical	0	0	0	1	1	1	1	1	1	-1	0	0
	Dry and Critical	0	0	0	1	1	1	1	1	1	-1	0	0

Table 151: Simulated Stage East of Coney Island (ft msl) - No-Action Alternative

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								-1	-1	-1	-1	0
1922	Above Normal	-1	-1	-1	0	-1	-1	-1	-1	-1	-1	-1	-1
1923	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1924	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1925	Dry	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1926	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1927	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1928	Above Normal	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1929	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1930	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1931	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1932	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1933	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1934	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1935	Below Normal	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1936	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1937	Below Normal	0	-1	-1	-1	-1	-1	-1	-1	-1	0	0	1
1938	Wet	2	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1
1939	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1940	Above Normal	0	0	-1	-1	-1	-1	-1	-1	-1	0	0	1
1941	Wet	1	0	0	-1	-1	-1	-1	-1	-1	0	0	0
1942	Wet	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1943	Wet	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1944	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1945	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	-1	-1
1946	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1947	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1948	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1949	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1950	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0	0
1951	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1952	Wet	0	0	0	0	-1	-1	-1	-1	-1	-1	0	-1
1953	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1954	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1955	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	1	1
1956	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1957	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1958	Wet	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	0
1959	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1960	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1961	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1962	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1963	Wet	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1964	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	-1
1965	Wet	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1966	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1967	Wet	-1	0	0	0	0	-1	-1	-1	-1	-1	-1	-1
1968	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	1
1969	Wet	0	0	0	0	-1	-1	-1	-1	-1	-1	1	0
1970	Wet	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1971	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1972	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1973	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	-1
1974	Wet	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1975	Wet	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1976	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1977	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1978	Above Normal	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1979	Below Normal	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1980	Above Normal	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1981	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1982	Wet	0	1	0	-1	-1	-1	0	-1	0	1	1	2
1983	Wet	4	1	1	1	1	0	0	-1	0	1	0	0
1984	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1985	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1
1986	Wet	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1987	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1988	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1989	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1990	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1991	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1992	Critical	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1993	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1994	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1995	Wet	1	0	0	0	0	-1	-1	-1	-1	-1	-1	-1
1996	Wet	0	-1	-1	-1	-1	-1	-1	-1	-1	0	4	0
1997	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	2
1998	Wet	0	0	0	0	0	-1	-1	-1	-1	-1	-1	0
1999	Wet	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2000	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2001	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2002	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
2003	Above Normal	-1	-1	-1	-1	-1	-1	-1					
	Average	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
	Wet	0	0	-1	-1	-1	-1	-1	-1	-1	-1	0	0
	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
	Dry and Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Table 152: Simulated Stage East of Coney Island (ft msl) - Proposed Action

Year	Year Type	March	April	May	June	July	August	September	October	November	December	January	February
1921	Above Normal								-1	-1	-1	-1	0
1922	Above Normal	-1	-1	-1	0	-1	-1	-1	-1	-1	-1	-1	-1
1923	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1924	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1925	Dry	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1926	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1927	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1928	Above Normal	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1929	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1930	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1931	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1932	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1933	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1934	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1935	Below Normal	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1936	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1937	Below Normal	0	-1	-1	-1	-1	-1	-1	-1	-1	0	0	1
1938	Wet	2	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1
1939	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1940	Above Normal	0	0	-1	-1	-1	-1	-1	-1	-1	0	0	1
1941	Wet	1	0	0	-1	-1	-1	-1	-1	-1	0	0	0
1942	Wet	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1943	Wet	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1944	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1945	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	-1	-1
1946	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1947	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1948	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1949	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1950	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0	0
1951	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1952	Wet	0	0	0	0	-1	-1	-1	-1	-1	-1	0	-1
1953	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1954	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1955	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	1	1
1956	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1957	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1958	Wet	0	0	0	0	-1	-1	0	-1	-1	-1	-1	0
1959	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1960	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1961	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1962	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1963	Wet	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1964	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	-1
1965	Wet	-1	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1966	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1967	Wet	-1	0	0	0	0	-1	-1	-1	-1	-1	-1	-1
1968	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	1
1969	Wet	0	0	0	0	-1	-1	-1	-1	-1	-1	1	0
1970	Wet	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1971	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1972	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1973	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	-1
1974	Wet	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1975	Wet	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1976	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1977	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1978	Above Normal	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1979	Below Normal	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1980	Above Normal	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1981	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
1982	Wet	0	1	0	-1	-1	-1	0	-1	0	0	1	2
1983	Wet	4	1	1	1	1	0	0	-1	0	1	0	0
1984	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1985	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	1
1986	Wet	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1987	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1988	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1989	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1990	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1991	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1992	Critical	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1993	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
1994	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	0
1995	Wet	1	0	0	0	0	-1	-1	-1	-1	-1	-1	-1
1996	Wet	0	-1	-1	-1	-1	-1	-1	-1	-1	0	4	0
1997	Wet	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0	2
1998	Wet	0	0	0	0	0	-1	-1	-1	-1	-1	-1	0
1999	Wet	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2000	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2001	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
2002	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
2003	Above Normal	-1	-1	-1	-1	-1	-1	-1					
	Average	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
	Wet	0	0	-1	-1	-1	-1	-1	-1	-1	-1	0	0
	Above Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
	Below Normal	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
	Dry	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	0
	Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
	Dry and Critical	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1

Attachment 3

Temperature Modeling Output – SJR5Q

Modeling

SAN JOAQUIN RIVER
RESTORATION PROGRAM

June 2009

Table 1: Monthly Averages of Simulated Millerton Release (Head of Reach 1) (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	996	1,389	393 (39%)
Mar 16-31	915	1,521	607 (66%)
Apr 1-15	1,044	1,595	552 (53%)
Apr 16-30	1,160	1,527	367 (32%)
May 1-31	1,283	1,171	-112 (-9%)
Jun 1-30	1,306	1,305	-1 (0%)
Jul 1-31	910	1,019	109 (12%)
Aug 1-31	237	358	121 (51%)
Sep 1-30	207	350	143 (69%)
Oct 1-31	182	364	181 (99%)
Nov 1-11	143	431	288 (202%)
Nov 12-30	160	399	240 (150%)
Dec 1-31	454	325	-128 (-28%)
Jan 1-31	792	669	-123 (-16%)
Feb 1-28	1,085	937	-148 (-14%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 2: Monthly Averages of Simulated Millerton Release (Head of Reach 1) (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	2,528	2,347	-181 (-7%)
Mar 16-31	2,309	2,439	130 (6%)
Apr 1-15	2,791	2,768	-24 (-1%)
Apr 16-30	3,108	2,917	-191 (-6%)
May 1-31	3,240	2,665	-575 (-18%)
Jun 1-30	3,462	3,185	-277 (-8%)
Jul 1-31	2,279	2,356	77 (3%)
Aug 1-31	255	373	117 (46%)
Sep 1-30	207	350	143 (69%)
Oct 1-31	222	364	142 (64%)
Nov 1-11	158	431	273 (172%)
Nov 12-30	229	399	170 (74%)
Dec 1-31	832	639	-194 (-23%)
Jan 1-31	584	516	-68 (-12%)
Feb 1-28	1,131	946	-185 (-16%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 3: Monthly Averages of Simulated Millerton Release (Head of Reach 1) (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	457	1,024	566 (124%)
Mar 16-31	400	1,323	923 (231%)
Apr 1-15	224	1,528	1,303 (582%)
Apr 16-30	244	1,313	1,069 (438%)
May 1-31	564	498	-66 (-12%)
Jun 1-30	301	397	96 (32%)
Jul 1-31	225	350	125 (55%)
Aug 1-31	227	350	123 (54%)
Sep 1-30	208	350	142 (68%)
Oct 1-31	161	364	202 (125%)
Nov 1-11	134	431	296 (221%)
Nov 12-30	123	399	277 (225%)
Dec 1-31	618	158	-460 (-74%)
Jan 1-31	2,455	2,044	-412 (-17%)
Feb 1-28	1,517	1,343	-174 (-11%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 4: Monthly Averages of Simulated Millerton Release (Head of Reach 1) (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	128	859	731 (570%)
Mar 16-31	135	1,009	874 (649%)
Apr 1-15	145	992	847 (584%)
Apr 16-30	160	832	672 (421%)
May 1-31	186	424	238 (128%)
Jun 1-30	195	350	155 (79%)
Jul 1-31	225	350	125 (55%)
Aug 1-31	227	350	123 (54%)
Sep 1-30	207	350	143 (69%)
Oct 1-31	161	364	202 (125%)
Nov 1-11	134	431	296 (221%)
Nov 12-30	123	399	277 (225%)
Dec 1-31	118	158	40 (34%)
Jan 1-31	209	167	-42 (-20%)
Feb 1-28	1,108	922	-185 (-17%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 5: Monthly Averages of Simulated Millerton Release (Head of Reach 1) (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	124	857	733 (589%)
Mar 16-31	135	866	731 (543%)
Apr 1-15	145	510	365 (252%)
Apr 16-30	160	350	190 (119%)
May 1-31	186	350	164 (88%)
Jun 1-30	195	350	155 (79%)
Jul 1-31	225	350	125 (55%)
Aug 1-31	227	350	123 (54%)
Sep 1-30	207	350	143 (69%)
Oct 1-31	161	364	202 (125%)
Nov 1-11	134	431	296 (221%)
Nov 12-30	123	399	277 (225%)
Dec 1-31	118	158	40 (34%)
Jan 1-31	161	140	-21 (-13%)
Feb 1-28	552	532	-20 (-4%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 6: Monthly Averages of Simulated San Joaquin River At Gravelly Ford (Head of Reach 2A) (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1,068	1,440	372 (35%)
Mar 16-31	980	1,583	603 (62%)
Apr 1-15	989	1,545	556 (56%)
Apr 16-30	1,042	1,426	384 (37%)
May 1-31	1,148	1,045	-103 (-9%)
Jun 1-30	1,109	1,103	-6 (-1%)
Jul 1-31	758	865	107 (14%)
Aug 1-31	51	171	120 (236%)
Sep 1-30	42	183	142 (338%)
Oct 1-31	49	229	180 (365%)
Nov 1-11	44	323	279 (636%)
Nov 12-30	60	315	255 (424%)
Dec 1-31	391	273	-118 (-30%)
Jan 1-31	831	703	-128 (-15%)
Feb 1-28	1,178	1,022	-156 (-13%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 7: Monthly Averages of Simulated San Joaquin River At Gravelly Ford (Head of Reach 2A) (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	2,791	2,571	-221 (-8%)
Mar 16-31	2,574	2,703	130 (5%)
Apr 1-15	2,819	2,805	-14 (-1%)
Apr 16-30	2,999	2,820	-180 (-6%)
May 1-31	3,118	2,548	-569 (-18%)
Jun 1-30	3,208	2,923	-285 (-9%)
Jul 1-31	2,221	2,290	69 (3%)
Aug 1-31	80	197	116 (145%)
Sep 1-30	47	189	142 (303%)
Oct 1-31	94	238	143 (152%)
Nov 1-11	74	328	255 (346%)
Nov 12-30	121	323	202 (168%)
Dec 1-31	781	583	-198 (-25%)
Jan 1-31	584	511	-73 (-12%)
Feb 1-28	1,245	1,054	-191 (-15%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 8: Monthly Averages of Simulated San Joaquin River At Gravelly Ford (Head of Reach 2A) (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	511	1,078	567 (111%)
Mar 16-31	381	1,271	889 (233%)
Apr 1-15	139	1,425	1,286 (927%)
Apr 16-30	128	1,239	1,111 (865%)
May 1-31	425	381	-44 (-10%)
Jun 1-30	135	223	88 (65%)
Jul 1-31	25	150	125 (503%)
Aug 1-31	31	154	122 (390%)
Sep 1-30	33	174	140 (422%)
Oct 1-31	25	224	199 (801%)
Nov 1-11	34	325	292 (868%)
Nov 12-30	36	319	283 (782%)
Dec 1-31	587	179	-408 (-70%)
Jan 1-31	2,630	2,194	-436 (-17%)
Feb 1-28	1,743	1,562	-181 (-10%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 9: Monthly Averages of Simulated San Joaquin River At Gravelly Ford (Head of Reach 2A) (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	81	794	712 (876%)
Mar 16-31	121	996	875 (726%)
Apr 1-15	51	900	849 (1,664%)
Apr 16-30	35	725	690 (1,957%)
May 1-31	46	294	248 (536%)
Jun 1-30	27	182	155 (579%)
Jul 1-31	28	154	125 (440%)
Aug 1-31	43	165	122 (286%)
Sep 1-30	46	188	142 (312%)
Oct 1-31	29	229	199 (679%)
Nov 1-11	27	318	292 (1,093%)
Nov 12-30	26	309	283 (1,072%)
Dec 1-31	38	83	45 (120%)
Jan 1-31	155	118	-37 (-24%)
Feb 1-28	1,146	956	-190 (-17%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 10: Monthly Averages of Simulated San Joaquin River At Gravelly Ford (Head of Reach 2A) (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	53	767	715 (1,358%)
Mar 16-31	60	808	748 (1,247%)
Apr 1-15	38	423	385 (1,014%)
Apr 16-30	32	223	192 (608%)
May 1-31	39	204	165 (421%)
Jun 1-30	22	177	155 (705%)
Jul 1-31	26	152	125 (479%)
Aug 1-31	33	155	122 (369%)
Sep 1-30	38	180	142 (372%)
Oct 1-31	21	220	199 (965%)
Nov 1-11	25	317	292 (1,170%)
Nov 12-30	23	306	283 (1,243%)
Dec 1-31	36	81	45 (124%)
Jan 1-31	240	222	-19 (-8%)
Feb 1-28	540	509	-31 (-6%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 11: Monthly Averages of Simulated San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	279	746	467 (167%)
Mar 16-31	206	812	606 (294%)
Apr 1-15	131	696	565 (431%)
Apr 16-30	119	573	454 (383%)
May 1-31	205	354	149 (73%)
Jun 1-30	297	387	91 (31%)
Jul 1-31	190	278	88 (46%)
Aug 1-31	22	117	95 (432%)
Sep 1-30	10	128	119 (1,227%)
Oct 1-31	17	172	154 (893%)
Nov 1-11	17	258	241 (1,435%)
Nov 12-30	5	242	236 (4,396%)
Dec 1-31	63	68	5 (7%)
Jan 1-31	143	118	-26 (-18%)
Feb 1-28	314	421	107 (34%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 12: Monthly Averages of Simulated San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	580	651	71 (12%)
Mar 16-31	392	580	188 (48%)
Apr 1-15	318	472	154 (48%)
Apr 16-30	299	434	135 (45%)
May 1-31	502	583	81 (16%)
Jun 1-30	834	893	59 (7%)
Jul 1-31	565	640	75 (13%)
Aug 1-31	50	143	93 (186%)
Sep 1-30	15	133	118 (792%)
Oct 1-31	45	177	132 (297%)
Nov 1-11	45	248	202 (447%)
Nov 12-30	9	213	204 (2,243%)
Dec 1-31	67	76	9 (13%)
Jan 1-31	40	37	-3 (-9%)
Feb 1-28	230	394	165 (72%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 13: Monthly Averages of Simulated San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	365	958	593 (163%)
Mar 16-31	267	1,093	826 (309%)
Apr 1-15	100	1,199	1,100 (1,105%)
Apr 16-30	86	1,078	993 (1,159%)
May 1-31	169	327	158 (94%)
Jun 1-30	84	156	72 (86%)
Jul 1-31	4	96	91 (2,043%)
Aug 1-31	7	99	91 (1,227%)
Sep 1-30	7	118	111 (1,499%)
Oct 1-31	5	168	164 (3,556%)
Nov 1-11	4	269	265 (6,896%)
Nov 12-30	7	265	258 (3,668%)
Dec 1-31	213	127	-86 (-40%)
Jan 1-31	309	258	-51 (-17%)
Feb 1-28	265	357	93 (35%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 14: Monthly Averages of Simulated San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	34	731	697 (2,060%)
Mar 16-31	69	934	865 (1,250%)
Apr 1-15	13	844	831 (6,613%)
Apr 16-30	2	674	672 (30,442%)
May 1-31	7	242	235 (3,413%)
Jun 1-30	4	127	123 (2,922%)
Jul 1-31	3	99	96 (3,492%)
Aug 1-31	11	110	99 (876%)
Sep 1-30	9	133	124 (1,439%)
Oct 1-31	3	173	170 (5,360%)
Nov 1-11	0	262	261 (79,175%)
Nov 12-30	3	255	253 (9,237%)
Dec 1-31	7	41	34 (501%)
Jan 1-31	109	70	-39 (-36%)
Feb 1-28	430	502	71 (17%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 15: Monthly Averages of Simulated San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	8	705	697 (9,263%)
Mar 16-31	13	756	743 (5,810%)
Apr 1-15	6	374	368 (6,357%)
Apr 16-30	3	169	166 (6,051%)
May 1-31	4	149	146 (3,974%)
Jun 1-30	1	122	121 (19,608%)
Jul 1-31	1	97	96 (7,113%)
Aug 1-31	4	100	96 (2,164%)
Sep 1-30	5	125	120 (2,526%)
Oct 1-31	1	164	164 (20,921%)
Nov 1-11	1	260	259 (19,491%)
Nov 12-30	1	252	251 (20,048%)
Dec 1-31	3	38	35 (1,246%)
Jan 1-31	184	164	-20 (-11%)
Feb 1-28	357	431	73 (21%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 16: Monthly Averages of Simulated San Joaquin River Below Mendota Pool (Head of Reach 3) (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	906	1,355	449 (50%)
Mar 16-31	857	1,427	570 (66%)
Apr 1-15	840	1,402	562 (67%)
Apr 16-30	919	1,358	439 (48%)
May 1-31	832	974	142 (17%)
Jun 1-30	818	892	75 (9%)
Jul 1-31	697	766	69 (10%)
Aug 1-31	464	538	74 (16%)
Sep 1-30	293	388	94 (32%)
Oct 1-31	281	413	132 (47%)
Nov 1-11	218	434	216 (99%)
Nov 12-30	266	481	215 (81%)
Dec 1-31	489	487	-2 (0%)
Jan 1-31	600	571	-29 (-5%)
Feb 1-28	829	920	91 (11%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 17: Monthly Averages of Simulated San Joaquin River Below Mendota Pool (Head of Reach 3) (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	2,090	2,156	66 (3%)
Mar 16-31	2,090	2,266	176 (8%)
Apr 1-15	2,140	2,309	169 (8%)
Apr 16-30	2,366	2,500	134 (6%)
May 1-31	1,950	2,032	82 (4%)
Jun 1-30	1,574	1,633	59 (4%)
Jul 1-31	1,042	1,107	65 (6%)
Aug 1-31	447	520	72 (16%)
Sep 1-30	263	352	89 (34%)
Oct 1-31	360	476	115 (32%)
Nov 1-11	359	539	180 (50%)
Nov 12-30	579	763	184 (32%)
Dec 1-31	989	993	4 (0%)
Jan 1-31	897	889	-8 (-1%)
Feb 1-28	881	1,029	148 (17%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 18: Monthly Averages of Simulated San Joaquin River Below Mendota Pool (Head of Reach 3) (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	404	975	571 (141%)
Mar 16-31	336	1,041	705 (210%)
Apr 1-15	170	1,272	1,101 (647%)
Apr 16-30	159	1,127	968 (610%)
May 1-31	390	560	170 (44%)
Jun 1-30	481	531	50 (10%)
Jul 1-31	499	567	69 (14%)
Aug 1-31	469	538	69 (15%)
Sep 1-30	311	400	88 (28%)
Oct 1-31	238	379	140 (59%)
Nov 1-11	142	383	241 (169%)
Nov 12-30	101	338	238 (237%)
Dec 1-31	376	285	-91 (-24%)
Jan 1-31	1,091	1,037	-54 (-5%)
Feb 1-28	1,429	1,513	84 (6%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 19: Monthly Averages of Simulated San Joaquin River Below Mendota Pool (Head of Reach 3) (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	281	957	676 (241%)
Mar 16-31	209	1,059	850 (407%)
Apr 1-15	198	1,011	813 (411%)
Apr 16-30	215	866	652 (304%)
May 1-31	221	436	216 (98%)
Jun 1-30	420	519	99 (24%)
Jul 1-31	537	610	72 (13%)
Aug 1-31	476	556	80 (17%)
Sep 1-30	307	411	104 (34%)
Oct 1-31	239	384	145 (61%)
Nov 1-11	143	377	233 (163%)
Nov 12-30	99	328	230 (233%)
Dec 1-31	166	193	27 (16%)
Jan 1-31	140	97	-42 (-30%)
Feb 1-28	570	621	51 (9%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 20: Monthly Averages of Simulated San Joaquin River Below Mendota Pool (Head of Reach 3) (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	264	933	669 (254%)
Mar 16-31	184	912	728 (396%)
Apr 1-15	200	551	351 (175%)
Apr 16-30	211	354	142 (67%)
May 1-31	219	342	122 (56%)
Jun 1-30	420	516	95 (23%)
Jul 1-31	536	606	70 (13%)
Aug 1-31	474	546	72 (15%)
Sep 1-30	307	405	97 (32%)
Oct 1-31	238	375	137 (57%)
Nov 1-11	143	375	231 (162%)
Nov 12-30	98	325	227 (230%)
Dec 1-31	165	191	26 (16%)
Jan 1-31	188	164	-24 (-13%)
Feb 1-28	450	504	54 (12%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 21: Monthly Averages of Simulated San Joaquin River Below Sack Dam (Head of Reach 4A) (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	693	1,113	421 (61%)
Mar 16-31	721	1,275	554 (77%)
Apr 1-15	674	1,217	543 (81%)
Apr 16-30	726	1,159	433 (60%)
May 1-31	635	786	151 (24%)
Jun 1-30	453	526	73 (16%)
Jul 1-31	313	377	65 (21%)
Aug 1-31	152	224	73 (48%)
Sep 1-30	145	238	93 (64%)
Oct 1-31	133	264	131 (98%)
Nov 1-11	98	300	202 (206%)
Nov 12-30	189	410	221 (117%)
Dec 1-31	357	361	4 (1%)
Jan 1-31	561	534	-27 (-5%)
Feb 1-28	696	767	71 (10%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 22: Monthly Averages of Simulated San Joaquin River Below Sack Dam (Head of Reach 4A) (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1,866	1,922	55 (3%)
Mar 16-31	1,961	2,114	153 (8%)
Apr 1-15	1,947	2,098	151 (8%)
Apr 16-30	2,145	2,276	131 (6%)
May 1-31	1,740	1,824	85 (5%)
Jun 1-30	1,143	1,208	65 (6%)
Jul 1-31	698	749	51 (7%)
Aug 1-31	165	235	71 (43%)
Sep 1-30	166	254	88 (53%)
Oct 1-31	226	343	117 (52%)
Nov 1-11	246	399	153 (62%)
Nov 12-30	497	688	191 (38%)
Dec 1-31	853	862	8 (1%)
Jan 1-31	881	874	-7 (-1%)
Feb 1-28	767	892	125 (16%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 23: Monthly Averages of Simulated San Joaquin River Below Sack Dam (Head of Reach 4A) (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	283	824	540 (191%)
Mar 16-31	224	875	651 (291%)
Apr 1-15	69	1,088	1,019 (1,467%)
Apr 16-30	2	930	928 (54,647%)
May 1-31	206	404	198 (96%)
Jun 1-30	200	234	33 (17%)
Jul 1-31	136	206	70 (52%)
Aug 1-31	157	226	69 (44%)
Sep 1-30	151	238	87 (57%)
Oct 1-31	91	228	137 (151%)
Nov 1-11	20	255	235 (1,171%)
Nov 12-30	31	276	244 (776%)
Dec 1-31	246	163	-83 (-34%)
Jan 1-31	1,028	975	-53 (-5%)
Feb 1-28	1,277	1,349	72 (6%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 24: Monthly Averages of Simulated San Joaquin River Below Sack Dam (Head of Reach 4A) (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	32	667	635 (1,974%)
Mar 16-31	56	904	849 (1,524%)
Apr 1-15	14	823	809 (5,741%)
Apr 16-30	13	679	666 (5,004%)
May 1-31	20	247	227 (1,152%)
Jun 1-30	59	157	98 (165%)
Jul 1-31	104	177	73 (70%)
Aug 1-31	128	208	80 (62%)
Sep 1-30	122	224	102 (84%)
Oct 1-31	76	219	142 (187%)
Nov 1-11	19	246	227 (1,184%)
Nov 12-30	21	257	236 (1,135%)
Dec 1-31	36	69	33 (90%)
Jan 1-31	93	57	-36 (-39%)
Feb 1-28	423	451	28 (7%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 25: Monthly Averages of Simulated San Joaquin River Below Sack Dam (Head of Reach 4A) (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	17	645	628 (3,732%)
Mar 16-31	31	778	746 (2,395%)
Apr 1-15	34	410	376 (1,102%)
Apr 16-30	34	177	143 (415%)
May 1-31	35	155	120 (340%)
Jun 1-30	73	168	95 (131%)
Jul 1-31	124	195	71 (57%)
Aug 1-31	153	225	72 (47%)
Sep 1-30	135	231	96 (71%)
Oct 1-31	88	222	134 (153%)
Nov 1-11	20	244	224 (1,115%)
Nov 12-30	24	258	234 (968%)
Dec 1-31	37	68	31 (86%)
Jan 1-31	143	123	-20 (-14%)
Feb 1-28	325	358	33 (10%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 26: Monthly Averages of Simulated San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1	2	1 (75%)
Mar 16-31	1	2	1 (78%)
Apr 1-15	1	2	1 (105%)
Apr 16-30	1	2	1 (99%)
May 1-31	1	1	1 (66%)
Jun 1-30	1	1	0 (34%)
Jul 1-31	1	1	0 (12%)
Aug 1-31	1	1	0 (11%)
Sep 1-30	1	1	0 (13%)
Oct 1-31	1	1	0 (37%)
Nov 1-11	0	1	1 (226%)
Nov 12-30	0	1	1 (171%)
Dec 1-31	1	1	0 (21%)
Jan 1-31	1	1	0 (2%)
Feb 1-28	1	1	0 (55%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 27: Monthly Averages of Simulated San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	2	2	0 (1%)
Mar 16-31	2	2	0 (10%)
Apr 1-15	2	2	0 (10%)
Apr 16-30	2	2	0 (9%)
May 1-31	2	2	0 (4%)
Jun 1-30	2	2	0 (9%)
Jul 1-31	1	1	0 (6%)
Aug 1-31	1	1	0 (11%)
Sep 1-30	1	1	0 (12%)
Oct 1-31	1	1	0 (28%)
Nov 1-11	1	1	1 (104%)
Nov 12-30	1	1	1 (66%)
Dec 1-31	1	1	0 (10%)
Jan 1-31	1	1	0 (2%)
Feb 1-28	1	1	0 (46%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 28: Monthly Averages of Simulated San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1	1	1 (134%)
Mar 16-31	1	1	1 (163%)
Apr 1-15	0	2	1 (547%)
Apr 16-30	0	2	2 (6,668%)
May 1-31	0	1	1 (225%)
Jun 1-30	1	1	0 (30%)
Jul 1-31	1	1	0 (15%)
Aug 1-31	1	1	0 (9%)
Sep 1-30	1	1	0 (10%)
Oct 1-31	1	1	0 (38%)
Nov 1-11	0	1	1 (386%)
Nov 12-30	0	1	1 (273%)
Dec 1-31	1	1	0 (14%)
Jan 1-31	1	1	0 (1%)
Feb 1-28	1	2	0 (34%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 29: Monthly Averages of Simulated San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	0	1	1 (444%)
Mar 16-31	0	2	1 (251%)
Apr 1-15	0	1	1 (919%)
Apr 16-30	0	1	1 (925%)
May 1-31	0	1	1 (492%)
Jun 1-30	1	1	1 (101%)
Jul 1-31	1	1	0 (17%)
Aug 1-31	1	1	0 (13%)
Sep 1-30	1	1	0 (17%)
Oct 1-31	1	1	0 (51%)
Nov 1-11	0	1	1 (420%)
Nov 12-30	0	1	1 (445%)
Dec 1-31	0	0	0 (61%)
Jan 1-31	0	0	0 (3%)
Feb 1-28	1	1	1 (93%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 30: Monthly Averages of Simulated San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	0	1	1 (646%)
Mar 16-31	0	1	1 (363%)
Apr 1-15	0	1	1 (292%)
Apr 16-30	0	1	1 (189%)
May 1-31	0	1	1 (209%)
Jun 1-30	1	1	0 (75%)
Jul 1-31	1	1	0 (15%)
Aug 1-31	1	1	0 (8%)
Sep 1-30	1	1	0 (13%)
Oct 1-31	1	1	0 (40%)
Nov 1-11	0	1	1 (381%)
Nov 12-30	0	1	1 (373%)
Dec 1-31	0	0	0 (57%)
Jan 1-31	0	0	0 (8%)
Feb 1-28	1	1	0 (75%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 31: Monthly Averages of Simulated San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	211	184	-28 (-13%)
Mar 16-31	233	230	-4 (-2%)
Apr 1-15	239	227	-12 (-5%)
Apr 16-30	286	260	-26 (-9%)
May 1-31	255	184	-71 (-28%)
Jun 1-30	171	135	-37 (-21%)
Jul 1-31	169	157	-12 (-7%)
Aug 1-31	2	2	0 (10%)
Sep 1-30	2	2	0 (12%)
Oct 1-31	2	3	0 (25%)
Nov 1-11	1	3	1 (73%)
Nov 12-30	5	5	0 (1%)
Dec 1-31	87	63	-24 (-27%)
Jan 1-31	229	197	-33 (-14%)
Feb 1-28	252	203	-49 (-20%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 32: Monthly Averages of Simulated San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	631	544	-86 (-14%)
Mar 16-31	693	681	-12 (-2%)
Apr 1-15	715	673	-42 (-6%)
Apr 16-30	857	774	-83 (-10%)
May 1-31	739	547	-192 (-26%)
Jun 1-30	511	400	-111 (-22%)
Jul 1-31	502	466	-36 (-7%)
Aug 1-31	2	2	0 (10%)
Sep 1-30	2	2	0 (11%)
Oct 1-31	2	3	0 (19%)
Nov 1-11	2	3	1 (42%)
Nov 12-30	13	10	-2 (-18%)
Dec 1-31	237	178	-59 (-25%)
Jan 1-31	230	205	-25 (-11%)
Feb 1-28	319	236	-83 (-26%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 33: Monthly Averages of Simulated San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	3	4	0 (15%)
Mar 16-31	8	4	-4 (-47%)
Apr 1-15	1	5	4 (384%)
Apr 16-30	0	4	4 (1,983%)
May 1-31	38	3	-35 (-92%)
Jun 1-30	2	2	0 (17%)
Jul 1-31	2	2	0 (12%)
Aug 1-31	2	2	0 (9%)
Sep 1-30	2	2	0 (11%)
Oct 1-31	2	2	0 (26%)
Nov 1-11	1	2	1 (101%)
Nov 12-30	1	3	1 (100%)
Dec 1-31	21	2	-19 (-90%)
Jan 1-31	729	612	-117 (-16%)
Feb 1-28	573	496	-77 (-13%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 34: Monthly Averages of Simulated San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1	3	2 (199%)
Mar 16-31	1	4	2 (168%)
Apr 1-15	1	4	3 (328%)
Apr 16-30	1	4	3 (337%)
May 1-31	1	3	2 (199%)
Jun 1-30	1	2	1 (55%)
Jul 1-31	2	2	0 (13%)
Aug 1-31	2	2	0 (12%)
Sep 1-30	2	2	0 (15%)
Oct 1-31	2	2	1 (32%)
Nov 1-11	1	2	1 (101%)
Nov 12-30	1	3	1 (113%)
Dec 1-31	1	2	0 (21%)
Jan 1-31	1	1	0 (-2%)
Feb 1-28	102	79	-23 (-23%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 35: Monthly Averages of Simulated San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1	3	2 (243%)
Mar 16-31	1	4	2 (181%)
Apr 1-15	1	3	2 (168%)
Apr 16-30	1	2	1 (83%)
May 1-31	1	2	1 (117%)
Jun 1-30	2	2	1 (47%)
Jul 1-31	2	2	0 (12%)
Aug 1-31	2	2	0 (9%)
Sep 1-30	2	2	0 (13%)
Oct 1-31	2	2	1 (26%)
Nov 1-11	1	2	1 (94%)
Nov 12-30	1	3	1 (104%)
Dec 1-31	1	2	0 (19%)
Jan 1-31	2	2	0 (1%)
Feb 1-28	2	3	0 (15%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 36: Monthly Averages of Simulated San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1,711	1,949	238 (14%)
Mar 16-31	1,782	2,308	525 (29%)
Apr 1-15	1,650	2,182	533 (32%)
Apr 16-30	1,675	2,075	399 (24%)
May 1-31	1,635	1,555	-80 (-5%)
Jun 1-30	1,245	1,211	-35 (-3%)
Jul 1-31	1,081	1,111	30 (3%)
Aug 1-31	246	318	72 (29%)
Sep 1-30	245	336	91 (37%)
Oct 1-31	234	362	128 (54%)
Nov 1-11	195	369	175 (90%)
Nov 12-30	246	480	234 (95%)
Dec 1-31	690	599	-91 (-13%)
Jan 1-31	1,406	1,279	-128 (-9%)
Feb 1-28	1,818	1,613	-204 (-11%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 37: Monthly Averages of Simulated San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	4,593	4,180	-413 (-9%)
Mar 16-31	4,797	4,868	70 (1%)
Apr 1-15	4,686	4,693	6 (0%)
Apr 16-30	4,821	4,681	-139 (-3%)
May 1-31	4,503	3,950	-553 (-12%)
Jun 1-30	3,396	3,157	-239 (-7%)
Jul 1-31	2,899	2,840	-59 (-2%)
Aug 1-31	336	406	70 (21%)
Sep 1-30	349	435	86 (25%)
Oct 1-31	405	521	116 (29%)
Nov 1-11	411	507	97 (24%)
Nov 12-30	562	768	207 (37%)
Dec 1-31	1,556	1,370	-186 (-12%)
Jan 1-31	1,582	1,493	-89 (-6%)
Feb 1-28	2,237	1,994	-243 (-11%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 38: Monthly Averages of Simulated San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	563	1,084	522 (93%)
Mar 16-31	536	1,155	619 (116%)
Apr 1-15	219	1,346	1,127 (513%)
Apr 16-30	100	1,233	1,133 (1,130%)
May 1-31	483	547	65 (13%)
Jun 1-30	314	313	-1 (0%)
Jul 1-31	207	280	73 (35%)
Aug 1-31	234	303	69 (29%)
Sep 1-30	229	314	85 (37%)
Oct 1-31	199	331	131 (66%)
Nov 1-11	132	357	224 (169%)
Nov 12-30	117	372	255 (217%)
Dec 1-31	612	341	-272 (-44%)
Jan 1-31	3,640	3,213	-426 (-12%)
Feb 1-28	3,202	2,987	-215 (-7%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 39: Monthly Averages of Simulated San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	155	740	585 (378%)
Mar 16-31	195	1,041	847 (435%)
Apr 1-15	98	918	819 (833%)
Apr 16-30	104	811	707 (681%)
May 1-31	77	337	260 (337%)
Jun 1-30	101	202	101 (100%)
Jul 1-31	151	226	75 (50%)
Aug 1-31	176	255	79 (45%)
Sep 1-30	177	277	101 (57%)
Oct 1-31	125	263	138 (110%)
Nov 1-11	70	286	215 (307%)
Nov 12-30	76	323	248 (327%)
Dec 1-31	105	151	45 (43%)
Jan 1-31	193	168	-25 (-13%)
Feb 1-28	1,154	926	-228 (-20%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 40: Monthly Averages of Simulated San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	116	695	579 (499%)
Mar 16-31	110	883	774 (706%)
Apr 1-15	83	519	436 (527%)
Apr 16-30	104	261	157 (152%)
May 1-31	67	190	123 (183%)
Jun 1-30	109	206	97 (89%)
Jul 1-31	164	238	74 (45%)
Aug 1-31	198	269	71 (36%)
Sep 1-30	175	269	94 (54%)
Oct 1-31	121	252	130 (107%)
Nov 1-11	48	259	211 (436%)
Nov 12-30	47	293	246 (518%)
Dec 1-31	68	112	44 (64%)
Jan 1-31	348	334	-14 (-4%)
Feb 1-28	547	442	-104 (-19%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 41: Monthly Averages of Simulated San Joaquin River Above Merced Confluence (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	2,663	2,877	213 (8%)
Mar 16-31	2,732	3,253	520 (19%)
Apr 1-15	2,336	2,871	536 (23%)
Apr 16-30	2,227	2,637	410 (18%)
May 1-31	2,098	2,026	-72 (-3%)
Jun 1-30	1,631	1,599	-33 (-2%)
Jul 1-31	1,480	1,504	24 (2%)
Aug 1-31	588	660	72 (12%)
Sep 1-30	548	639	90 (16%)
Oct 1-31	553	681	128 (23%)
Nov 1-11	537	702	164 (31%)
Nov 12-30	566	803	237 (42%)
Dec 1-31	1,089	1,007	-82 (-8%)
Jan 1-31	2,042	1,917	-126 (-6%)
Feb 1-28	2,692	2,487	-206 (-8%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 42: Monthly Averages of Simulated San Joaquin River Above Merced Confluence (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	6,223	5,763	-459 (-7%)
Mar 16-31	6,529	6,596	67 (1%)
Apr 1-15	5,958	5,970	12 (0%)
Apr 16-30	5,762	5,631	-130 (-2%)
May 1-31	5,334	4,784	-550 (-10%)
Jun 1-30	4,030	3,798	-232 (-6%)
Jul 1-31	3,579	3,502	-77 (-2%)
Aug 1-31	814	884	70 (9%)
Sep 1-30	827	913	86 (10%)
Oct 1-31	887	1,007	120 (14%)
Nov 1-11	882	957	75 (9%)
Nov 12-30	999	1,210	211 (21%)
Dec 1-31	2,174	1,994	-179 (-8%)
Jan 1-31	2,385	2,294	-90 (-4%)
Feb 1-28	3,638	3,394	-244 (-7%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 43: Monthly Averages of Simulated San Joaquin River Above Merced Confluence (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1,423	1,939	515 (36%)
Mar 16-31	1,228	1,829	601 (49%)
Apr 1-15	694	1,805	1,110 (160%)
Apr 16-30	501	1,653	1,151 (230%)
May 1-31	823	910	86 (10%)
Jun 1-30	644	640	-4 (-1%)
Jul 1-31	516	590	74 (14%)
Aug 1-31	567	635	68 (12%)
Sep 1-30	498	582	84 (17%)
Oct 1-31	569	698	130 (23%)
Nov 1-11	548	768	220 (40%)
Nov 12-30	459	716	256 (56%)
Dec 1-31	1,012	764	-248 (-25%)
Jan 1-31	4,490	4,069	-421 (-9%)
Feb 1-28	4,206	3,993	-213 (-5%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 44: Monthly Averages of Simulated San Joaquin River Above Merced Confluence (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	686	1,254	568 (83%)
Mar 16-31	725	1,567	842 (116%)
Apr 1-15	477	1,299	822 (172%)
Apr 16-30	474	1,192	718 (151%)
May 1-31	348	619	271 (78%)
Jun 1-30	339	441	101 (30%)
Jul 1-31	399	475	76 (19%)
Aug 1-31	431	509	79 (18%)
Sep 1-30	380	480	100 (26%)
Oct 1-31	338	475	137 (40%)
Nov 1-11	329	540	211 (64%)
Nov 12-30	366	616	250 (68%)
Dec 1-31	423	473	50 (12%)
Jan 1-31	576	555	-22 (-4%)
Feb 1-28	1,639	1,409	-230 (-14%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 45: Monthly Averages of Simulated San Joaquin River Above Merced Confluence (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	581	1,143	561 (97%)
Mar 16-31	571	1,349	778 (136%)
Apr 1-15	411	866	455 (111%)
Apr 16-30	400	564	164 (41%)
May 1-31	292	416	124 (42%)
Jun 1-30	331	428	98 (29%)
Jul 1-31	383	457	75 (20%)
Aug 1-31	436	506	71 (16%)
Sep 1-30	354	447	93 (26%)
Oct 1-31	264	393	129 (49%)
Nov 1-11	228	434	206 (90%)
Nov 12-30	196	444	248 (126%)
Dec 1-31	215	263	48 (22%)
Jan 1-31	807	795	-12 (-2%)
Feb 1-28	916	806	-109 (-12%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 46: Monthly Averages of Simulated Chowchilla Bypass Diversion Flow (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	738	632	-106 (-14%)
Mar 16-31	726	718	-7 (-1%)
Apr 1-15	815	796	-19 (-2%)
Apr 16-30	881	803	-79 (-9%)
May 1-31	898	640	-258 (-29%)
Jun 1-30	774	655	-119 (-15%)
Jul 1-31	552	545	-7 (-1%)
Aug 1-31	1	1	1 (103%)
Sep 1-30	0	1	1 (365%)
Oct 1-31	8	3	-5 (-65%)
Nov 1-11	1	10	8 (643%)
Nov 12-30	28	21	-7 (-26%)
Dec 1-31	288	159	-129 (-45%)
Jan 1-31	642	535	-106 (-17%)
Feb 1-28	818	544	-274 (-33%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 47: Monthly Averages of Simulated Chowchilla Bypass Diversion Flow (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	2,155	1,853	-303 (-14%)
Mar 16-31	2,132	2,072	-60 (-3%)
Apr 1-15	2,444	2,278	-166 (-7%)
Apr 16-30	2,644	2,332	-312 (-12%)
May 1-31	2,564	1,915	-649 (-25%)
Jun 1-30	2,303	1,954	-349 (-15%)
Jul 1-31	1,655	1,633	-22 (-1%)
Aug 1-31	2	2	1 (38%)
Sep 1-30	0	1	1 (287%)
Oct 1-31	24	7	-17 (-72%)
Nov 1-11	4	25	22 (605%)
Nov 12-30	80	57	-23 (-29%)
Dec 1-31	670	455	-215 (-32%)
Jan 1-31	498	424	-74 (-15%)
Feb 1-28	964	600	-364 (-38%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 48: Monthly Averages of Simulated Chowchilla Bypass Diversion Flow (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	92	62	-30 (-32%)
Mar 16-31	71	122	51 (72%)
Apr 1-15	1	169	168 (31,642%)
Apr 16-30	1	117	117 (22,595%)
May 1-31	207	6	-202 (-97%)
Jun 1-30	29	13	-16 (-54%)
Jul 1-31	0	1	1 (536%)
Aug 1-31	0	1	1 (547%)
Sep 1-30	0	1	1 (597%)
Oct 1-31	0	1	1 (622%)
Nov 1-11	0	1	1 (957%)
Nov 12-30	0	1	1 (871%)
Dec 1-31	317	3	-314 (-99%)
Jan 1-31	2,276	1,885	-391 (-17%)
Feb 1-28	1,441	1,159	-281 (-20%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 49: Monthly Averages of Simulated Chowchilla Bypass Diversion Flow (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	0	3	2 (681%)
Mar 16-31	1	8	7 (1,389%)
Apr 1-15	0	3	3 (1,384%)
Apr 16-30	0	3	2 (2,871%)
May 1-31	0	1	1 (704%)
Jun 1-30	0	1	1 (678%)
Jul 1-31	0	1	1 (574%)
Aug 1-31	0	1	1 (313%)
Sep 1-30	0	1	1 (323%)
Oct 1-31	0	1	1 (729%)
Nov 1-11	0	1	1 (2,624%)
Nov 12-30	0	1	1 (1,104%)
Dec 1-31	0	0	0 (179%)
Jan 1-31	2	0	-1 (-72%)
Feb 1-28	669	393	-276 (-41%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 50: Monthly Averages of Simulated Chowchilla Bypass Diversion Flow (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	0	3	2 (1,503%)
Mar 16-31	0	3	3 (952%)
Apr 1-15	0	2	2 (1,815%)
Apr 16-30	0	1	1 (1,227%)
May 1-31	0	1	1 (531%)
Jun 1-30	0	1	1 (1,450%)
Jul 1-31	0	1	1 (655%)
Aug 1-31	0	1	1 (603%)
Sep 1-30	0	1	1 (431%)
Oct 1-31	0	1	1 (2,260%)
Nov 1-11	0	1	1 (1,775%)
Nov 12-30	0	1	1 (1,254%)
Dec 1-31	0	0	0 (213%)
Jan 1-31	6	6	0 (0%)
Feb 1-28	137	18	-119 (-87%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 51: Monthly Averages of Simulated Eastside Bypass Flow After Sand Slough Diversion (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1,412	1,688	276 (20%)
Mar 16-31	1,466	1,998	533 (36%)
Apr 1-15	1,475	2,002	527 (36%)
Apr 16-30	1,603	1,982	379 (24%)
May 1-31	1,548	1,454	-94 (-6%)
Jun 1-30	1,189	1,148	-41 (-3%)
Jul 1-31	955	997	42 (4%)
Aug 1-31	152	225	73 (48%)
Sep 1-30	146	238	92 (63%)
Oct 1-31	139	265	126 (91%)
Nov 1-11	110	300	191 (174%)
Nov 12-30	196	423	227 (116%)
Dec 1-31	611	506	-105 (-17%)
Jan 1-31	1,184	1,051	-133 (-11%)
Feb 1-28	1,506	1,303	-203 (-13%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 52: Monthly Averages of Simulated Eastside Bypass Flow After Sand Slough Diversion (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	3,995	3,661	-334 (-8%)
Mar 16-31	4,120	4,195	75 (2%)
Apr 1-15	4,345	4,343	-2 (0%)
Apr 16-30	4,773	4,617	-156 (-3%)
May 1-31	4,358	3,800	-559 (-13%)
Jun 1-30	3,334	3,072	-262 (-8%)
Jul 1-31	2,627	2,606	-20 (-1%)
Aug 1-31	171	241	70 (41%)
Sep 1-30	166	253	87 (53%)
Oct 1-31	237	345	108 (46%)
Nov 1-11	273	405	132 (48%)
Nov 12-30	519	714	195 (38%)
Dec 1-31	1,467	1,270	-197 (-13%)
Jan 1-31	1,381	1,293	-88 (-6%)
Feb 1-28	1,710	1,470	-240 (-14%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 53: Monthly Averages of Simulated Eastside Bypass Flow After Sand Slough Diversion (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	325	849	523 (161%)
Mar 16-31	346	1,000	653 (189%)
Apr 1-15	81	1,232	1,151 (1,422%)
Apr 16-30	3	1,100	1,097 (38,417%)
May 1-31	401	431	30 (8%)
Jun 1-30	237	243	6 (3%)
Jul 1-31	134	206	72 (54%)
Aug 1-31	155	224	69 (45%)
Sep 1-30	152	238	86 (57%)
Oct 1-31	93	228	134 (144%)
Nov 1-11	23	253	230 (994%)
Nov 12-30	30	279	250 (836%)
Dec 1-31	478	164	-314 (-66%)
Jan 1-31	3,233	2,789	-444 (-14%)
Feb 1-28	2,810	2,593	-217 (-8%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 54: Monthly Averages of Simulated Eastside Bypass Flow After Sand Slough Diversion (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	33	644	611 (1,856%)
Mar 16-31	55	907	852 (1,545%)
Apr 1-15	15	829	814 (5,511%)
Apr 16-30	14	700	687 (5,073%)
May 1-31	19	261	242 (1,301%)
Jun 1-30	56	155	99 (177%)
Jul 1-31	104	177	74 (71%)
Aug 1-31	126	206	80 (63%)
Sep 1-30	122	224	102 (83%)
Oct 1-31	78	218	140 (180%)
Nov 1-11	21	242	221 (1,037%)
Nov 12-30	20	262	242 (1,195%)
Dec 1-31	37	75	39 (105%)
Jan 1-31	82	52	-31 (-37%)
Feb 1-28	1,027	795	-232 (-23%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 55: Monthly Averages of Simulated Eastside Bypass Flow After Sand Slough Diversion (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	18	622	604 (3,335%)
Mar 16-31	31	793	762 (2,441%)
Apr 1-15	31	436	405 (1,317%)
Apr 16-30	37	185	148 (404%)
May 1-31	34	155	121 (360%)
Jun 1-30	69	165	96 (139%)
Jul 1-31	124	196	73 (59%)
Aug 1-31	151	223	72 (47%)
Sep 1-30	136	231	95 (70%)
Oct 1-31	90	222	132 (147%)
Nov 1-11	23	241	217 (939%)
Nov 12-30	23	263	240 (1,027%)
Dec 1-31	37	74	37 (100%)
Jan 1-31	141	124	-17 (-12%)
Feb 1-28	442	347	-95 (-22%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 56: Monthly Averages of Simulated Eastside Bypass Flow Before San Joquin River Confluence (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1,201	1,470	268 (22%)
Mar 16-31	1,248	1,777	529 (42%)
Apr 1-15	1,233	1,777	544 (44%)
Apr 16-30	1,313	1,737	424 (32%)
May 1-31	1,306	1,296	-10 (-1%)
Jun 1-30	1,004	1,005	1 (0%)
Jul 1-31	841	885	44 (5%)
Aug 1-31	150	222	72 (48%)
Sep 1-30	145	236	91 (62%)
Oct 1-31	135	262	127 (94%)
Nov 1-11	119	293	174 (146%)
Nov 12-30	177	411	234 (132%)
Dec 1-31	503	435	-68 (-13%)
Jan 1-31	940	845	-95 (-10%)
Feb 1-28	1,245	1,089	-156 (-13%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 57: Monthly Averages of Simulated Eastside Bypass Flow Before San Joquin River Confluence (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	3,387	3,069	-318 (-9%)
Mar 16-31	3,454	3,536	82 (2%)
Apr 1-15	3,611	3,659	48 (1%)
Apr 16-30	3,904	3,845	-59 (-2%)
May 1-31	3,663	3,301	-362 (-10%)
Jun 1-30	2,781	2,649	-132 (-5%)
Jul 1-31	2,286	2,270	-16 (-1%)
Aug 1-31	171	241	70 (41%)
Sep 1-30	165	251	86 (52%)
Oct 1-31	224	340	116 (52%)
Nov 1-11	294	390	96 (33%)
Nov 12-30	467	675	209 (45%)
Dec 1-31	1,185	1,057	-128 (-11%)
Jan 1-31	1,147	1,083	-64 (-6%)
Feb 1-28	1,381	1,219	-162 (-12%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 58: Monthly Averages of Simulated Eastside Bypass Flow Before San Joquin River Confluence (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	291	811	520 (179%)
Mar 16-31	372	996	624 (168%)
Apr 1-15	94	1,217	1,123 (1,198%)
Apr 16-30	3	1,132	1,129 (35,930%)
May 1-31	355	454	99 (28%)
Jun 1-30	240	238	-1 (-1%)
Jul 1-31	132	205	73 (55%)
Aug 1-31	152	220	68 (45%)
Sep 1-30	152	237	85 (56%)
Oct 1-31	95	226	131 (138%)
Nov 1-11	27	250	223 (839%)
Nov 12-30	27	281	253 (925%)
Dec 1-31	420	165	-255 (-61%)
Jan 1-31	2,459	2,147	-312 (-13%)
Feb 1-28	2,282	2,142	-140 (-6%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 59: Monthly Averages of Simulated Eastside Bypass Flow Before San Joquin River Confluence (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	32	615	583 (1,816%)
Mar 16-31	52	896	844 (1,623%)
Apr 1-15	16	833	816 (5,035%)
Apr 16-30	13	717	705 (5,543%)
May 1-31	17	275	258 (1,531%)
Jun 1-30	53	153	100 (190%)
Jul 1-31	103	178	75 (73%)
Aug 1-31	123	202	79 (64%)
Sep 1-30	122	223	100 (82%)
Oct 1-31	79	217	138 (174%)
Nov 1-11	24	238	214 (887%)
Nov 12-30	19	265	246 (1,313%)
Dec 1-31	36	81	45 (124%)
Jan 1-31	72	47	-25 (-35%)
Feb 1-28	876	669	-207 (-24%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 60: Monthly Averages of Simulated Eastside Bypass Flow Before San Joquin River Confluence (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	18	594	576 (3,254%)
Mar 16-31	29	801	771 (2,635%)
Apr 1-15	27	462	434 (1,584%)
Apr 16-30	38	194	156 (411%)
May 1-31	31	153	122 (387%)
Jun 1-30	66	162	96 (147%)
Jul 1-31	123	197	74 (60%)
Aug 1-31	148	219	71 (48%)
Sep 1-30	136	230	94 (69%)
Oct 1-31	92	221	130 (142%)
Nov 1-11	27	236	209 (782%)
Nov 12-30	22	266	244 (1,132%)
Dec 1-31	37	80	43 (118%)
Jan 1-31	133	119	-14 (-11%)
Feb 1-28	426	321	-105 (-25%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 61: Monthly Averages of Simulated Sand Slough Bypass Flow (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	691	1,095	403 (58%)
Mar 16-31	724	1,275	551 (76%)
Apr 1-15	672	1,219	547 (81%)
Apr 16-30	725	1,166	442 (61%)
May 1-31	640	801	161 (25%)
Jun 1-30	450	525	74 (17%)
Jul 1-31	326	388	62 (19%)
Aug 1-31	150	222	72 (48%)
Sep 1-30	145	237	92 (63%)
Oct 1-31	133	262	129 (98%)
Nov 1-11	101	293	193 (192%)
Nov 12-30	178	404	226 (127%)
Dec 1-31	353	363	9 (3%)
Jan 1-31	555	530	-25 (-5%)
Feb 1-28	692	750	58 (8%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 62: Monthly Averages of Simulated Sand Slough Bypass Flow (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1,867	1,912	46 (2%)
Mar 16-31	1,963	2,111	148 (8%)
Apr 1-15	1,936	2,090	154 (8%)
Apr 16-30	2,140	2,269	130 (6%)
May 1-31	1,762	1,848	86 (5%)
Jun 1-30	1,136	1,211	75 (7%)
Jul 1-31	739	781	42 (6%)
Aug 1-31	164	234	70 (43%)
Sep 1-30	165	252	87 (52%)
Oct 1-31	221	339	118 (54%)
Nov 1-11	248	387	138 (56%)
Nov 12-30	467	663	196 (42%)
Dec 1-31	848	861	13 (2%)
Jan 1-31	891	884	-7 (-1%)
Feb 1-28	760	873	113 (15%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 63: Monthly Averages of Simulated Sand Slough Bypass Flow (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	275	799	524 (191%)
Mar 16-31	236	872	636 (269%)
Apr 1-15	79	1,083	1,004 (1,272%)
Apr 16-30	2	950	948 (41,713%)
May 1-31	195	422	227 (116%)
Jun 1-30	206	230	24 (12%)
Jul 1-31	134	205	71 (53%)
Aug 1-31	155	223	68 (44%)
Sep 1-30	151	237	85 (56%)
Oct 1-31	93	227	134 (144%)
Nov 1-11	23	252	229 (1,017%)
Nov 12-30	30	278	248 (829%)
Dec 1-31	236	162	-73 (-31%)
Jan 1-31	1,004	949	-55 (-5%)
Feb 1-28	1,276	1,339	64 (5%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 64: Monthly Averages of Simulated Sand Slough Bypass Flow (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	33	644	612 (1,879%)
Mar 16-31	55	900	845 (1,542%)
Apr 1-15	14	825	811 (5,655%)
Apr 16-30	13	696	682 (5,074%)
May 1-31	19	258	239 (1,288%)
Jun 1-30	56	155	98 (174%)
Jul 1-31	103	177	73 (71%)
Aug 1-31	126	205	79 (63%)
Sep 1-30	122	223	101 (83%)
Oct 1-31	78	218	140 (180%)
Nov 1-11	21	242	221 (1,054%)
Nov 12-30	20	260	240 (1,188%)
Dec 1-31	37	74	38 (103%)
Jan 1-31	83	52	-31 (-37%)
Feb 1-28	421	435	14 (3%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 65: Monthly Averages of Simulated Sand Slough Bypass Flow (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	18	622	604 (3,385%)
Mar 16-31	31	789	758 (2,443%)
Apr 1-15	31	431	400 (1,295%)
Apr 16-30	36	183	147 (403%)
May 1-31	34	154	120 (358%)
Jun 1-30	70	165	95 (137%)
Jul 1-31	124	195	72 (58%)
Aug 1-31	151	222	71 (47%)
Sep 1-30	135	230	95 (70%)
Oct 1-31	90	221	132 (147%)
Nov 1-11	23	240	217 (958%)
Nov 12-30	23	261	238 (1,020%)
Dec 1-31	37	73	36 (98%)
Jan 1-31	136	119	-17 (-13%)
Feb 1-28	321	339	18 (6%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 66: Monthly Averages of Simulated Mariposa Bypass Flow (cfs) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	211	183	-27 (-13%)
Mar 16-31	231	227	-4 (-2%)
Apr 1-15	239	225	-13 (-6%)
Apr 16-30	286	258	-27 (-9%)
May 1-31	253	182	-71 (-28%)
Jun 1-30	171	134	-37 (-22%)
Jul 1-31	166	154	-11 (-7%)
Aug 1-31	1	1	0 (10%)
Sep 1-30	1	1	0 (12%)
Oct 1-31	1	1	0 (17%)
Nov 1-11	1	1	0 (31%)
Nov 12-30	5	4	-1 (-15%)
Dec 1-31	87	63	-24 (-27%)
Jan 1-31	229	196	-33 (-14%)
Feb 1-28	251	201	-50 (-20%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 67: Monthly Averages of Simulated Mariposa Bypass Flow (cfs) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	629	545	-83 (-13%)
Mar 16-31	689	676	-12 (-2%)
Apr 1-15	715	672	-43 (-6%)
Apr 16-30	855	771	-84 (-10%)
May 1-31	735	542	-193 (-26%)
Jun 1-30	512	399	-113 (-22%)
Jul 1-31	494	461	-34 (-7%)
Aug 1-31	1	1	0 (10%)
Sep 1-30	1	1	0 (11%)
Oct 1-31	1	2	0 (13%)
Nov 1-11	1	2	0 (20%)
Nov 12-30	13	10	-3 (-23%)
Dec 1-31	238	179	-59 (-25%)
Jan 1-31	230	205	-25 (-11%)
Feb 1-28	318	234	-84 (-26%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 68: Monthly Averages of Simulated Mariposa Bypass Flow (cfs) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	3	2	-1 (-23%)
Mar 16-31	7	3	-4 (-62%)
Apr 1-15	1	3	2 (346%)
Apr 16-30	0	3	3 (1,458%)
May 1-31	37	2	-36 (-95%)
Jun 1-30	1	1	0 (9%)
Jul 1-31	1	1	0 (10%)
Aug 1-31	1	1	0 (9%)
Sep 1-30	1	1	0 (11%)
Oct 1-31	1	1	0 (19%)
Nov 1-11	1	1	0 (41%)
Nov 12-30	1	1	0 (45%)
Dec 1-31	21	1	-20 (-94%)
Jan 1-31	730	612	-118 (-16%)
Feb 1-28	569	491	-78 (-14%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 69: Monthly Averages of Simulated Mariposa Bypass Flow (cfs) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1	2	1 (132%)
Mar 16-31	1	2	1 (131%)
Apr 1-15	1	2	2 (218%)
Apr 16-30	1	2	1 (218%)
May 1-31	1	1	1 (111%)
Jun 1-30	1	1	0 (28%)
Jul 1-31	1	1	0 (10%)
Aug 1-31	1	1	0 (11%)
Sep 1-30	1	1	0 (14%)
Oct 1-31	1	1	0 (20%)
Nov 1-11	1	1	0 (38%)
Nov 12-30	1	1	0 (43%)
Dec 1-31	1	1	0 (7%)
Jan 1-31	1	1	0 (-3%)
Feb 1-28	103	79	-24 (-24%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 70: Monthly Averages of Simulated Mariposa Bypass Flow (cfs) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (cfs)	Proposed Action (cfs)	Change from No-Action (cfs)
Mar 1-15	1	2	1 (156%)
Mar 16-31	1	2	1 (122%)
Apr 1-15	1	2	1 (111%)
Apr 16-30	1	1	0 (44%)
May 1-31	1	1	1 (71%)
Jun 1-30	1	1	0 (28%)
Jul 1-31	1	1	0 (10%)
Aug 1-31	1	1	0 (9%)
Sep 1-30	1	1	0 (13%)
Oct 1-31	1	1	0 (19%)
Nov 1-11	1	1	0 (36%)
Nov 12-30	1	1	0 (40%)
Dec 1-31	1	1	0 (6%)
Jan 1-31	1	1	0 (-1%)
Feb 1-28	2	2	0 (-9%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: cfs = cubic feet per second

Table 71: Monthly Averages of Simulated Temperature at Millerton Release (Head of Reach 1) (deg. F) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	46	46	0 (-1%)
Mar 16-31	46	46	0 (0%)
Apr 1-15	46	46	0 (0%)
Apr 16-30	47	47	0 (1%)
May 1-31	48	48	0 (1%)
Jun 1-30	49	50	1 (1%)
Jul 1-31	51	51	1 (2%)
Aug 1-31	51	53	1 (2%)
Sep 1-30	52	54	2 (4%)
Oct 1-31	53	57	4 (7%)
Nov 1-11	54	58	4 (8%)
Nov 12-30	55	58	3 (6%)
Dec 1-31	53	54	1 (1%)
Jan 1-31	47	47	0 (0%)
Feb 1-28	46	46	0 (-1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second, TAF = thousand acre-feet

Key: Deg. = degree, F = Fahrenheit

Table 72: Monthly Averages of Simulated Temperature at Millerton Release (Head of Reach 1) (deg. F) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	45	45	0 (-1%)
Mar 16-31	45	45	0 (-1%)
Apr 1-15	46	46	0 (0%)
Apr 16-30	47	47	0 (-1%)
May 1-31	48	48	0 (-1%)
Jun 1-30	50	50	0 (0%)
Jul 1-31	53	53	0 (0%)
Aug 1-31	53	54	0 (0%)
Sep 1-30	54	54	1 (1%)
Oct 1-31	54	56	1 (2%)
Nov 1-11	55	57	2 (4%)
Nov 12-30	55	57	3 (5%)
Dec 1-31	54	55	1 (1%)
Jan 1-31	48	48	0 (-1%)
Feb 1-28	46	46	-1 (-1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 73: Monthly Averages of Simulated Temperature at Millerton Release (Head of Reach 1) (deg. F) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	46	46	0 (0%)
Mar 16-31	46	46	0 (0%)
Apr 1-15	47	47	0 (1%)
Apr 16-30	47	48	1 (2%)
May 1-31	48	49	1 (2%)
Jun 1-30	49	50	1 (2%)
Jul 1-31	50	51	1 (2%)
Aug 1-31	51	53	1 (3%)
Sep 1-30	52	54	2 (4%)
Oct 1-31	53	57	4 (7%)
Nov 1-11	54	59	5 (9%)
Nov 12-30	55	58	3 (5%)
Dec 1-31	54	54	1 (1%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	46	46	0 (-1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 74: Monthly Averages of Simulated Temperature at Millerton Release (Head of Reach 1) (deg. F) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	46	46	0 (-1%)
Mar 16-31	46	46	0 (0%)
Apr 1-15	47	47	0 (0%)
Apr 16-30	47	48	1 (1%)
May 1-31	48	49	1 (2%)
Jun 1-30	49	50	1 (3%)
Jul 1-31	50	51	2 (3%)
Aug 1-31	50	52	2 (4%)
Sep 1-30	51	54	3 (6%)
Oct 1-31	53	58	5 (9%)
Nov 1-11	54	59	5 (10%)
Nov 12-30	55	58	3 (6%)
Dec 1-31	53	54	1 (2%)
Jan 1-31	47	47	0 (0%)
Feb 1-28	46	46	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 75: Monthly Averages of Simulated Temperature at Millerton Release (Head of Reach 1) (deg. F) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	46	46	0 (-1%)
Mar 16-31	47	46	0 (0%)
Apr 1-15	47	47	0 (0%)
Apr 16-30	47	47	0 (1%)
May 1-31	48	48	0 (1%)
Jun 1-30	48	49	0 (1%)
Jul 1-31	49	50	1 (2%)
Aug 1-31	50	51	2 (3%)
Sep 1-30	50	53	3 (6%)
Oct 1-31	52	57	6 (11%)
Nov 1-11	53	59	6 (12%)
Nov 12-30	54	58	4 (7%)
Dec 1-31	52	53	1 (2%)
Jan 1-31	47	47	0 (1%)
Feb 1-28	45	45	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 76: Monthly Averages of Simulated Temperature at San Joaquin River At Gravelly Ford (Head of Reach 2A) (deg. F) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	57	52	-5 (-8%)
Mar 16-31	60	53	-7 (-11%)
Apr 1-15	63	55	-8 (-12%)
Apr 16-30	64	58	-7 (-11%)
May 1-31	68	64	-4 (-6%)
Jun 1-30	73	69	-3 (-4%)
Jul 1-31	78	75	-4 (-4%)
Aug 1-31	80	76	-4 (-5%)
Sep 1-30	76	72	-5 (-6%)
Oct 1-31	69	65	-4 (-6%)
Nov 1-11	62	60	-2 (-4%)
Nov 12-30	56	56	0 (1%)
Dec 1-31	49	50	1 (2%)
Jan 1-31	47	48	0 (0%)
Feb 1-28	52	51	-1 (-2%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second, TAF = thousand acre-feet

Key: Deg. = degree, F = Fahrenheit

Table 77: Monthly Averages of Simulated Temperature at San Joaquin River At Gravelly Ford (Head of Reach 2A) (deg. F) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	51	51	-1 (-1%)
Mar 16-31	54	52	-2 (-3%)
Apr 1-15	54	52	-1 (-3%)
Apr 16-30	55	54	-1 (-3%)
May 1-31	57	56	0 (-1%)
Jun 1-30	61	60	-2 (-3%)
Jul 1-31	70	68	-2 (-3%)
Aug 1-31	80	76	-3 (-4%)
Sep 1-30	76	72	-4 (-6%)
Oct 1-31	69	64	-4 (-6%)
Nov 1-11	62	59	-3 (-5%)
Nov 12-30	56	56	0 (-1%)
Dec 1-31	50	51	0 (1%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	52	51	-1 (-2%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 78: Monthly Averages of Simulated Temperature at San Joaquin River At Gravelly Ford (Head of Reach 2A) (deg. F) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	58	53	-6 (-10%)
Mar 16-31	61	53	-8 (-13%)
Apr 1-15	64	54	-10 (-16%)
Apr 16-30	67	56	-11 (-16%)
May 1-31	70	66	-4 (-6%)
Jun 1-30	77	74	-3 (-4%)
Jul 1-31	83	79	-4 (-5%)
Aug 1-31	81	77	-4 (-5%)
Sep 1-30	78	73	-5 (-6%)
Oct 1-31	69	65	-4 (-6%)
Nov 1-11	61	59	-1 (-2%)
Nov 12-30	55	56	1 (2%)
Dec 1-31	50	51	1 (2%)
Jan 1-31	47	47	0 (0%)
Feb 1-28	51	51	-1 (-1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 79: Monthly Averages of Simulated Temperature at San Joaquin River At Gravelly Ford (Head of Reach 2A) (deg. F) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	59	52	-7 (-12%)
Mar 16-31	62	53	-8 (-14%)
Apr 1-15	68	56	-12 (-17%)
Apr 16-30	69	58	-11 (-16%)
May 1-31	74	67	-7 (-9%)
Jun 1-30	79	74	-5 (-6%)
Jul 1-31	82	78	-4 (-5%)
Aug 1-31	80	76	-4 (-5%)
Sep 1-30	76	72	-4 (-6%)
Oct 1-31	69	65	-4 (-6%)
Nov 1-11	62	60	-2 (-3%)
Nov 12-30	57	57	0 (1%)
Dec 1-31	49	50	1 (2%)
Jan 1-31	47	48	0 (0%)
Feb 1-28	51	50	-1 (-2%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 80: Monthly Averages of Simulated Temperature at San Joaquin River At Gravelly Ford (Head of Reach 2A) (deg. F) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	61	53	-8 (-13%)
Mar 16-31	65	54	-11 (-16%)
Apr 1-15	69	60	-10 (-14%)
Apr 16-30	71	65	-6 (-9%)
May 1-31	74	69	-5 (-7%)
Jun 1-30	78	74	-4 (-6%)
Jul 1-31	82	77	-4 (-5%)
Aug 1-31	81	77	-4 (-5%)
Sep 1-30	76	72	-5 (-6%)
Oct 1-31	70	66	-5 (-7%)
Nov 1-11	62	60	-2 (-3%)
Nov 12-30	55	56	1 (2%)
Dec 1-31	48	49	1 (3%)
Jan 1-31	48	48	0 (1%)
Feb 1-28	53	52	-1 (-2%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 81: Monthly Averages of Simulated Temperature at San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (deg. F) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	60	55	-5 (-8%)
Mar 16-31	63	57	-6 (-10%)
Apr 1-15	67	60	-7 (-10%)
Apr 16-30	70	64	-6 (-9%)
May 1-31	73	70	-3 (-4%)
Jun 1-30	76	75	-2 (-2%)
Jul 1-31	81	80	-2 (-2%)
Aug 1-31	83	81	-2 (-2%)
Sep 1-30	79	76	-3 (-4%)
Oct 1-31	71	68	-4 (-5%)
Nov 1-11	63	61	-3 (-4%)
Nov 12-30	57	56	-1 (-1%)
Dec 1-31	49	50	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	55	53	-1 (-2%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second, TAF = thousand acre-feet

Key: Deg. = degree, F = Fahrenheit

Table 82: Monthly Averages of Simulated Temperature at San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (deg. F) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	56	55	0 (-1%)
Mar 16-31	60	58	-2 (-3%)
Apr 1-15	62	61	-1 (-2%)
Apr 16-30	66	65	-1 (-2%)
May 1-31	68	67	-1 (-1%)
Jun 1-30	68	67	-1 (-1%)
Jul 1-31	75	73	-1 (-2%)
Aug 1-31	83	81	-2 (-2%)
Sep 1-30	79	76	-3 (-3%)
Oct 1-31	71	67	-3 (-5%)
Nov 1-11	64	61	-3 (-5%)
Nov 12-30	57	56	-1 (-2%)
Dec 1-31	50	50	0 (0%)
Jan 1-31	49	49	0 (0%)
Feb 1-28	55	54	-1 (-3%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 83: Monthly Averages of Simulated Temperature at San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (deg. F) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	61	55	-6 (-9%)
Mar 16-31	64	56	-8 (-12%)
Apr 1-15	67	57	-10 (-15%)
Apr 16-30	70	59	-10 (-15%)
May 1-31	74	70	-3 (-4%)
Jun 1-30	80	79	-1 (-1%)
Jul 1-31	85	83	-2 (-2%)
Aug 1-31	84	82	-2 (-2%)
Sep 1-30	80	77	-3 (-4%)
Oct 1-31	71	67	-3 (-5%)
Nov 1-11	62	60	-2 (-3%)
Nov 12-30	56	56	0 (0%)
Dec 1-31	50	51	0 (1%)
Jan 1-31	48	48	0 (1%)
Feb 1-28	55	54	-1 (-2%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 84: Monthly Averages of Simulated Temperature at San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (deg. F) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	61	54	-7 (-11%)
Mar 16-31	64	56	-8 (-13%)
Apr 1-15	70	60	-11 (-15%)
Apr 16-30	71	62	-10 (-14%)
May 1-31	76	71	-5 (-7%)
Jun 1-30	81	79	-2 (-3%)
Jul 1-31	85	83	-2 (-2%)
Aug 1-31	83	81	-2 (-3%)
Sep 1-30	79	76	-3 (-4%)
Oct 1-31	71	68	-3 (-5%)
Nov 1-11	64	61	-3 (-4%)
Nov 12-30	58	57	-1 (-1%)
Dec 1-31	49	49	0 (1%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	53	52	-1 (-2%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 85: Monthly Averages of Simulated Temperature at San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (deg. F) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	64	56	-8 (-13%)
Mar 16-31	68	58	-10 (-15%)
Apr 1-15	72	64	-8 (-11%)
Apr 16-30	73	69	-5 (-6%)
May 1-31	77	74	-3 (-4%)
Jun 1-30	80	78	-2 (-3%)
Jul 1-31	84	82	-2 (-2%)
Aug 1-31	83	81	-2 (-3%)
Sep 1-30	79	76	-3 (-4%)
Oct 1-31	73	69	-4 (-6%)
Nov 1-11	63	61	-2 (-4%)
Nov 12-30	56	55	0 (0%)
Dec 1-31	49	49	0 (1%)
Jan 1-31	49	49	0 (0%)
Feb 1-28	55	54	-1 (-3%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 86: Monthly Averages of Simulated Temperature at San Joaquin River Below Mendota Pool (Head of Reach 3) (deg. F) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	58	57	-1 (-2%)
Mar 16-31	62	59	-3 (-6%)
Apr 1-15	65	62	-4 (-6%)
Apr 16-30	66	64	-2 (-3%)
May 1-31	69	69	0 (0%)
Jun 1-30	74	74	0 (1%)
Jul 1-31	78	79	0 (0%)
Aug 1-31	79	80	0 (1%)
Sep 1-30	75	76	1 (1%)
Oct 1-31	67	67	1 (1%)
Nov 1-11	59	60	1 (1%)
Nov 12-30	54	55	1 (2%)
Dec 1-31	47	47	0 (0%)
Jan 1-31	47	47	0 (0%)
Feb 1-28	53	53	0 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second, TAF = thousand acre-feet

Key: Deg. = degree, F = Fahrenheit

Table 87: Monthly Averages of Simulated Temperature at San Joaquin River Below Mendota Pool (Head of Reach 3) (deg. F) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	56	55	0 (-1%)
Mar 16-31	59	57	-1 (-2%)
Apr 1-15	59	58	-1 (-2%)
Apr 16-30	61	60	0 (-1%)
May 1-31	64	63	0 (-1%)
Jun 1-30	68	68	0 (-1%)
Jul 1-31	75	75	0 (0%)
Aug 1-31	79	79	0 (1%)
Sep 1-30	75	75	1 (1%)
Oct 1-31	66	67	1 (1%)
Nov 1-11	60	60	0 (1%)
Nov 12-30	54	55	1 (1%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	47	47	0 (0%)
Feb 1-28	53	53	0 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 88: Monthly Averages of Simulated Temperature at San Joaquin River Below Mendota Pool (Head of Reach 3) (deg. F) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	58	57	-1 (-2%)
Mar 16-31	63	59	-4 (-7%)
Apr 1-15	66	60	-7 (-10%)
Apr 16-30	68	62	-6 (-8%)
May 1-31	70	70	0 (0%)
Jun 1-30	77	77	1 (1%)
Jul 1-31	81	81	0 (1%)
Aug 1-31	79	80	0 (1%)
Sep 1-30	76	76	1 (1%)
Oct 1-31	66	67	1 (1%)
Nov 1-11	58	59	1 (1%)
Nov 12-30	54	55	1 (2%)
Dec 1-31	49	49	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	52	53	0 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 89: Monthly Averages of Simulated Temperature at San Joaquin River Below Mendota Pool (Head of Reach 3) (deg. F) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	58	57	-2 (-3%)
Mar 16-31	63	59	-5 (-8%)
Apr 1-15	69	63	-6 (-8%)
Apr 16-30	69	65	-4 (-5%)
May 1-31	73	72	0 (0%)
Jun 1-30	77	78	1 (1%)
Jul 1-31	80	80	1 (1%)
Aug 1-31	78	79	1 (1%)
Sep 1-30	76	76	0 (1%)
Oct 1-31	67	68	1 (1%)
Nov 1-11	60	61	1 (1%)
Nov 12-30	55	56	1 (2%)
Dec 1-31	47	47	0 (0%)
Jan 1-31	47	47	0 (0%)
Feb 1-28	52	53	0 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 90: Monthly Averages of Simulated Temperature at San Joaquin River Below Mendota Pool (Head of Reach 3) (deg. F) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	61	58	-3 (-4%)
Mar 16-31	65	61	-4 (-7%)
Apr 1-15	70	67	-2 (-4%)
Apr 16-30	70	70	0 (1%)
May 1-31	72	73	1 (1%)
Jun 1-30	76	77	1 (1%)
Jul 1-31	80	81	0 (1%)
Aug 1-31	80	80	0 (1%)
Sep 1-30	76	76	0 (1%)
Oct 1-31	69	69	0 (1%)
Nov 1-11	59	60	1 (1%)
Nov 12-30	52	54	1 (3%)
Dec 1-31	46	46	0 (0%)
Jan 1-31	47	47	0 (0%)
Feb 1-28	54	55	1 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 91: Monthly Averages of Simulated Temperature at San Joaquin River Below Sack Dam (Head of Reach 4A) (deg. F) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	59	58	-1 (-1%)
Mar 16-31	63	61	-2 (-4%)
Apr 1-15	67	64	-3 (-5%)
Apr 16-30	69	66	-2 (-4%)
May 1-31	72	72	-1 (-1%)
Jun 1-30	77	77	0 (0%)
Jul 1-31	81	81	0 (0%)
Aug 1-31	81	81	0 (0%)
Sep 1-30	76	76	0 (0%)
Oct 1-31	68	69	0 (1%)
Nov 1-11	61	61	0 (0%)
Nov 12-30	54	55	1 (2%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	54	54	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second, TAF = thousand acre-feet

Key: Deg. = degree, F = Fahrenheit

Table 92: Monthly Averages of Simulated Temperature at San Joaquin River Below Sack Dam (Head of Reach 4A) (deg. F) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	56	57	1 (1%)
Mar 16-31	60	59	-1 (-1%)
Apr 1-15	61	60	-1 (-1%)
Apr 16-30	64	63	-1 (-1%)
May 1-31	67	66	0 (-1%)
Jun 1-30	72	71	-1 (-1%)
Jul 1-31	78	78	0 (0%)
Aug 1-31	81	81	0 (0%)
Sep 1-30	71	71	0 (0%)
Oct 1-31	66	67	1 (1%)
Nov 1-11	61	61	0 (0%)
Nov 12-30	54	55	1 (3%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	47	0 (0%)
Feb 1-28	53	54	1 (2%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 93: Monthly Averages of Simulated Temperature at San Joaquin River Below Sack Dam (Head of Reach 4A) (deg. F) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	59	58	0 (0%)
Mar 16-31	63	61	-2 (-2%)
Apr 1-15	68	62	-6 (-8%)
Apr 16-30	70	65	-6 (-8%)
May 1-31	73	72	-1 (-1%)
Jun 1-30	79	79	0 (0%)
Jul 1-31	83	83	0 (0%)
Aug 1-31	81	82	0 (0%)
Sep 1-30	78	78	0 (0%)
Oct 1-31	68	68	0 (0%)
Nov 1-11	60	60	0 (0%)
Nov 12-30	54	55	1 (1%)
Dec 1-31	49	49	0 (0%)
Jan 1-31	47	48	0 (0%)
Feb 1-28	54	53	0 (-1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 94: Monthly Averages of Simulated Temperature at San Joaquin River Below Sack Dam (Head of Reach 4A) (deg. F) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	60	58	-2 (-3%)
Mar 16-31	64	60	-4 (-6%)
Apr 1-15	70	66	-5 (-7%)
Apr 16-30	71	67	-4 (-5%)
May 1-31	76	75	-1 (-2%)
Jun 1-30	80	80	0 (0%)
Jul 1-31	82	83	0 (0%)
Aug 1-31	81	81	0 (0%)
Sep 1-30	78	78	0 (0%)
Oct 1-31	69	69	0 (0%)
Nov 1-11	61	61	0 (0%)
Nov 12-30	56	56	1 (1%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	54	54	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 95: Monthly Averages of Simulated Temperature at San Joaquin River Below Sack Dam (Head of Reach 4A) (deg. F) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	62	60	-3 (-4%)
Mar 16-31	66	62	-4 (-6%)
Apr 1-15	71	68	-3 (-4%)
Apr 16-30	72	72	-1 (-1%)
May 1-31	76	75	0 (-1%)
Jun 1-30	79	79	0 (0%)
Jul 1-31	82	83	0 (0%)
Aug 1-31	82	82	0 (0%)
Sep 1-30	77	78	0 (0%)
Oct 1-31	70	70	0 (0%)
Nov 1-11	61	61	0 (0%)
Nov 12-30	53	54	1 (1%)
Dec 1-31	47	47	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	55	55	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 96: Monthly Averages of Simulated Temperature at San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (deg. F) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	62	62	0 (-1%)
Mar 16-31	66	65	-1 (-1%)
Apr 1-15	69	68	-1 (-1%)
Apr 16-30	71	70	-1 (-1%)
May 1-31	76	75	0 (0%)
Jun 1-30	81	80	0 (0%)
Jul 1-31	84	84	0 (0%)
Aug 1-31	84	84	0 (0%)
Sep 1-30	79	79	0 (0%)
Oct 1-31	70	70	0 (0%)
Nov 1-11	62	62	0 (0%)
Nov 12-30	55	55	0 (0%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	56	56	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second, TAF = thousand acre-feet

Key: Deg. = degree, F = Fahrenheit

Table 97: Monthly Averages of Simulated Temperature at San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (deg. F) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	60	60	0 (0%)
Mar 16-31	64	64	0 (0%)
Apr 1-15	65	65	0 (0%)
Apr 16-30	69	69	0 (0%)
May 1-31	73	73	0 (0%)
Jun 1-30	78	78	0 (0%)
Jul 1-31	83	83	0 (0%)
Aug 1-31	84	84	0 (0%)
Sep 1-30	78	78	0 (0%)
Oct 1-31	70	70	0 (0%)
Nov 1-11	63	63	0 (0%)
Nov 12-30	56	56	0 (0%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	55	55	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 98: Monthly Averages of Simulated Temperature at San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (deg. F) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	63	62	-1 (-1%)
Mar 16-31	66	66	-1 (-1%)
Apr 1-15	69	67	-1 (-2%)
Apr 16-30	71	70	-1 (-2%)
May 1-31	76	76	0 (0%)
Jun 1-30	82	82	0 (0%)
Jul 1-31	85	85	0 (0%)
Aug 1-31	84	84	0 (0%)
Sep 1-30	80	79	0 (0%)
Oct 1-31	70	69	0 (0%)
Nov 1-11	61	61	0 (0%)
Nov 12-30	55	55	0 (0%)
Dec 1-31	49	49	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	55	55	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 99: Monthly Averages of Simulated Temperature at San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (deg. F) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	62	61	-1 (-1%)
Mar 16-31	66	65	-1 (-2%)
Apr 1-15	71	70	-1 (-2%)
Apr 16-30	72	71	-1 (-1%)
May 1-31	77	77	0 (0%)
Jun 1-30	82	82	0 (0%)
Jul 1-31	85	85	0 (0%)
Aug 1-31	83	83	0 (0%)
Sep 1-30	79	79	0 (0%)
Oct 1-31	70	70	0 (0%)
Nov 1-11	62	62	0 (0%)
Nov 12-30	56	56	0 (0%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	55	55	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 100: Monthly Averages of Simulated Temperature at San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (deg. F) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	64	63	-1 (-1%)
Mar 16-31	68	67	-1 (-2%)
Apr 1-15	72	71	-1 (-1%)
Apr 16-30	73	73	0 (0%)
May 1-31	77	77	0 (0%)
Jun 1-30	81	81	0 (0%)
Jul 1-31	85	84	0 (0%)
Aug 1-31	84	84	0 (0%)
Sep 1-30	79	79	0 (0%)
Oct 1-31	72	72	0 (0%)
Nov 1-11	61	61	0 (0%)
Nov 12-30	54	54	0 (0%)
Dec 1-31	47	47	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	57	57	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 101: Monthly Averages of Simulated Temperature at San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (deg. F) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	61	61	0 (0%)
Mar 16-31	64	64	0 (0%)
Apr 1-15	67	67	0 (0%)
Apr 16-30	69	69	0 (0%)
May 1-31	73	74	0 (0%)
Jun 1-30	79	79	0 (0%)
Jul 1-31	82	82	0 (0%)
Aug 1-31	82	82	0 (0%)
Sep 1-30	77	77	0 (0%)
Oct 1-31	68	68	0 (0%)
Nov 1-11	59	59	0 (0%)
Nov 12-30	53	53	0 (0%)
Dec 1-31	46	46	0 (0%)
Jan 1-31	46	46	0 (0%)
Feb 1-28	54	54	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second, TAF = thousand acre-feet

Key: Deg. = degree, F = Fahrenheit

Table 102: Monthly Averages of Simulated Temperature at San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (deg. F) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	58	59	0 (1%)
Mar 16-31	62	62	0 (0%)
Apr 1-15	62	62	0 (1%)
Apr 16-30	66	66	0 (0%)
May 1-31	70	71	1 (1%)
Jun 1-30	76	76	1 (1%)
Jul 1-31	80	80	0 (0%)
Aug 1-31	82	82	0 (0%)
Sep 1-30	77	77	0 (0%)
Oct 1-31	68	68	0 (0%)
Nov 1-11	61	61	0 (0%)
Nov 12-30	53	53	0 (0%)
Dec 1-31	47	47	0 (0%)
Jan 1-31	46	46	0 (0%)
Feb 1-28	54	54	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 103: Monthly Averages of Simulated Temperature at San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (deg. F) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	62	62	0 (0%)
Mar 16-31	65	65	0 (0%)
Apr 1-15	67	67	0 (0%)
Apr 16-30	69	69	0 (0%)
May 1-31	74	74	0 (0%)
Jun 1-30	80	80	0 (0%)
Jul 1-31	83	83	0 (0%)
Aug 1-31	81	81	0 (0%)
Sep 1-30	77	77	0 (0%)
Oct 1-31	67	67	0 (0%)
Nov 1-11	58	58	0 (0%)
Nov 12-30	52	53	0 (0%)
Dec 1-31	47	47	0 (-1%)
Jan 1-31	46	46	0 (0%)
Feb 1-28	53	53	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 104: Monthly Averages of Simulated Temperature at San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (deg. F) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	61	61	0 (0%)
Mar 16-31	65	65	0 (0%)
Apr 1-15	70	70	0 (0%)
Apr 16-30	71	71	0 (0%)
May 1-31	76	76	0 (0%)
Jun 1-30	80	80	0 (0%)
Jul 1-31	83	83	0 (0%)
Aug 1-31	81	81	0 (0%)
Sep 1-30	77	77	0 (0%)
Oct 1-31	68	68	0 (0%)
Nov 1-11	60	60	0 (0%)
Nov 12-30	54	54	0 (0%)
Dec 1-31	46	46	0 (0%)
Jan 1-31	46	46	0 (0%)
Feb 1-28	54	54	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 105: Monthly Averages of Simulated Temperature at San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (deg. F) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	62	63	0 (0%)
Mar 16-31	66	66	0 (0%)
Apr 1-15	70	70	0 (0%)
Apr 16-30	71	71	0 (0%)
May 1-31	75	75	0 (0%)
Jun 1-30	80	80	0 (0%)
Jul 1-31	83	83	0 (0%)
Aug 1-31	82	82	0 (0%)
Sep 1-30	77	77	0 (0%)
Oct 1-31	69	69	0 (0%)
Nov 1-11	59	59	0 (0%)
Nov 12-30	51	52	0 (0%)
Dec 1-31	45	45	0 (0%)
Jan 1-31	46	46	0 (0%)
Feb 1-28	55	55	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 106: Monthly Averages of Simulated Temperature at San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (deg. F) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	61	61	-1 (-1%)
Mar 16-31	65	64	-1 (-2%)
Apr 1-15	68	67	-1 (-1%)
Apr 16-30	69	69	0 (-1%)
May 1-31	74	74	1 (1%)
Jun 1-30	79	79	0 (0%)
Jul 1-31	83	83	0 (0%)
Aug 1-31	83	83	0 (0%)
Sep 1-30	78	78	0 (0%)
Oct 1-31	69	70	0 (0%)
Nov 1-11	61	61	0 (1%)
Nov 12-30	54	55	1 (1%)
Dec 1-31	47	47	0 (0%)
Jan 1-31	47	47	0 (0%)
Feb 1-28	55	55	1 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second, TAF = thousand acre-feet

Key: Deg. = degree, F = Fahrenheit

Table 107: Monthly Averages of Simulated Temperature at San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (deg. F) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	58	59	0 (0%)
Mar 16-31	62	62	0 (0%)
Apr 1-15	62	62	0 (0%)
Apr 16-30	66	66	0 (0%)
May 1-31	70	70	0 (1%)
Jun 1-30	75	76	0 (0%)
Jul 1-31	80	80	0 (0%)
Aug 1-31	83	83	0 (0%)
Sep 1-30	77	77	0 (0%)
Oct 1-31	69	69	0 (0%)
Nov 1-11	62	62	0 (0%)
Nov 12-30	55	55	0 (1%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	47	47	0 (0%)
Feb 1-28	54	55	1 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 108: Monthly Averages of Simulated Temperature at San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (deg. F) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	62	62	-1 (-1%)
Mar 16-31	65	65	-1 (-1%)
Apr 1-15	68	66	-2 (-3%)
Apr 16-30	70	69	-1 (-2%)
May 1-31	74	75	1 (1%)
Jun 1-30	82	82	0 (0%)
Jul 1-31	85	85	0 (0%)
Aug 1-31	83	83	0 (0%)
Sep 1-30	79	79	0 (0%)
Oct 1-31	69	69	0 (0%)
Nov 1-11	60	60	0 (1%)
Nov 12-30	54	54	0 (1%)
Dec 1-31	49	49	0 (0%)
Jan 1-31	47	47	0 (0%)
Feb 1-28	54	54	1 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 109: Monthly Averages of Simulated Temperature at San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (deg. F) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	62	61	-1 (-2%)
Mar 16-31	65	64	-2 (-3%)
Apr 1-15	71	69	-2 (-2%)
Apr 16-30	71	70	-1 (-2%)
May 1-31	76	77	0 (0%)
Jun 1-30	81	82	0 (1%)
Jul 1-31	85	85	0 (0%)
Aug 1-31	83	83	0 (0%)
Sep 1-30	79	79	0 (0%)
Oct 1-31	70	70	0 (0%)
Nov 1-11	61	61	1 (1%)
Nov 12-30	55	56	1 (1%)
Dec 1-31	47	47	0 (0%)
Jan 1-31	47	48	0 (0%)
Feb 1-28	54	55	1 (2%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 110: Monthly Averages of Simulated Temperature at San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (deg. F) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	64	63	-1 (-1%)
Mar 16-31	68	66	-2 (-3%)
Apr 1-15	72	71	-1 (-1%)
Apr 16-30	73	73	0 (0%)
May 1-31	76	77	1 (1%)
Jun 1-30	80	81	0 (0%)
Jul 1-31	84	84	0 (0%)
Aug 1-31	83	83	0 (0%)
Sep 1-30	78	78	0 (0%)
Oct 1-31	71	71	0 (0%)
Nov 1-11	60	60	1 (1%)
Nov 12-30	53	53	1 (2%)
Dec 1-31	46	46	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	56	57	1 (2%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 111: Monthly Averages of Simulated Temperature at San Joaquin River Above Merced Confluence (deg. F) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	59	60	1 (1%)
Mar 16-31	63	64	1 (1%)
Apr 1-15	66	66	1 (1%)
Apr 16-30	68	69	1 (1%)
May 1-31	73	73	1 (1%)
Jun 1-30	78	78	0 (0%)
Jul 1-31	82	82	0 (0%)
Aug 1-31	81	81	0 (0%)
Sep 1-30	76	77	0 (0%)
Oct 1-31	68	68	0 (1%)
Nov 1-11	59	60	1 (1%)
Nov 12-30	54	54	0 (1%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	54	54	0 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second, TAF = thousand acre-feet

Key: Deg. = degree, F = Fahrenheit

Table 112: Monthly Averages of Simulated Temperature at San Joaquin River Above Merced Confluence (deg. F) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	58	59	0 (0%)
Mar 16-31	62	62	0 (0%)
Apr 1-15	63	63	0 (0%)
Apr 16-30	67	67	0 (0%)
May 1-31	71	72	0 (1%)
Jun 1-30	76	77	0 (0%)
Jul 1-31	80	81	0 (0%)
Aug 1-31	81	81	0 (0%)
Sep 1-30	76	76	0 (0%)
Oct 1-31	67	68	0 (1%)
Nov 1-11	60	61	1 (1%)
Nov 12-30	54	54	0 (1%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	54	54	0 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 113: Monthly Averages of Simulated Temperature at San Joaquin River Above Merced Confluence (deg. F) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	60	61	0 (1%)
Mar 16-31	63	64	1 (1%)
Apr 1-15	66	66	0 (1%)
Apr 16-30	68	68	1 (1%)
May 1-31	73	74	1 (1%)
Jun 1-30	79	79	0 (0%)
Jul 1-31	82	83	0 (0%)
Aug 1-31	81	81	0 (0%)
Sep 1-30	76	77	0 (0%)
Oct 1-31	67	67	0 (1%)
Nov 1-11	58	59	0 (1%)
Nov 12-30	53	54	0 (1%)
Dec 1-31	49	49	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	54	54	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 114: Monthly Averages of Simulated Temperature at San Joaquin River Above Merced Confluence (deg. F) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	59	60	1 (1%)
Mar 16-31	63	64	0 (1%)
Apr 1-15	67	68	1 (1%)
Apr 16-30	69	70	1 (1%)
May 1-31	74	75	1 (1%)
Jun 1-30	79	79	0 (1%)
Jul 1-31	82	82	0 (0%)
Aug 1-31	80	81	0 (0%)
Sep 1-30	77	77	0 (0%)
Oct 1-31	67	68	1 (1%)
Nov 1-11	60	60	1 (1%)
Nov 12-30	54	55	1 (1%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	54	54	0 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 115: Monthly Averages of Simulated Temperature at San Joaquin River Above Merced Confluence (deg. F) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	61	62	1 (2%)
Mar 16-31	64	65	1 (2%)
Apr 1-15	68	69	1 (2%)
Apr 16-30	70	71	1 (1%)
May 1-31	74	74	1 (1%)
Jun 1-30	78	79	0 (0%)
Jul 1-31	82	82	0 (0%)
Aug 1-31	81	82	0 (0%)
Sep 1-30	76	77	0 (0%)
Oct 1-31	69	69	1 (1%)
Nov 1-11	59	59	1 (1%)
Nov 12-30	53	53	0 (1%)
Dec 1-31	47	47	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	55	55	1 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 116: Monthly Averages of Simulated Temperature at San Joaquin River Below Merced Confluence (deg. F) - Restoration All Years

Month	All Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	59	59	1 (1%)
Mar 16-31	62	62	1 (1%)
Apr 1-15	64	65	1 (1%)
Apr 16-30	66	67	1 (2%)
May 1-31	70	71	1 (1%)
Jun 1-30	77	77	0 (0%)
Jul 1-31	81	81	0 (0%)
Aug 1-31	80	80	0 (0%)
Sep 1-30	75	75	0 (0%)
Oct 1-31	65	66	1 (1%)
Nov 1-11	58	59	1 (1%)
Nov 12-30	53	54	1 (1%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	54	54	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second, TAF = thousand acre-feet

Key: Deg. = degree, F = Fahrenheit

Table 117: Monthly Averages of Simulated Temperature at San Joaquin River Below Merced Confluence (deg. F) - Restoration Wet

Month	Restoration Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	58	58	0 (0%)
Mar 16-31	61	61	0 (0%)
Apr 1-15	61	61	0 (0%)
Apr 16-30	64	64	0 (0%)
May 1-31	68	68	0 (0%)
Jun 1-30	74	74	0 (0%)
Jul 1-31	79	79	0 (0%)
Aug 1-31	79	79	0 (0%)
Sep 1-30	73	73	0 (0%)
Oct 1-31	64	64	0 (1%)
Nov 1-11	59	60	1 (1%)
Nov 12-30	54	54	0 (1%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	54	54	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 118: Monthly Averages of Simulated Temperature at San Joaquin River Below Merced Confluence (deg. F) - Restoration Normal-Wet

Month	Restoration Normal-Wet Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	59	59	1 (1%)
Mar 16-31	62	62	1 (1%)
Apr 1-15	64	65	1 (2%)
Apr 16-30	64	66	2 (3%)
May 1-31	70	71	1 (1%)
Jun 1-30	78	79	0 (0%)
Jul 1-31	82	82	0 (0%)
Aug 1-31	80	81	0 (0%)
Sep 1-30	76	76	0 (0%)
Oct 1-31	65	66	0 (1%)
Nov 1-11	58	58	0 (1%)
Nov 12-30	53	54	0 (1%)
Dec 1-31	50	50	0 (0%)
Jan 1-31	49	49	0 (0%)
Feb 1-28	53	53	0 (0%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 119: Monthly Averages of Simulated Temperature at San Joaquin River Below Merced Confluence (deg. F) - Restoration Normal-Dry

Month	Restoration Normal-Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	58	59	1 (2%)
Mar 16-31	62	63	1 (1%)
Apr 1-15	67	68	1 (2%)
Apr 16-30	67	69	2 (2%)
May 1-31	71	73	1 (2%)
Jun 1-30	78	79	1 (1%)
Jul 1-31	81	82	0 (0%)
Aug 1-31	80	80	0 (0%)
Sep 1-30	76	77	0 (0%)
Oct 1-31	66	67	1 (1%)
Nov 1-11	58	59	1 (1%)
Nov 12-30	53	54	1 (1%)
Dec 1-31	48	48	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	54	54	0 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 120: Monthly Averages of Simulated Temperature at San Joaquin River Below Merced Confluence (deg. F) - Restoration Dry

Month	Restoration Dry Year Summary		
	No-Action Alternative (Deg. F)	Proposed Action (Deg. F)	Change from No-Action (Deg. F)
Mar 1-15	60	61	1 (2%)
Mar 16-31	63	64	1 (2%)
Apr 1-15	67	68	1 (2%)
Apr 16-30	68	69	1 (1%)
May 1-31	72	73	1 (1%)
Jun 1-30	78	78	0 (1%)
Jul 1-31	81	81	0 (0%)
Aug 1-31	81	81	0 (0%)
Sep 1-30	76	76	0 (0%)
Oct 1-31	68	68	1 (1%)
Nov 1-11	57	58	1 (2%)
Nov 12-30	52	52	1 (1%)
Dec 1-31	47	47	0 (0%)
Jan 1-31	48	48	0 (0%)
Feb 1-28	55	55	0 (1%)

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

(%) indicates percent change from No-Action Alternative

Key: Deg. = degree, F = Fahrenheit

Table 121: Simulated Millerton Release (Head of Reach 1) (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														102	105
1980	Wet	2395	1773	1889	1884	1561	2287	1069	227	207	161	134	123	118	358	1939
1981	Normal-Dry	153	135	145	160	186	195	225	227	207	161	134	123	118	3568	5052
1982	Wet	1944	2435	3846	4457	4113	2810	440	227	207	646	324	724	3120	290	105
1983	Wet	5206	5451	6491	6993	6102	10279	4885	323	207	161	134	372	2829	102	105
1984	Normal-Wet	156	142	145	160	186	195	225	227	207	161	134	123	118	489	4326
1985	Normal-Dry	123	135	145	160	186	195	225	227	207	161	134	123	118	102	105
1986	Wet	5378	2827	2129	2186	2863	2306	404	227	207	161	134	123	118	102	102
1987	Dry	131	135	145	160	186	195	225	227	207	161	134	123	118	102	105
1988	Dry	122	135	145	160	186	195	225	227	207	161	134	123	118	102	105
1989	Normal-Dry	123	135	145	160	186	195	225	227	207	161	134	123	118	102	105
1990	Dry	123	135	145	160	186	195	225	227	207	161	134	123	118	102	102
1991	Normal-Dry	123	135	145	160	186	195	225	227	207	161	134	123	118	147	404
1992	Dry	122	135	145	160	186	195	225	227	207	161	134	123	118	102	105
1993	Wet	320	600	1382	1681	1528	1431	526	227	207	161	134	123	118	353	2060
1994	Dry	123	135	145	160	186	195	225	227	207	161	134	123	118	130	438
1995	Wet	2836	3201	3611	4087	4534	3347	5903	353	207	161	134	123	118	9083	3562
1996	Normal-Wet	1750	1454	540	581	1956	701	225	227	207	161	134	123	2116	274	3073
1997	Wet	595	181	198	214	1213	212	225	227	207	161	134	123	118	102	125
1998	Wet	1553	2000	2785	3365	4005	5028	4783	227	207	161	134	123	118	102	102
1999	Normal-Wet	135	135	145	160	186	195	225	227	207	161	134	123	118	102	105
2000	Normal-Wet	122	135	145	160	309	218	225	227	207	161	134	123	118	102	105
2001	Normal-Dry	123	135	145	160	186	195	225	227	207	161	134	123	118	102	105
2002	Normal-Dry	123	135	145	160	186	195	225	227	207	161	134	123	118		
	Average	1034	948	1083	1204	1330	1355	940	237	207	182	143	160	454	701	975
	Wet	2528	2309	2791	3108	3240	3462	2279	255	207	222	158	229	832	1311	1012
	Normal-Wet	672	472	504	515	691	621	394	227	207	161	134	123	118	153	476
	Normal-Dry	1363	1454	1849	2040	1866	2691	1360	249	207	166	136	180	728	281	730
	Dry	799	850	1096	1260	1529	1076	1421	253	207	161	134	123	118	1957	1251

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 122: Simulated Millerton Release (Head of Reach 1) (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														132	413
1980	Wet	1647	1308	1503	1675	1712	2126	1138	350	350	364	431	399	158	171	688
1981	Normal-Dry	859	1009	992	832	424	350	350	350	350	364	431	399	158	3186	3912
1982	Wet	1109	1932	3568	3955	2879	2204	506	350	350	364	431	399	2384	147	402
1983	Wet	5124	5874	6518	6753	5288	9783	4870	425	350	364	431	399	1778	132	413
1984	Normal-Wet	855	1152	1475	1313	498	350	350	350	350	364	431	399	158	306	3224
1985	Normal-Dry	859	1009	992	832	424	350	350	350	350	364	431	399	158	132	413
1986	Wet	4476	2246	1783	1893	2519	2115	529	350	350	364	431	399	158	131	402
1987	Dry	859	866	510	350	350	350	350	350	350	364	431	399	158	132	413
1988	Dry	855	866	510	350	350	350	350	350	350	364	431	399	158	132	413
1989	Normal-Dry	859	1009	992	832	424	350	350	350	350	364	431	399	158	132	413
1990	Dry	859	866	510	350	350	350	350	350	350	364	431	399	158	131	402
1991	Normal-Dry	859	1009	992	832	424	350	350	350	350	364	431	399	158	132	413
1992	Dry	855	866	510	350	350	350	350	350	350	364	431	399	158	132	413
1993	Wet	859	1152	1475	1630	1655	2483	616	350	350	364	431	399	158	173	1024
1994	Dry	859	866	510	350	350	350	350	350	350	364	431	399	158	131	539
1995	Wet	3019	3594	3222	3026	2801	2518	5903	455	350	364	431	399	158	8833	2681
1996	Normal-Wet	1691	2005	1740	1313	498	582	350	350	350	364	431	399	158	132	1095
1997	Wet	859	1152	1475	1630	1663	1502	503	350	350	364	431	399	158	132	413
1998	Wet	1687	2252	2596	2776	2805	2753	4785	350	350	364	431	399	158	131	402
1999	Normal-Wet	859	1152	1475	1313	498	350	350	350	350	364	431	399	158	132	413
2000	Normal-Wet	855	1152	1475	1313	498	355	350	350	350	364	431	399	158	132	413
2001	Normal-Dry	859	1009	992	832	424	350	350	350	350	364	431	399	158	132	413
2002	Normal-Dry	859	1009	992	832	424	350	350	350	350	364	431	399	158		
	Average	1412	1537	1601	1536	1200	1347	1048	358	350	364	431	399	325	655	858
	Wet	2347	2439	2768	2917	2665	3185	2356	373	350	364	431	399	639	1231	803
	Normal-Wet	1016	1126	1287	1256	944	937	538	350	350	364	431	399	158	140	468
	Normal-Dry	1823	2088	2219	2220	1784	2863	1447	367	350	364	431	399	516	245	624
	Dry	1291	1555	1535	1493	1379	1440	1544	371	350	364	431	399	158	1880	986

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 123: Simulated San Joaquin River At Gravelly Ford (Head of Reach 2A) (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														80	64
1980	Wet	2438	1763	1757	1765	1409	2024	977	53	73	84	86	38	86	384	2040
1981	Normal-Dry	189	206	94	60	87	70	46	90	82	67	26	50	78	3762	5166
1982	Wet	1990	2541	3952	4324	3984	2644	321	128	130	545	355	482	3160	332	82
1983	Wet	5823	5509	6336	6866	5981	9909	5000	133	18	6	18	352	2822	74	94
1984	Normal-Wet	89	80	27	50	86	71	77	92	92	73	69	78	90	393	4711
1985	Normal-Dry	96	81	66	38	58	44	67	87	77	56	55	66	67	71	63
1986	Wet	5629	3363	2111	2046	2724	2176	277	92	81	96	61	49	78	53	45
1987	Dry	91	108	72	29	57	53	61	77	77	49	58	61	60	69	40
1988	Dry	49	45	39	64	62	38	40	45	54	28	16	26	62	51	42
1989	Normal-Dry	58	52	30	25	43	25	23	24	48	35	28	15	20	29	26
1990	Dry	38	45	24	22	25	8	10	16	25	15	17	9	20	34	65
1991	Normal-Dry	38	287	59	29	26	5	11	21	30	7	17	9	20	506	556
1992	Dry	47	57	30	22	24	5	10	14	17	6	17	9	20	29	31
1993	Wet	414	635	1299	1568	1373	1226	360	14	17	7	17	17	24	543	2050
1994	Dry	38	44	24	22	28	5	10	14	17	6	17	9	20	64	582
1995	Wet	3712	4332	3678	3979	4474	2922	5957	196	21	6	17	9	33	9988	4221
1996	Normal-Wet	1778	1591	498	450	1798	531	11	15	18	6	17	33	2197	300	3961
1997	Wet	576	180	84	79	1016	60	10	14	17	6	17	9	20	35	77
1998	Wet	1747	2266	3339	3369	3980	4707	4866	14	17	6	17	9	20	31	474
1999	Normal-Wet	61	65	96	42	40	20	16	14	17	16	31	25	42	30	36
2000	Normal-Wet	591	126	48	79	170	47	11	17	17	6	17	9	20	42	31
2001	Normal-Dry	67	53	32	38	39	5	12	14	17	6	17	9	20	29	26
2002	Normal-Dry	40	46	24	22	24	10	12	21	19	6	17	9	20		
	Average	1113	1021	1031	1086	1196	1157	791	52	43	49	44	60	391	736	1064
	Wet	2791	2574	2819	2999	3118	3208	2221	80	47	94	74	121	781	1430	1135
	Normal-Wet	754	441	397	400	538	436	215	37	40	31	38	26	43	112	447
	Normal-Dry	1496	1512	1759	1916	1727	2470	1245	59	37	24	31	100	664	386	761
	Dry	956	1096	1029	1135	1383	844	1270	52	22	8	17	10	24	2221	1394

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 124: Simulated San Joaquin River At Gravelly Ford (Head of Reach 2A) (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														107	359
1980	Wet	1691	1276	1370	1538	1558	1863	1042	175	215	283	378	321	130	218	799
1981	Normal-Dry	877	1081	943	750	335	226	171	212	225	266	318	333	123	3377	4041
1982	Wet	1126	2027	3662	3857	2754	2011	383	250	272	298	349	322	2346	151	366
1983	Wet	5659	5949	6385	6636	5174	9405	4978	231	159	205	309	434	1783	101	390
1984	Normal-Wet	783	1063	1340	1239	418	226	202	214	234	272	361	360	135	230	3620
1985	Normal-Dry	813	956	915	729	307	200	192	210	220	256	346	348	112	98	358
1986	Wet	4731	2744	1754	1758	2375	1976	403	214	223	296	353	332	123	79	332
1987	Dry	800	856	458	221	222	209	187	199	219	249	349	344	105	96	335
1988	Dry	763	793	425	256	226	194	165	167	197	228	308	309	107	77	337
1989	Normal-Dry	775	927	879	715	291	180	148	146	190	234	320	298	65	56	321
1990	Dry	755	793	410	213	190	162	136	138	168	214	309	292	65	59	353
1991	Normal-Dry	755	1162	908	719	275	159	137	144	172	206	309	292	65	493	555
1992	Dry	762	805	415	213	189	159	135	136	158	205	309	292	65	56	326
1993	Wet	928	1209	1417	1510	1495	2282	448	136	158	207	309	300	69	383	1006
1994	Dry	756	792	410	213	192	159	135	136	158	205	309	292	65	65	673
1995	Wet	3829	4760	3332	2955	2740	2062	5951	294	164	205	309	292	78	9604	3344
1996	Normal-Wet	1782	2047	1680	1250	359	391	136	137	161	205	309	316	428	174	1991
1997	Wet	801	1121	1345	1494	1502	1329	307	136	158	205	309	292	65	61	351
1998	Wet	1801	2541	3176	2809	2788	2460	4808	136	158	205	309	292	65	57	762
1999	Normal-Wet	766	1067	1408	1230	372	175	141	136	158	215	323	308	87	57	331
2000	Normal-Wet	1305	1129	1360	1268	395	165	137	139	158	205	309	292	65	69	326
2001	Normal-Dry	785	928	881	728	287	159	137	136	158	205	309	292	65	56	321
2002	Normal-Dry	757	921	873	712	273	165	138	143	162	205	309	292	65		
	Average	1470	1606	1554	1435	1075	1144	897	173	185	229	323	315	273	684	939
	Wet	2571	2703	2805	2820	2548	2923	2290	197	189	238	328	323	583	1332	919
	Normal-Wet	1079	1082	1174	1151	810	743	363	159	182	231	330	309	87	100	431
	Normal-Dry	1922	2156	2144	2104	1648	2640	1329	177	179	219	320	337	459	351	645
	Dry	1414	1809	1482	1378	1240	1199	1396	170	164	207	309	293	68	2120	1122

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 125: Simulated San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														25	14
1980	Wet	0	0	208	1012	1159	918	427	10	18	29	36	6	31	323	1230
1981	Normal-Dry	134	152	39	11	37	22	2	35	28	15	0	6	24	12	0
1982	Wet	1069	1221	1064	0	435	1161	242	73	75	285	319	25	21	0	42
1983	Wet	0	0	0	0	0	1244	710	102	0	0	0	42	461	20	40
1984	Normal-Wet	33	30	0	10	31	19	22	37	37	18	15	24	36	321	1335
1985	Normal-Dry	41	26	21	2	4	3	14	33	23	4	2	11	17	17	9
1986	Wet	738	0	0	91	563	625	229	38	26	42	7	0	25	1	0
1987	Dry	35	53	29	0	4	3	7	22	22	4	7	6	5	15	4
1988	Dry	0	1	0	14	14	0	0	0	1	0	0	0	9	8	1
1989	Normal-Dry	8	1	0	0	0	0	0	0	1	0	0	0	0	0	0
1990	Dry	0	1	0	0	0	0	0	0	0	0	0	0	0	0	29
1991	Normal-Dry	0	232	15	0	0	0	0	0	0	0	0	0	0	427	497
1992	Dry	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	Wet	365	568	1229	1266	1214	1075	295	0	0	0	0	0	0	480	1299
1994	Dry	0	1	0	0	0	0	0	0	0	0	0	0	0	20	519
1995	Wet	1043	862	1	0	0	1256	1827	177	0	0	0	0	0	1131	0
1996	Normal-Wet	1229	1221	453	385	714	362	0	0	0	0	0	4	816	247	1218
1997	Wet	289	131	29	24	644	59	0	0	0	0	0	0	0	0	30
1998	Wet	1135	353	11	0	0	335	789	0	0	0	0	0	0	0	417
1999	Normal-Wet	8	10	41	8	0	0	0	0	0	0	0	0	0	0	0
2000	Normal-Wet	553	74	4	25	100	39	0	0	0	0	0	0	0	4	0
2001	Normal-Dry	19	3	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	Normal-Dry	0	1	0	0	0	0	0	0	0	0	0	0	0		
	Average	291	215	137	124	214	310	198	23	10	17	17	5	63	133	291
	Wet	580	392	318	299	502	834	565	50	15	45	45	9	67	244	382
	Normal-Wet	181	47	52	213	382	204	88	9	8	7	8	3	10	69	254
	Normal-Dry	138	214	282	278	286	526	242	29	7	4	5	11	106	215	426
	Dry	339	359	255	258	372	478	424	35	0	0	0	0	0	408	371

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 126: Simulated San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														51	302
1980	Wet	0	0	212	1013	1233	918	481	120	160	227	322	266	78	163	688
1981	Normal-Dry	814	1010	886	700	283	171	116	157	169	211	261	279	69	1	0
1982	Wet	1001	1221	1064	0	435	1150	304	194	217	243	293	118	37	16	307
1983	Wet	0	0	0	0	0	1184	716	178	104	105	61	82	311	45	330
1984	Normal-Wet	720	1002	1194	1062	368	171	147	159	179	217	305	306	82	171	1228
1985	Normal-Dry	751	899	860	677	254	145	138	155	165	200	290	294	63	42	299
1986	Wet	680	0	0	91	563	627	354	159	168	240	297	278	70	24	274
1987	Dry	737	803	409	167	167	154	132	144	164	193	292	290	52	40	276
1988	Dry	701	741	375	200	172	139	111	112	141	173	251	255	54	34	278
1989	Normal-Dry	713	870	822	663	239	126	94	91	135	179	264	245	28	16	262
1990	Dry	693	741	360	159	135	108	81	83	112	158	252	238	28	15	294
1991	Normal-Dry	693	1089	853	668	222	105	82	89	117	151	252	238	28	415	492
1992	Dry	699	752	366	159	134	105	81	81	103	149	252	238	28	16	267
1993	Wet	870	1143	1323	1252	1283	1216	358	81	103	151	252	246	30	326	855
1994	Dry	693	740	360	159	138	105	81	81	103	149	252	238	28	21	608
1995	Wet	1055	862	1	0	0	1122	1826	246	108	149	252	238	29	1040	0
1996	Normal-Wet	1438	1405	1389	1202	289	275	82	82	105	149	252	262	355	125	1074
1997	Wet	466	1060	1164	1118	1151	928	258	81	103	149	252	238	28	21	292
1998	Wet	1135	353	11	0	0	0	820	81	103	149	252	238	28	17	666
1999	Normal-Wet	704	1005	1136	1030	322	120	87	81	103	159	267	254	42	16	272
2000	Normal-Wet	1233	1069	1152	1065	345	111	82	85	103	149	252	238	28	21	267
2001	Normal-Dry	722	871	825	676	235	105	83	82	103	149	252	238	28	16	262
2002	Normal-Dry	695	864	817	660	220	110	83	88	106	149	252	239	28		
	Average	748	804	677	553	356	400	287	118	129	172	258	242	68	115	417
	Wet	651	580	472	434	583	893	640	143	133	177	248	213	76	207	427
	Normal-Wet	634	780	843	910	644	441	208	104	127	175	274	255	45	53	362
	Normal-Dry	610	768	653	528	406	612	315	122	124	154	223	220	98	188	474
	Dry	755	979	740	639	558	696	521	116	109	152	252	240	29	363	387

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 127: Simulated San Joaquin River Below Mendota Pool (Head of Reach 3) (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														59	155
1980	Wet	4286	3152	1319	1288	1139	1303	492	474	314	244	166	101	172	306	1281
1981	Normal-Dry	358	241	207	223	236	429	535	482	316	241	144	96	168	3593	4713
1982	Wet	1296	1299	1471	3915	2411	1161	677	518	355	492	548	1913	3875	3136	110
1983	Wet	4892	4792	4751	4418	3495	3772	2121	320	0	1035	1552	2127	2799	47	166
1984	Normal-Wet	266	211	122	203	222	426	538	485	322	239	146	104	172	344	1527
1985	Normal-Dry	276	183	214	210	218	421	538	480	309	239	145	100	169	48	150
1986	Wet	2351	4358	4140	2116	1303	1315	739	485	312	255	145	99	173	49	170
1987	Dry	277	202	224	204	217	421	536	477	309	239	144	99	165	50	157
1988	Dry	254	186	194	212	221	420	537	472	307	239	144	99	167	48	160
1989	Normal-Dry	267	185	192	213	218	421	536	472	307	238	144	99	165	51	156
1990	Dry	267	187	199	206	220	421	536	471	307	240	142	100	164	51	164
1991	Normal-Dry	265	285	183	212	220	420	538	471	307	239	145	98	166	374	490
1992	Dry	249	173	189	223	220	417	534	473	305	235	141	100	164	51	155
1993	Wet	313	547	881	1147	1103	988	695	465	303	236	153	102	168	414	1287
1994	Dry	271	171	194	213	219	423	537	475	309	239	145	95	167	56	501
1995	Wet	1299	1220	2135	2157	2283	1182	1535	509	307	240	145	96	198	3931	4175
1996	Normal-Wet	975	1104	330	1	995	732	542	470	309	239	142	95	989	232	1247
1997	Wet	997	21	18	212	786	459	530	430	284	210	130	99	176	0	61
1998	Wet	1290	1332	2409	3674	3080	2415	1545	377	227	171	37	99	351	47	330
1999	Normal-Wet	217	176	208	212	217	403	342	438	306	235	145	99	168	59	142
2000	Normal-Wet	294	0	0	166	299	434	537	478	310	240	137	105	174	39	150
2001	Normal-Dry	254	177	195	212	219	410	539	478	294	240	139	100	165	50	153
2002	Normal-Dry	266	183	197	217	214	421	538	473	311	237	142	98	165		
	Average	934	886	868	950	859	835	704	464	293	281	218	266	489	567	765
	Wet	2090	2090	2140	2366	1950	1574	1042	447	263	360	359	579	989	991	948
	Normal-Wet	1221	707	349	418	532	605	527	468	302	234	143	101	171	89	359
	Normal-Dry	1336	1342	1381	1386	1179	1287	919	440	242	406	443	539	757	290	573
	Dry	628	452	683	787	922	694	767	469	302	233	143	99	175	954	1235

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 128: Simulated San Joaquin River Below Mendota Pool (Head of Reach 3) (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														80	423
1980	Wet	4272	3152	1323	1289	1213	1303	535	564	442	438	446	340	220	153	734
1981	Normal-Dry	1029	1098	1053	901	478	568	624	602	451	424	377	348	208	3593	4704
1982	Wet	1224	1300	1471	3915	2411	1151	733	640	497	456	486	2003	3892	3145	355
1983	Wet	4892	4792	4751	4418	3495	3713	2126	349	1	1114	1608	2167	2649	68	447
1984	Normal-Wet	939	1160	1288	1243	563	566	656	605	460	428	423	378	220	199	1416
1985	Normal-Dry	980	1049	1040	864	448	539	648	601	445	411	406	367	214	65	418
1986	Wet	2294	4358	4140	2116	1303	1316	863	604	447	452	413	353	211	61	413
1987	Dry	966	956	601	344	357	548	641	589	445	405	407	364	204	71	403
1988	Dry	922	905	548	385	365	532	620	557	421	384	366	328	201	69	408
1989	Normal-Dry	946	1029	988	855	433	520	603	536	414	389	380	319	185	59	388
1990	Dry	927	906	539	338	328	502	591	527	392	371	366	313	183	58	407
1991	Normal-Dry	925	1139	1003	858	418	498	593	532	397	362	369	311	185	362	483
1992	Dry	916	902	535	356	327	495	588	527	381	356	365	313	183	59	391
1993	Wet	799	1136	981	1132	1170	1131	743	520	379	359	377	323	189	266	837
1994	Dry	931	889	534	346	330	500	592	529	384	360	369	307	186	58	587
1995	Wet	1311	1220	2135	2157	2283	1051	1532	559	388	361	369	309	217	3844	4175
1996	Normal-Wet	1190	1281	1187	712	667	628	597	525	387	360	365	330	527	115	1098
1997	Wet	1165	835	1265	1298	1301	1297	767	484	360	331	354	312	195	0	295
1998	Wet	1290	1332	2409	3674	3080	2102	1554	437	303	293	261	302	375	56	569
1999	Normal-Wet	889	1149	1303	1216	518	496	403	492	381	366	383	328	198	67	384
2000	Normal-Wet	930	472	1291	1243	542	477	592	535	386	361	361	318	193	48	386
2001	Normal-Dry	936	1021	993	866	430	488	595	533	370	361	363	313	184	58	384
2002	Normal-Dry	928	1020	988	855	410	504	595	534	390	359	366	312	184		
	Average	1374	1439	1407	1364	994	910	774	538	388	413	434	481	487	546	874
	Wet	2156	2266	2309	2500	2032	1633	1107	520	352	476	539	763	993	949	978
	Normal-Wet	1657	1306	1182	1112	787	821	628	543	401	380	386	330	201	65	444
	Normal-Dry	1791	1893	1749	1623	1287	1360	975	506	322	531	639	729	743	263	609
	Dry	1026	1047	1185	1157	1100	896	845	524	383	357	367	314	194	906	1239

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 129: Simulated San Joaquin River Below Sack Dam (Head of Reach 4A) (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														19	12
1980	Wet	4053	3175	1147	1055	904	880	233	110	83	39	40	15	38	241	1144
1981	Normal-Dry	106	92	17	8	13	24	83	80	77	37	20	12	31	3530	4532
1982	Wet	1031	1136	1169	3602	2267	755	320	90	94	247	508	1666	3707	3238	45
1983	Wet	4669	4621	4575	4230	3299	3283	1740	142	250	871	1314	1925	2613	13	18
1984	Normal-Wet	17	64	7	0	0	23	53	81	76	35	19	18	39	262	1383
1985	Normal-Dry	26	28	23	7	2	33	62	79	73	40	18	15	34	15	4
1986	Wet	1886	4140	4001	2087	1065	890	274	84	76	52	18	14	39	14	11
1987	Dry	25	48	53	21	2	22	66	88	74	42	17	14	31	15	8
1988	Dry	15	35	11	4	10	37	87	114	95	63	18	15	33	14	9
1989	Normal-Dry	17	33	9	16	12	47	104	135	102	57	18	16	33	18	26
1990	Dry	16	33	49	43	52	73	127	153	124	83	21	31	39	17	9
1991	Normal-Dry	15	128	11	13	35	75	120	141	119	92	20	31	37	331	328
1992	Dry	11	19	17	53	77	140	171	214	194	141	19	32	45	25	14
1993	Wet	284	368	706	880	911	549	513	218	196	97	26	24	39	338	1265
1994	Dry	17	20	41	50	35	92	169	196	190	110	26	29	35	23	358
1995	Wet	1049	1056	1893	1896	2066	750	1109	238	138	96	25	35	68	3800	4133
1996	Normal-Wet	1156	993	311	0	954	510	134	158	147	104	21	15	797	195	1077
1997	Wet	897	29	0	5	523	94	163	222	208	155	18	91	108	0	131
1998	Wet	1059	1160	2083	3406	2883	1945	1235	212	282	253	17	206	215	14	148
1999	Normal-Wet	5	22	20	6	10	107	214	218	175	91	18	14	35	57	5
2000	Normal-Wet	223	6	0	0	43	214	128	173	184	132	23	79	112	8	4
2001	Normal-Dry	14	22	12	5	15	113	123	194	212	126	19	32	48	16	5
2002	Normal-Dry	16	30	12	31	42	63	130	139	147	105	20	20	36		
	Average	722	750	703	757	662	466	320	151	144	133	98	189	357	531	638
	Wet	1866	1961	1947	2145	1740	1143	698	165	166	226	246	497	853	957	862
	Normal-Wet	1043	652	236	214	297	267	142	156	152	98	23	46	68	56	257
	Normal-Dry	1143	1183	1210	1180	982	879	552	148	156	247	295	437	615	246	451
	Dry	452	323	532	568	717	308	407	195	157	105	22	42	58	897	1173

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 130: Simulated San Joaquin River Below Sack Dam (Head of Reach 4A) (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														35	257
1980	Wet	4034	3175	1151	1056	978	880	249	199	210	230	319	258	94	114	576
1981	Normal-Dry	736	948	859	703	259	154	170	199	210	218	247	268	79	3530	4522
1982	Wet	942	1140	1169	3602	2267	745	371	211	234	250	321	1773	3724	3241	253
1983	Wet	4669	4621	4575	4230	3299	3234	1735	166	251	944	1390	1965	2466	30	272
1984	Normal-Wet	652	985	1105	1031	349	151	172	200	212	220	291	297	94	138	1248
1985	Normal-Dry	692	893	854	668	240	148	173	200	208	210	272	287	87	29	245
1986	Wet	1833	4137	4001	2087	1065	891	394	203	210	246	282	275	82	24	231
1987	Dry	673	821	459	164	137	148	172	199	208	206	271	286	77	33	231
1988	Dry	640	773	384	164	145	147	172	199	208	205	234	250	73	32	236
1989	Normal-Dry	656	876	799	673	240	148	172	199	207	205	248	243	57	23	237
1990	Dry	639	770	415	180	161	154	182	209	207	211	238	252	63	22	228
1991	Normal-Dry	638	978	821	675	248	154	177	201	208	212	237	251	60	321	307
1992	Dry	633	767	383	190	186	219	226	268	268	259	236	252	68	31	222
1993	Wet	744	951	840	861	972	700	558	272	270	217	243	252	64	214	788
1994	Dry	641	756	408	186	147	170	225	250	264	228	243	249	59	24	431
1995	Wet	1061	1056	1893	1896	2066	637	1089	286	218	214	242	255	92	3725	4133
1996	Normal-Wet	1395	1129	1023	569	660	378	190	212	223	222	238	256	352	98	907
1997	Wet	1031	670	1072	1068	1064	875	428	276	282	273	234	310	132	0	337
1998	Wet	1059	1160	2083	3406	2883	1705	1170	270	356	371	160	415	241	20	380
1999	Normal-Wet	616	973	1117	1009	335	200	277	272	249	218	252	250	71	63	216
2000	Normal-Wet	821	318	1093	1031	339	215	184	230	258	250	240	300	136	15	213
2001	Normal-Dry	645	866	805	671	241	192	180	248	286	244	236	253	71	21	212
2002	Normal-Dry	638	866	799	683	253	147	187	199	225	223	237	241	60		
	Average	1134	1288	1222	1165	806	539	385	225	238	264	300	410	361	512	725
	Wet	1922	2114	2098	2276	1824	1208	749	235	254	343	399	688	862	921	871
	Normal-Wet	1445	1184	995	899	573	462	243	230	249	241	260	281	104	36	317
	Normal-Dry	1572	1732	1584	1419	1092	955	606	213	235	369	488	633	606	222	465
	Dry	823	885	1008	936	902	504	487	249	237	225	239	264	82	857	1159

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 131: Simulated San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														0	0
1980	Wet	4	3	2	2	2	1	1	1	1	0	0	0	0	1	2
1981	Normal-Dry	1	1	0	0	0	0	1	1	1	0	0	0	0	3	4
1982	Wet	2	2	2	3	2	1	1	1	1	1	1	2	3	3	0
1983	Wet	4	4	4	4	3	3	2	1	1	1	2	2	3	0	0
1984	Normal-Wet	0	1	0	0	0	0	1	1	1	0	0	0	0	1	2
1985	Normal-Dry	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
1986	Wet	2	4	4	2	2	2	1	1	1	1	0	0	0	0	0
1987	Dry	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
1988	Dry	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0
1989	Normal-Dry	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0
1990	Dry	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0
1991	Normal-Dry	0	1	0	0	0	1	1	1	1	1	0	0	0	1	1
1992	Dry	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0
1993	Wet	1	1	1	1	2	1	1	1	1	1	0	0	0	1	2
1994	Dry	0	0	0	1	0	1	1	1	1	1	0	0	0	0	1
1995	Wet	2	2	2	2	2	1	2	1	1	1	0	0	0	3	4
1996	Normal-Wet	2	2	1	0	1	1	1	1	1	1	0	0	1	1	2
1997	Wet	2	0	0	0	1	0	1	1	1	1	0	1	1	0	1
1998	Wet	2	2	2	3	3	2	2	1	1	1	0	1	1	0	1
1999	Normal-Wet	0	0	0	0	0	1	1	1	1	1	0	0	0	1	0
2000	Normal-Wet	1	0	0	0	0	1	1	1	1	1	0	1	1	0	0
2001	Normal-Dry	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0
2002	Normal-Dry	0	0	0	0	0	1	1	1	1	1	0	0	0		
	Average	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1
	Wet	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1
	Normal-Wet	1	1	0	0	1	1	1	1	1	1	0	0	1	0	1
	Normal-Dry	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Dry	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 132: Simulated San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														0	1
1980	Wet	4	3	2	2	2	1	1	1	1	1	1	1	1	1	1
1981	Normal-Dry	1	2	1	1	1	1	1	1	1	1	1	1	1	3	4
1982	Wet	2	2	2	3	2	1	1	1	1	1	1	2	3	3	1
1983	Wet	4	4	4	4	3	3	2	1	1	2	2	2	2	0	1
1984	Normal-Wet	1	2	2	2	1	1	1	1	1	1	1	1	1	0	2
1985	Normal-Dry	1	2	1	1	1	1	1	1	1	1	1	1	1	0	1
1986	Wet	2	4	4	2	2	2	1	1	1	1	1	1	1	0	1
1987	Dry	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1
1988	Dry	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1
1989	Normal-Dry	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1
1990	Dry	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1
1991	Normal-Dry	1	2	1	1	1	1	1	1	1	1	1	1	0	1	1
1992	Dry	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1
1993	Wet	1	2	1	1	2	1	1	1	1	1	1	1	0	1	1
1994	Dry	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1
1995	Wet	2	2	2	2	2	1	2	1	1	1	1	1	1	3	4
1996	Normal-Wet	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
1997	Wet	2	1	2	2	2	1	1	1	1	1	1	1	1	0	1
1998	Wet	2	2	2	3	3	2	2	1	1	1	1	1	1	0	1
1999	Normal-Wet	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1
2000	Normal-Wet	1	1	2	2	1	1	1	1	1	1	1	1	1	0	1
2001	Normal-Dry	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
2002	Normal-Dry	1	1	1	1	1	1	1	1	1	1	1	1	0		
	Average	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
	Wet	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1
	Normal-Wet	2	2	2	2	1	1	1	1	1	1	1	1	1	0	1
	Normal-Dry	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1
	Dry	1	1	2	2	2	1	1	1	1	1	1	1	1	1	2

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 133: Simulated San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														1	1
1980	Wet	1274	816	79	9	4	25	102	2	2	1	1	1	1	2	19
1981	Normal-Dry	2	2	1	1	1	1	2	2	2	1	1	1	1	1301	2168
1982	Wet	6	18	330	1551	1077	84	3	2	2	2	4	59	1225	533	1
1983	Wet	2367	2303	2471	2575	2070	2642	1627	2	2	4	5	34	660	1	1
1984	Normal-Wet	1	2	1	0	0	1	2	2	2	1	1	1	1	2	593
1985	Normal-Dry	1	1	1	1	0	1	2	2	2	1	1	1	1	1	0
1986	Wet	1093	1698	1132	530	213	182	2	2	2	2	1	1	1	1	1
1987	Dry	1	2	1	1	0	1	2	2	2	1	1	1	1	1	1
1988	Dry	1	1	1	0	0	1	2	2	2	2	1	1	1	1	1
1989	Normal-Dry	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1
1990	Dry	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1
1991	Normal-Dry	1	2	1	1	1	2	2	2	2	2	1	1	1	2	3
1992	Dry	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1
1993	Wet	3	3	4	4	4	3	3	2	2	2	1	1	1	2	7
1994	Dry	1	1	1	2	1	2	2	2	2	2	1	1	1	1	3
1995	Wet	240	585	903	957	1224	174	1070	3	2	2	1	1	1	2979	2038
1996	Normal-Wet	12	34	2	0	186	3	2	2	2	2	1	1	79	2	397
1997	Wet	11	1	0	0	3	1	2	2	2	2	1	2	2	0	2
1998	Wet	50	120	804	1227	1314	975	1202	2	3	3	1	2	2	1	2
1999	Normal-Wet	0	1	1	0	1	2	2	2	2	2	1	1	1	2	0
2000	Normal-Wet	2	1	0	0	0	2	2	2	2	2	1	2	2	1	0
2001	Normal-Dry	1	1	1	1	1	2	2	2	2	2	1	1	1	1	0
2002	Normal-Dry	1	1	1	1	1	2	2	2	2	2	1	1	1		
	Average	220	243	249	299	266	179	176	2	2	2	1	5	87	210	228
	Wet	631	693	715	857	739	511	502	2	2	2	2	13	237	440	259
	Normal-Wet	258	164	16	2	2	6	22	2	2	2	1	1	2	1	4
	Normal-Dry	518	510	545	576	468	565	362	2	2	2	2	9	150	43	48
	Dry	51	118	182	193	247	36	216	2	2	2	1	1	1	597	410

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 134: Simulated San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														1	2
1980	Wet	1015	652	19	5	5	25	102	2	2	2	3	3	2	2	3
1981	Normal-Dry	3	4	4	4	3	2	2	2	2	2	2	3	2	1183	1846
1982	Wet	4	6	231	1440	739	5	3	2	2	2	3	38	983	451	2
1983	Wet	2238	2441	2507	2517	1835	2488	1606	2	2	4	5	31	431	1	2
1984	Normal-Wet	3	4	4	5	3	2	2	2	2	2	3	3	2	1	462
1985	Normal-Dry	3	4	4	3	3	2	2	2	2	2	2	3	2	1	2
1986	Wet	812	1444	1013	446	111	101	3	2	2	2	3	3	2	1	2
1987	Dry	3	4	3	2	2	2	2	2	2	2	2	3	2	1	2
1988	Dry	3	4	3	2	2	2	2	2	2	2	2	2	2	1	2
1989	Normal-Dry	3	4	4	3	3	2	2	2	2	2	2	2	1	1	2
1990	Dry	3	4	3	2	2	2	2	2	2	2	2	2	2	1	2
1991	Normal-Dry	3	4	4	4	3	2	2	2	2	2	2	2	2	2	3
1992	Dry	3	4	3	2	2	2	2	3	3	3	2	2	2	1	2
1993	Wet	4	4	4	4	4	42	6	3	3	2	2	3	2	2	4
1994	Dry	3	4	3	2	2	2	2	2	3	2	2	2	2	1	3
1995	Wet	261	739	841	685	708	59	1019	3	2	2	2	3	2	2880	1781
1996	Normal-Wet	5	6	5	3	3	3	2	2	2	2	2	3	3	2	44
1997	Wet	6	3	4	5	5	5	3	3	3	3	2	3	2	0	2
1998	Wet	15	158	766	1087	966	472	985	2	3	3	2	3	2	1	3
1999	Normal-Wet	3	4	5	5	3	2	3	3	2	2	2	2	2	2	2
2000	Normal-Wet	4	3	4	5	3	2	2	2	2	2	2	3	2	1	2
2001	Normal-Dry	3	4	4	3	3	2	2	2	3	2	2	2	2	1	2
2002	Normal-Dry	3	4	4	4	3	2	2	2	2	2	2	2	2		
	Average	192	239	237	271	192	140	164	2	2	3	3	5	63	197	182
	Wet	544	681	673	774	547	400	466	2	2	3	3	10	178	417	225
	Normal-Wet	206	133	7	4	3	7	22	2	2	2	2	3	2	1	2
	Normal-Dry	488	538	551	560	407	535	356	2	2	3	3	9	100	41	39
	Dry	55	151	171	140	144	22	207	3	2	2	2	3	2	577	358

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 135: Simulated San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														145	155
1980	Wet	6943	5256	2758	1930	1161	1880	1131	248	244	164	100	81	109	386	2051
1981	Normal-Dry	267	315	113	135	108	92	162	164	160	113	61	109	112	7548	11183
1982	Wet	2153	2752	4580	7772	6168	2381	700	262	340	512	1281	1649	6769	4079	198
1983	Wet	12377	11623	10950	11079	9538	11150	7725	516	628	1221	1165	2084	4736	87	116
1984	Normal-Wet	196	246	169	145	126	152	189	225	225	198	93	46	56	285	4468
1985	Normal-Dry	155	202	160	137	101	134	186	200	188	126	66	80	121	126	110
1986	Wet	6750	8868	6298	4346	3299	2729	540	253	294	213	102	82	119	137	88
1987	Dry	186	189	140	153	74	96	156	177	155	98	63	79	91	68	52
1988	Dry	120	114	68	123	61	98	137	181	151	98	28	23	58	78	80
1989	Normal-Dry	101	104	52	173	55	81	143	174	160	121	56	64	85	28	31
1990	Dry	68	62	47	90	70	87	153	182	147	96	35	32	46	37	151
1991	Normal-Dry	71	304	88	23	37	75	125	150	129	104	32	33	43	794	625
1992	Dry	109	108	86	60	77	138	179	217	201	156	33	38	60	104	160
1993	Wet	491	537	811	988	1099	579	651	224	218	163	138	83	102	711	1955
1994	Dry	97	75	74	92	56	125	198	232	222	158	84	65	85	199	713
1995	Wet	3894	5558	5496	5643	6604	2384	5765	511	349	275	182	105	142	14213	10084
1996	Normal-Wet	1591	2035	583	57	2011	873	258	299	269	237	172	174	2169	406	5284
1997	Wet	1541	204	142	75	905	191	248	315	284	239	95	140	203	49	221
1998	Wet	2598	3582	6455	6734	7254	5875	6432	358	435	451	223	268	268	66	466
1999	Normal-Wet	153	218	232	45	85	121	223	261	243	176	104	73	51	168	112
2000	Normal-Wet	770	65	55	202	136	281	192	215	213	186	161	175	175	213	117
2001	Normal-Dry	217	133	104	96	83	141	146	214	241	147	120	100	128	162	92
2002	Normal-Dry	118	110	72	60	79	81	143	153	182	139	86	68	143		
	Average	1781	1855	1719	1746	1704	1293	1121	249	247	234	195	246	690	1308	1674
	Wet	4593	4797	4686	4821	4503	3396	2899	336	349	405	411	562	1556	2466	1897
	Normal-Wet	1925	1172	644	488	477	525	380	238	234	172	109	115	147	187	518
	Normal-Dry	2981	2901	2742	2798	2490	2638	1956	263	275	364	318	505	1132	594	885
	Dry	1213	1333	1317	1364	1743	663	1388	276	225	175	96	79	107	3161	2607

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 136: Simulated San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														155	371
1980	Wet	6023	4703	2363	1643	1296	1724	1142	333	370	348	370	337	179	301	867
1981	Normal-Dry	844	1182	960	874	385	226	251	282	292	291	278	373	175	7151	10128
1982	Wet	1163	2190	4243	7420	4972	1633	738	383	478	507	535	1610	5984	3808	378
1983	Wet	11894	12082	11084	10894	8756	10630	7654	545	629	1329	1390	2330	3764	98	338
1984	Normal-Wet	775	1129	1317	1361	535	284	309	344	360	378	354	336	127	201	3523
1985	Normal-Dry	774	1061	1006	838	371	251	298	320	322	291	308	362	189	135	319
1986	Wet	5773	8018	5894	4068	2936	2492	665	372	427	401	360	356	177	143	279
1987	Dry	784	990	610	309	210	223	264	286	288	259	299	362	151	79	248
1988	Dry	697	882	498	296	201	210	224	265	262	239	232	268	111	89	280
1989	Normal-Dry	689	941	852	872	316	184	213	237	261	266	276	304	121	30	211
1990	Dry	640	826	473	242	182	171	212	236	229	219	239	265	80	39	339
1991	Normal-Dry	643	1155	911	728	284	157	185	208	217	220	236	266	78	787	585
1992	Dry	681	881	513	212	188	220	237	271	273	269	237	271	95	106	338
1993	Wet	886	1154	1046	921	1197	1533	818	278	290	278	343	324	138	628	896
1994	Dry	671	838	501	244	171	206	256	286	294	272	288	298	120	200	766
1995	Wet	3756	6077	5318	4762	4887	1563	5567	554	427	388	386	338	177	13841	9236
1996	Normal-Wet	1872	2088	1561	755	768	599	317	353	344	350	376	423	927	340	3365
1997	Wet	1604	758	1265	1459	1454	1348	575	369	355	352	299	371	237	49	394
1998	Wet	2340	3962	6330	6284	6103	4332	5561	412	507	564	375	482	302	69	671
1999	Normal-Wet	710	1128	1469	1305	470	215	293	315	315	295	331	320	100	171	291
2000	Normal-Wet	1391	421	1141	1466	531	244	250	272	284	300	365	408	210	216	296
2001	Normal-Dry	800	971	907	802	343	223	205	269	313	260	325	333	163	164	269
2002	Normal-Dry	691	939	870	753	324	168	202	213	258	253	290	302	178		
	Average	2004	2364	2223	2109	1603	1254	1149	322	339	362	369	480	599	1252	1495
	Wet	4180	4868	4693	4681	3950	3157	2840	406	435	521	507	768	1370	2367	1632
	Normal-Wet	2118	1583	1336	1241	799	758	494	313	329	310	333	362	196	173	429
	Normal-Dry	3242	3549	3175	2992	2410	2759	2014	328	353	490	527	753	946	569	712
	Dry	1506	1994	1803	1622	1601	954	1471	329	304	291	301	313	142	3069	2290

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 137: Simulated San Joaquin River Above Merced Confluence (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														486	705
1980	Wet	9143	6717	3495	2581	1841	2456	1665	606	688	478	328	262	309	1066	2800
1981	Normal-Dry	880	1032	516	570	410	310	389	410	367	314	207	446	447	9801	15247
1982	Wet	2888	3943	6763	9935	7461	2974	1281	754	1019	1140	2134	2282	8415	5783	880
1983	Wet	17232	15890	13666	13291	11525	12831	9751	1453	1638	2388	1887	3101	6111	295	503
1984	Normal-Wet	842	875	748	687	550	558	538	627	602	620	310	165	128	545	5073
1985	Normal-Dry	610	805	726	626	488	482	545	603	572	407	281	262	402	418	561
1986	Wet	7804	10486	7023	5109	3823	3330	1191	874	793	558	422	334	359	479	447
1987	Dry	865	871	662	513	461	478	552	544	423	299	391	365	282	296	344
1988	Dry	617	605	386	600	357	433	415	537	448	339	214	152	238	359	425
1989	Normal-Dry	395	438	323	705	352	370	434	484	434	425	400	386	394	99	104
1990	Dry	427	389	275	383	272	277	377	421	303	210	188	145	116	163	485
1991	Normal-Dry	366	802	425	208	158	162	232	257	176	142	116	108	118	1556	1255
1992	Dry	406	511	366	209	148	195	237	274	246	193	89	101	150	446	730
1993	Wet	1049	1035	1332	1215	1339	790	878	475	399	417	514	441	457	1606	2445
1994	Dry	591	479	367	296	223	271	333	403	351	281	257	218	292	634	1870
1995	Wet	4811	8147	6534	6285	7525	3087	6348	957	786	652	585	424	523	16678	11741
1996	Normal-Wet	2673	2989	1185	374	2337	1333	613	735	617	533	684	714	3105	1070	8375
1997	Wet	2220	852	566	361	1163	395	434	536	473	547	395	495	609	441	896
1998	Wet	4634	5161	8284	7317	7996	6375	7084	861	822	913	791	655	606	415	1283
1999	Normal-Wet	831	943	755	365	412	402	505	583	528	588	544	427	290	628	680
2000	Normal-Wet	1950	623	421	770	531	573	530	495	401	535	652	530	525	670	546
2001	Normal-Dry	1217	696	531	443	382	398	417	452	380	388	488	533	446	655	547
2002	Normal-Dry	648	577	340	292	299	312	379	378	351	352	482	460	732		
	Average	2743	2820	2421	2310	2176	1687	1527	596	557	553	537	566	1089	1939	2519
	Wet	6223	6529	5958	5762	5334	4030	3579	814	827	887	882	999	2174	3345	2624
	Normal-Wet	3028	1939	1148	956	881	861	718	538	503	471	429	416	458	650	1070
	Normal-Dry	4451	4284	3701	3508	3132	3190	2588	665	639	760	689	916	1612	1138	1413
	Dry	1775	2245	1827	1690	2091	942	1654	529	427	393	360	323	365	4089	3364

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 138: Simulated San Joaquin River Above Merced Confluence (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														494	911
1980	Wet	8155	6153	3099	2282	1969	2303	1674	690	813	659	595	521	384	993	1639
1981	Normal-Dry	1439	1894	1365	1322	698	445	478	527	498	490	421	710	515	9400	14218
1982	Wet	1870	3367	6415	9602	6277	2197	1316	875	1156	1184	1243	2247	7656	5498	1051
1983	Wet	16676	16340	13819	13119	10750	12306	9671	1484	1640	2492	2106	3363	5142	304	715
1984	Normal-Wet	1402	1745	1886	1912	980	690	659	745	736	799	567	457	205	473	4135
1985	Normal-Dry	1213	1661	1574	1338	769	599	656	723	705	571	518	546	476	425	760
1986	Wet	6805	9646	6609	4831	3458	3084	1316	993	925	744	677	610	422	483	629
1987	Dry	1446	1676	1152	676	597	605	661	652	555	459	621	650	348	305	531
1988	Dry	1177	1377	833	779	500	545	502	621	558	479	414	399	295	369	617
1989	Normal-Dry	966	1270	1126	1414	623	474	505	548	533	569	617	629	434	100	275
1990	Dry	982	1158	720	542	385	362	436	475	384	331	388	381	155	165	663
1991	Normal-Dry	921	1647	1252	924	416	245	293	314	264	256	315	344	157	1550	1210
1992	Dry	960	1289	813	367	261	277	296	327	317	304	289	337	189	447	898
1993	Wet	1422	1657	1589	1151	1432	1695	1096	528	470	531	714	685	498	1535	1394
1994	Dry	1148	1247	813	455	339	353	392	456	422	393	456	454	331	634	1916
1995	Wet	4616	8672	6394	5437	5817	2248	6130	999	862	763	785	659	562	16318	10902
1996	Normal-Wet	2991	2976	2169	1103	1112	1042	674	789	691	645	884	964	1943	1013	6474
1997	Wet	2251	1378	1671	1740	1714	1560	783	589	544	659	594	728	648	441	1058
1998	Wet	4309	5557	8166	6891	6858	4990	6030	913	893	1025	945	868	644	418	1477
1999	Normal-Wet	1371	1838	1975	1645	817	498	576	636	599	704	769	676	343	630	849
2000	Normal-Wet	2558	995	1459	2047	951	536	589	552	472	646	851	766	564	672	716
2001	Normal-Dry	1782	1529	1336	1160	654	480	478	506	451	500	687	769	485	657	714
2002	Normal-Dry	1204	1402	1142	996	555	400	439	438	427	464	681	696	770		
	Average	2942	3325	2929	2684	2084	1649	1550	669	649	681	702	803	1007	1884	2337
	Wet	5763	6596	5970	5631	4784	3798	3502	884	913	1007	957	1210	1994	3249	2358
	Normal-Wet	3192	2343	1828	1713	1211	1096	836	612	597	607	649	666	511	638	977
	Normal-Dry	4681	4929	4148	3711	3056	3300	2654	729	716	884	892	1169	1430	1115	1237
	Dry	2039	2902	2325	1959	1953	1222	1747	581	505	508	559	559	404	4002	3045

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 139: Simulated Chowchilla Bypass Diversion Flow (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														0	0
1980	Wet	2389	1725	1490	704	196	1030	539	0	1	1	1	0	1	1	747
1981	Normal-Dry	1	1	1	0	1	0	0	1	1	0	0	0	0	3673	5104
1982	Wet	864	1241	2825	4270	3505	1435	49	1	1	191	28	386	3086	307	0
1983	Wet	5754	5470	6266	6809	5936	8555	4335	0	0	0	0	252	2275	1	1
1984	Normal-Wet	0	0	0	0	1	0	1	1	1	1	0	0	1	9	3291
1985	Normal-Dry	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0
1986	Wet	4825	3361	2068	1893	2107	1508	1	1	1	1	1	0	0	0	0
1987	Dry	1	1	0	0	0	0	1	1	1	0	0	0	0	1	0
1988	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	Normal-Dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	Normal-Dry	0	1	0	0	0	0	0	0	0	0	0	0	0	28	2
1992	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	Wet	2	2	6	249	107	92	51	0	0	0	0	0	0	2	686
1994	Dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1995	Wet	2587	3421	3625	3916	4425	1545	4152	10	0	0	0	0	0	8815	4240
1996	Normal-Wet	457	352	2	2	1029	143	0	0	0	0	0	0	1267	1	2670
1997	Wet	240	1	1	1	308	0	0	0	0	0	0	0	0	0	0
1998	Wet	582	1836	3271	3308	3926	4259	4113	0	0	0	0	0	0	0	2
1999	Normal-Wet	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
2000	Normal-Wet	2	1	0	1	7	0	0	0	0	0	0	0	0	0	0
2001	Normal-Dry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	Normal-Dry	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Average	770	757	850	920	937	807	576	1	0	8	1	28	288	558	728
	Wet	2155	2132	2444	2644	2564	2303	1655	2	0	24	4	80	670	1141	710
	Normal-Wet	526	346	298	141	102	206	108	0	0	0	0	0	0	0	149
	Normal-Dry	1305	1246	1425	1596	1396	1891	992	0	0	2	0	56	513	118	283
	Dry	566	685	726	833	968	327	840	2	0	0	0	0	0	1769	986

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 140: Simulated Chowchilla Bypass Diversion Flow (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														1	1
1980	Wet	1642	1230	1098	471	271	870	539	1	1	1	1	1	1	1	53
1981	Normal-Dry	3	18	3	3	1	1	1	1	1	1	1	1	1	3298	3984
1982	Wet	59	724	2532	3814	2277	804	44	1	1	1	1	147	2244	93	1
1983	Wet	5566	5914	6322	6583	5130	8109	4304	1	1	46	193	300	1393	1	1
1984	Normal-Wet	3	4	86	131	2	1	1	1	1	1	1	1	1	1	2314
1985	Normal-Dry	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1
1986	Wet	3991	2720	1707	1606	1757	1305	2	1	1	1	1	1	1	0	1
1987	Dry	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1
1988	Dry	3	3	2	1	1	1	1	1	1	1	1	1	1	0	1
1989	Normal-Dry	3	3	3	2	1	1	1	1	1	1	1	1	0	0	1
1990	Dry	3	3	2	1	1	1	1	1	1	1	1	1	0	0	1
1991	Normal-Dry	3	17	3	3	1	1	1	1	1	1	1	1	0	28	2
1992	Dry	3	3	2	1	1	1	1	1	1	1	1	1	0	0	1
1993	Wet	3	7	37	203	159	1006	53	1	1	1	1	1	0	1	84
1994	Dry	3	3	2	1	1	1	1	1	1	1	1	1	0	0	2
1995	Wet	2673	3859	3293	2902	2692	816	4137	11	1	1	1	1	0	8505	3365
1996	Normal-Wet	272	594	242	4	23	62	1	1	1	1	1	1	10	1	847
1997	Wet	275	4	122	322	296	352	1	1	1	1	1	1	0	0	1
1998	Wet	612	2117	3114	2757	2735	2372	3986	1	1	1	1	1	0	0	26
1999	Normal-Wet	3	4	213	158	1	1	1	1	1	1	1	1	0	0	1
2000	Normal-Wet	32	4	149	158	2	1	1	1	1	1	1	1	0	0	1
2001	Normal-Dry	3	3	3	3	1	1	1	1	1	1	1	1	0	0	1
2002	Normal-Dry	3	3	3	2	1	1	1	1	1	1	1	1	0		
	Average	659	750	824	832	668	683	569	1	1	3	10	21	159	519	465
	Wet	1853	2072	2278	2332	1915	1954	1633	2	1	7	25	57	455	1075	442
	Normal-Wet	391	249	275	191	114	245	109	1	1	1	1	1	0	0	12
	Normal-Dry	1247	1338	1437	1524	1192	1960	985	1	1	10	41	65	311	110	111
	Dry	591	778	691	686	630	435	839	3	1	1	1	1	0	1707	691

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 141: Simulated Eastside Bypass Flow After Sand Slough Diversion (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														17	15
1980	Wet	4077	3314	1181	1048	905	888	254	110	83	40	38	15	38	215	1136
1981	Normal-Dry	105	94	15	10	12	21	84	79	77	38	21	12	30	3509	4506
1982	Wet	1028	1124	1125	3482	2347	760	345	88	93	212	593	1519	3675	3355	56
1983	Wet	4700	4603	4588	4258	3336	3230	1871	138	248	849	1226	1852	2594	14	17
1984	Normal-Wet	14	63	11	0	0	21	53	79	76	37	18	17	39	224	1378
1985	Normal-Dry	25	28	23	9	2	31	62	78	73	42	16	14	34	16	4
1986	Wet	1724	4093	4042	2257	1067	896	296	84	75	54	17	14	39	15	8
1987	Dry	24	48	48	28	2	20	66	87	74	43	16	14	31	16	7
1988	Dry	18	36	10	5	8	35	87	113	95	64	19	15	32	15	8
1989	Normal-Dry	18	33	9	16	11	44	103	133	103	59	17	16	33	18	26
1990	Dry	17	32	45	47	50	69	126	152	124	84	24	29	40	18	8
1991	Normal-Dry	16	123	16	12	33	73	119	141	118	93	22	30	37	327	317
1992	Dry	12	18	16	51	75	136	171	211	194	145	22	30	45	26	13
1993	Wet	293	337	716	841	932	535	532	217	197	100	26	23	40	304	1258
1994	Dry	17	21	36	51	33	88	168	193	190	113	31	28	36	23	333
1995	Wet	1068	1034	1861	1863	2083	763	1122	255	138	97	29	33	68	3739	4222
1996	Normal-Wet	1104	1042	356	0	929	529	131	157	146	105	25	15	755	179	1062
1997	Wet	990	53	0	5	508	107	156	220	208	157	27	84	109	1	129
1998	Wet	1053	1146	1976	3362	2919	1911	1336	202	280	258	29	195	220	15	134
1999	Normal-Wet	5	22	18	8	9	105	209	216	176	96	17	14	35	60	5
2000	Normal-Wet	235	19	0	0	19	233	128	170	183	134	31	73	113	9	3
2001	Normal-Dry	14	21	12	6	13	110	122	190	213	127	26	31	48	17	4
2002	Normal-Dry	17	30	11	27	41	60	129	137	146	107	24	19	37		
	Average	721	754	701	756	667	464	334	150	144	133	101	178	353	528	637
	Wet	1867	1963	1936	2140	1762	1136	739	164	165	221	248	467	848	957	870
	Normal-Wet	1068	687	243	214	289	274	144	153	152	100	27	44	69	51	255
	Normal-Dry	1151	1173	1214	1179	994	864	584	146	156	244	278	419	611	238	447
	Dry	477	316	528	554	721	309	411	197	157	106	26	40	59	878	1187

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 142: Simulated Eastside Bypass Flow After Sand Slough Diversion (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														30	246
1980	Wet	4053	3314	1184	1050	979	887	268	196	209	227	313	262	100	107	555
1981	Normal-Dry	710	947	856	723	269	151	171	197	209	217	241	270	84	3510	4497
1982	Wet	923	1129	1125	3482	2347	750	393	209	232	250	299	1641	3690	3353	250
1983	Wet	4700	4603	4588	4258	3336	3184	1861	163	249	916	1316	1892	2455	28	256
1984	Normal-Wet	624	965	1108	1039	372	149	172	198	211	219	284	300	101	119	1234
1985	Normal-Dry	669	889	858	685	252	145	173	198	207	209	264	290	93	27	229
1986	Wet	1669	4074	4042	2257	1067	897	412	202	208	244	277	280	88	23	214
1987	Dry	648	833	481	174	136	145	172	197	207	205	261	290	83	31	217
1988	Dry	620	787	406	168	145	144	172	196	206	204	229	254	78	30	222
1989	Normal-Dry	632	872	800	690	251	145	172	196	206	204	242	248	62	22	222
1990	Dry	616	780	436	189	160	152	182	207	206	209	235	255	68	22	212
1991	Normal-Dry	615	966	829	692	259	152	177	199	206	211	232	255	65	319	287
1992	Dry	610	777	407	193	184	215	227	265	266	260	232	255	74	30	207
1993	Wet	725	934	880	820	987	694	574	270	269	217	236	256	70	200	760
1994	Dry	617	768	428	192	145	167	224	247	263	228	242	253	64	24	396
1995	Wet	1078	1037	1861	1863	2083	660	1092	300	216	213	240	259	96	3662	4222
1996	Normal-Wet	1362	1147	1035	632	659	370	189	211	221	221	235	259	331	96	876
1997	Wet	1099	654	1068	1062	1066	881	445	274	280	272	237	308	137	1	321
1998	Wet	1053	1146	1976	3362	2919	1736	1208	258	353	373	175	407	248	20	354
1999	Normal-Wet	589	953	1118	1019	357	198	275	269	249	218	247	253	76	65	200
2000	Normal-Wet	808	346	1051	1038	363	213	184	227	256	249	241	299	141	14	197
2001	Normal-Dry	622	861	806	688	252	190	180	244	286	242	236	256	76	20	196
2002	Normal-Dry	616	861	800	696	265	145	187	197	223	223	234	244	65		
	Average	1116	1289	1224	1173	820	538	396	223	236	262	293	404	363	511	712
	Wet	1912	2111	2090	2269	1848	1211	781	234	252	339	387	663	861	924	866
	Normal-Wet	1450	1213	993	905	582	463	250	228	248	240	258	283	110	34	300
	Normal-Dry	1561	1725	1600	1423	1107	943	636	210	234	362	468	619	607	218	446
	Dry	827	874	1015	925	911	508	494	250	236	224	236	266	87	841	1161

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 143: Simulated Eastside Bypass Flow Before San Joquin River Confluence (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														17	17
1980	Wet	5550	4419	2663	1919	1129	1663	991	109	83	42	35	16	39	187	1747
1981	Normal-Dry	104	94	13	12	10	18	84	77	77	39	21	11	30	5457	7564
1982	Wet	1903	2118	3199	6040	5050	2236	533	85	94	256	1026	1557	5274	3470	74
1983	Wet	8013	7843	8229	8492	7335	8560	5804	135	241	816	1129	1847	3686	16	17
1984	Normal-Wet	12	60	16	0	1	17	53	77	76	38	17	16	39	180	3518
1985	Normal-Dry	23	28	23	10	1	28	63	75	74	44	16	14	34	18	4
1986	Wet	4960	6536	5149	3780	2984	2395	349	82	75	56	19	13	38	17	6
1987	Dry	22	47	43	35	1	17	65	85	75	44	16	14	31	18	7
1988	Dry	20	36	9	6	6	32	86	110	96	64	21	14	32	17	8
1989	Normal-Dry	18	32	9	15	9	40	102	130	105	60	17	15	32	18	25
1990	Dry	17	29	40	51	47	65	125	150	125	85	30	27	40	20	8
1991	Normal-Dry	17	111	29	11	30	68	118	139	118	94	25	28	37	351	301
1992	Dry	12	16	14	47	72	131	170	208	194	149	27	28	46	27	12
1993	Wet	310	301	737	983	1092	568	645	214	199	103	27	21	41	262	1807
1994	Dry	17	20	32	51	30	84	167	190	191	116	39	26	35	23	302
1995	Wet	2910	3871	4586	4697	5348	2018	4652	333	140	98	35	32	68	9398	7367
1996	Normal-Wet	1170	1714	426	1	1744	696	128	156	146	107	31	14	1495	163	3033
1997	Wet	1522	89	1	5	808	112	148	218	207	160	38	75	109	1	124
1998	Wet	1928	2454	4324	5317	5559	4696	5170	191	278	263	46	173	230	17	124
1999	Normal-Wet	14	21	16	10	7	101	204	213	178	101	16	13	34	65	5
2000	Normal-Wet	242	33	0	1	6	247	127	165	183	135	42	66	113	11	2
2001	Normal-Dry	14	19	12	6	10	105	121	184	215	128	35	28	49	18	4
2002	Normal-Dry	17	28	11	22	40	56	129	134	145	110	30	17	36		
	Average	1253	1301	1286	1370	1362	1041	871	150	144	135	119	177	503	860	1134
	Wet	3387	3454	3611	3904	3663	2781	2286	171	165	224	294	467	1185	1671	1408
	Normal-Wet	1470	918	540	388	391	431	290	150	152	102	33	40	69	47	376
	Normal-Dry	1923	1920	2065	2178	1964	2051	1501	145	155	239	263	417	860	301	653
	Dry	955	880	1079	1150	1465	566	1138	211	158	108	31	36	59	2006	1921

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 144: Simulated Eastside Bypass Flow Before San Joquin River Confluence (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														27	231
1980	Wet	4910	4032	2333	1638	1263	1508	1002	193	209	225	304	270	109	103	579
1981	Normal-Dry	679	958	857	749	285	151	172	194	209	216	237	273	92	5179	6824
1982	Wet	916	1563	2962	5792	4192	1571	571	206	232	250	281	1541	4723	3282	253
1983	Wet	7679	8164	8321	8362	6788	8196	5756	165	242	923	1354	2091	2942	27	237
1984	Normal-Wet	589	940	1159	1212	407	147	173	195	211	218	277	304	111	97	2693
1985	Normal-Dry	640	885	865	708	269	143	174	195	207	208	256	294	102	27	210
1986	Wet	4274	5942	4867	3585	2724	2241	473	200	207	243	275	286	95	23	195
1987	Dry	617	845	511	191	135	143	173	194	207	205	251	295	91	29	201
1988	Dry	594	801	436	177	145	142	173	194	206	204	225	258	85	28	207
1989	Normal-Dry	603	866	806	711	268	143	173	194	206	204	236	253	68	21	204
1990	Dry	588	790	464	202	158	149	183	204	206	208	233	259	75	22	195
1991	Normal-Dry	588	960	849	713	275	150	177	197	206	210	229	260	71	344	261
1992	Dry	581	787	439	198	184	212	228	261	265	262	230	260	80	30	189
1993	Wet	704	917	971	917	1189	1487	806	268	270	218	231	261	77	180	750
1994	Dry	589	780	457	202	144	165	225	243	262	229	243	258	70	24	354
1995	Wet	2757	4233	4459	4079	4146	1319	4507	376	217	211	238	264	103	9118	6774
1996	Normal-Wet	1453	1800	1401	696	684	422	188	210	220	220	235	262	319	98	1460
1997	Wet	1595	641	1120	1385	1355	1265	474	272	279	273	241	305	144	1	297
1998	Wet	1720	2794	4236	5000	4752	3606	4572	245	349	376	197	387	264	20	327
1999	Normal-Wet	568	928	1249	1266	389	196	273	266	249	219	243	258	83	68	183
2000	Normal-Wet	862	387	1081	1260	398	210	185	223	255	248	245	298	147	14	180
2001	Normal-Dry	594	854	812	710	269	187	181	238	287	241	238	260	84	20	179
2002	Normal-Dry	588	855	806	713	284	142	188	194	221	223	233	249	71		
	Average	1508	1814	1803	1759	1335	1039	914	223	236	262	293	411	435	816	999
	Wet	3069	3536	3659	3845	3301	2649	2270	241	251	340	390	675	1057	1594	1177
	Normal-Wet	1720	1360	1242	1140	711	663	403	224	247	239	257	285	117	33	289
	Normal-Dry	2219	2540	2491	2388	1945	2203	1565	209	232	364	471	664	723	279	490
	Dry	1246	1508	1573	1459	1425	874	1229	263	236	224	234	270	94	1933	1655

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 145: Simulated Sand Slough Bypass Flow (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														17	15
1980	Wet	4077	3314	1181	1048	905	888	254	110	83	40	38	15	38	215	1136
1981	Normal-Dry	105	94	15	10	12	21	84	79	77	38	21	12	30	3509	4506
1982	Wet	1028	1124	1125	3482	2347	760	345	88	93	212	593	1519	3675	3355	56
1983	Wet	4700	4603	4588	4258	3336	3230	1871	138	248	849	1226	1852	2594	14	17
1984	Normal-Wet	14	63	11	0	0	21	53	79	76	37	18	17	39	224	1378
1985	Normal-Dry	25	28	23	9	2	31	62	78	73	42	16	14	34	16	4
1986	Wet	1724	4093	4042	2257	1067	896	296	84	75	54	17	14	39	15	8
1987	Dry	24	48	48	28	2	20	66	87	74	43	16	14	31	16	7
1988	Dry	18	36	10	5	8	35	87	113	95	64	19	15	32	15	8
1989	Normal-Dry	18	33	9	16	11	44	103	133	103	59	17	16	33	18	26
1990	Dry	17	32	45	47	50	69	126	152	124	84	24	29	40	18	8
1991	Normal-Dry	16	123	16	12	33	73	119	141	118	93	22	30	37	327	317
1992	Dry	12	18	16	51	75	136	171	211	194	145	22	30	45	26	13
1993	Wet	293	337	716	841	932	535	532	217	197	100	26	23	40	304	1258
1994	Dry	17	21	36	51	33	88	168	193	190	113	31	28	36	23	333
1995	Wet	1068	1034	1861	1863	2083	763	1122	255	138	97	29	33	68	3739	4222
1996	Normal-Wet	1104	1042	356	0	929	529	131	157	146	105	25	15	755	179	1062
1997	Wet	990	53	0	5	508	107	156	220	208	157	27	84	109	1	129
1998	Wet	1053	1146	1976	3362	2919	1911	1336	202	280	258	29	195	220	15	134
1999	Normal-Wet	5	22	18	8	9	105	209	216	176	96	17	14	35	60	5
2000	Normal-Wet	235	19	0	0	19	233	128	170	183	134	31	73	113	9	3
2001	Normal-Dry	14	21	12	6	13	110	122	190	213	127	26	31	48	17	4
2002	Normal-Dry	17	30	11	27	41	60	129	137	146	107	24	19	37		
	Average	1253	1301	1286	1370	1362	1041	871	150	144	135	119	177	503	860	1134
	Wet	3387	3454	3611	3904	3663	2781	2286	171	165	224	294	467	1185	1671	1408
	Normal-Wet	1470	918	540	388	391	431	290	150	152	102	33	40	69	47	376
	Normal-Dry	1923	1920	2065	2178	1964	2051	1501	145	155	239	263	417	860	301	653
	Dry	955	880	1079	1150	1465	566	1138	211	158	108	31	36	59	2006	1921

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 146: Simulated Sand Slough Bypass Flow (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														30	246
1980	Wet	4053	3314	1184	1050	979	887	268	196	209	227	313	262	100	107	555
1981	Normal-Dry	710	947	856	723	269	151	171	197	209	217	241	270	84	3510	4497
1982	Wet	923	1129	1125	3482	2347	750	393	209	232	250	299	1641	3690	3353	250
1983	Wet	4700	4603	4588	4258	3336	3184	1861	163	249	916	1316	1892	2455	28	256
1984	Normal-Wet	624	965	1108	1039	372	149	172	198	211	219	284	300	101	119	1234
1985	Normal-Dry	669	889	858	685	252	145	173	198	207	209	264	290	93	27	229
1986	Wet	1669	4074	4042	2257	1067	897	412	202	208	244	277	280	88	23	214
1987	Dry	648	833	481	174	136	145	172	197	207	205	261	290	83	31	217
1988	Dry	620	787	406	168	145	144	172	196	206	204	229	254	78	30	222
1989	Normal-Dry	632	872	800	690	251	145	172	196	206	204	242	248	62	22	222
1990	Dry	616	780	436	189	160	152	182	207	206	209	235	255	68	22	212
1991	Normal-Dry	615	966	829	692	259	152	177	199	206	211	232	255	65	319	287
1992	Dry	610	777	407	193	184	215	227	265	266	260	232	255	74	30	207
1993	Wet	725	934	880	820	987	694	574	270	269	217	236	256	70	200	760
1994	Dry	617	768	428	192	145	167	224	247	263	228	242	253	64	24	396
1995	Wet	1078	1037	1861	1863	2083	660	1092	300	216	213	240	259	96	3662	4222
1996	Normal-Wet	1362	1147	1035	632	659	370	189	211	221	221	235	259	331	96	876
1997	Wet	1099	654	1068	1062	1066	881	445	274	280	272	237	308	137	1	321
1998	Wet	1053	1146	1976	3362	2919	1736	1208	258	353	373	175	407	248	20	354
1999	Normal-Wet	589	953	1118	1019	357	198	275	269	249	218	247	253	76	65	200
2000	Normal-Wet	808	346	1051	1038	363	213	184	227	256	249	241	299	141	14	197
2001	Normal-Dry	622	861	806	688	252	190	180	244	286	242	236	256	76	20	196
2002	Normal-Dry	616	861	800	696	265	145	187	197	223	223	234	244	65		
	Average	1508	1814	1803	1759	1335	1039	914	223	236	262	293	411	435	816	999
	Wet	3069	3536	3659	3845	3301	2649	2270	241	251	340	390	675	1057	1594	1177
	Normal-Wet	1720	1360	1242	1140	711	663	403	224	247	239	257	285	117	33	289
	Normal-Dry	2219	2540	2491	2388	1945	2203	1565	209	232	364	471	664	723	279	490
	Dry	1246	1508	1573	1459	1425	874	1229	263	236	224	234	270	94	1933	1655

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 147: Simulated Mariposa Bypass Flow (cfs) - No-Action Alternative

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														1	0
1980	Wet	1255	806	73	7	3	26	99	1	1	1	1	1	1	1	18
1981	Normal-Dry	1	1	1	1	1	1	1	1	1	1	1	1	1	1308	2160
1982	Wet	4	18	338	1557	1066	81	2	1	1	1	2	59	1232	524	1
1983	Wet	2361	2300	2470	2570	2063	2654	1599	1	1	2	3	36	669	1	1
1984	Normal-Wet	1	1	0	0	0	0	1	1	1	1	1	1	1	1	603
1985	Normal-Dry	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0
1986	Wet	1105	1678	1123	517	211	180	2	1	1	1	1	1	1	1	1
1987	Dry	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
1988	Dry	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1
1989	Normal-Dry	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1990	Dry	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1991	Normal-Dry	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1992	Dry	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1993	Wet	1	1	2	3	3	2	2	1	1	1	1	1	1	1	5
1994	Dry	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1995	Wet	253	580	902	958	1221	167	1068	1	1	1	1	1	1	2981	2011
1996	Normal-Wet	12	31	1	0	185	2	1	1	1	1	1	1	81	1	399
1997	Wet	8	0	0	0	2	1	1	1	1	1	1	1	1	0	1
1998	Wet	41	125	808	1229	1310	984	1182	1	1	1	0	1	1	1	1
1999	Normal-Wet	0	1	1	0	1	1	1	1	1	1	1	1	1	1	0
2000	Normal-Wet	1	0	0	0	0	1	1	1	1	1	1	1	1	0	0
2001	Normal-Dry	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
2002	Normal-Dry	1	1	1	1	1	1	1	1	1	1	1	1	1		
	Average	1253	1301	1286	1370	1362	1041	871	150	144	135	119	177	503	860	1134
	Wet	3387	3454	3611	3904	3663	2781	2286	171	165	224	294	467	1185	1671	1408
	Normal-Wet	1470	918	540	388	391	431	290	150	152	102	33	40	69	47	376
	Normal-Dry	1923	1920	2065	2178	1964	2051	1501	145	155	239	263	417	860	301	653
	Dry	955	880	1079	1150	1465	566	1138	211	158	108	31	36	59	2006	1921

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 148: Simulated Mariposa Bypass Flow (cfs) - Proposed Action

WY	Year Type	Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														1	1
1980	Wet	1003	643	14	4	3	25	99	1	1	1	1	1	1	1	2
1981	Normal-Dry	2	3	2	2	1	1	1	1	1	1	1	1	1	1192	1836
1982	Wet	2	4	240	1445	728	3	2	1	1	1	1	38	988	443	1
1983	Wet	2239	2439	2504	2512	1827	2500	1578	1	1	2	3	31	441	1	1
1984	Normal-Wet	2	3	3	3	2	1	1	1	1	1	1	1	1	1	469
1985	Normal-Dry	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
1986	Wet	827	1424	1005	433	109	99	2	1	1	1	1	1	1	1	1
1987	Dry	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
1988	Dry	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
1989	Normal-Dry	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
1990	Dry	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
1991	Normal-Dry	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1
1992	Dry	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
1993	Wet	2	2	2	3	3	42	3	1	1	1	1	1	1	1	2
1994	Dry	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2
1995	Wet	276	732	837	684	703	55	1018	2	1	1	1	1	1	2880	1754
1996	Normal-Wet	3	4	3	2	2	2	1	1	1	1	1	1	2	1	44
1997	Wet	3	2	3	3	3	3	2	1	1	1	1	1	1	0	1
1998	Wet	10	162	769	1087	961	466	982	1	2	2	1	2	1	1	2
1999	Normal-Wet	2	2	3	3	2	1	1	1	1	1	1	1	1	1	1
2000	Normal-Wet	2	2	3	3	2	1	1	1	1	1	1	1	1	1	1
2001	Normal-Dry	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
2002	Normal-Dry	2	2	2	2	1	1	1	1	1	1	1	1	1		
	Average	1508	1814	1803	1759	1335	1039	914	223	236	262	293	411	435	816	999
	Wet	3069	3536	3659	3845	3301	2649	2270	241	251	340	390	675	1057	1594	1177
	Normal-Wet	1720	1360	1242	1140	711	663	403	224	247	239	257	285	117	33	289
	Normal-Dry	2219	2540	2491	2388	1945	2203	1565	209	232	364	471	664	723	279	490
	Dry	1246	1508	1573	1459	1425	874	1229	263	236	224	234	270	94	1933	1655

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: cfs = cubic feet per second

Table 149: Simulated Temperature at Millerton Release (Head of Reach 1) (deg. F) - No-Action Alternative

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														50	47
1980	Wet	45	45	46	47	48	50	54	54	54	55	55	55	54	46	45
1981	Normal-Dry	47	47	47	47	48	49	50	51	52	53	55	57	53	46	45
1982	Wet	44	45	45	46	48	51	53	53	54	54	57	57	53	46	45
1983	Wet	46	46	47	48	49	49	50	51	52	52	52	52	53	47	46
1984	Normal-Wet	45	45	46	46	48	49	50	51	52	53	54	55	53	46	45
1985	Normal-Dry	46	46	47	47	48	49	49	50	51	52	54	55	53	49	48
1986	Wet	45	45	46	47	48	50	52	53	53	54	54	54	54	47	46
1987	Dry	47	47	47	48	48	48	49	50	50	51	52	53	53	47	46
1988	Dry	46	46	46	46	47	47	48	49	50	51	52	53	53	48	47
1989	Normal-Dry	46	46	46	46	47	48	49	49	50	52	53	53	53	47	47
1990	Dry	47	47	47	48	48	49	49	50	51	52	53	54	52	48	46
1991	Normal-Dry	47	46	46	47	48	50	51	52	53	54	56	57	53	46	44
1992	Dry	46	46	46	47	48	48	49	50	51	53	54	55	53	49	47
1993	Wet	44	45	45	46	48	50	52	52	53	53	54	54	54	46	44
1994	Dry	47	47	47	48	48	49	49	50	51	52	54	55	51	49	46
1995	Wet	45	45	46	47	48	50	54	55	55	55	55	55	55	46	45
1996	Normal-Wet	45	45	46	46	48	51	52	53	54	54	55	57	54	48	46
1997	Wet	45	45	46	46	47	51	52	53	53	54	55	55	54	48	45
1998	Wet	46	47	47	48	50	53	55	56	56	56	56	57	55	49	47
1999	Normal-Wet	45	46	46	47	47	48	49	50	51	52	53	54	55	49	48
2000	Normal-Wet	46	46	47	47	48	49	50	51	52	53	53	54	53	47	46
er second, T/	Normal-Dry	47	47	47	47	48	49	49	50	51	52	53	55	54	49	48
2002	Normal-Dry	47	47	48	48	48	49	50	51	51	52	53	54	55		
	Average	46	46	46	47	48	49	51	51	52	53	54	55	53	47	46
	Wet	45	45	46	47	48	50	53	53	54	54	55	55	54	47	45
	Normal-Wet	46	46	46	47	48	49	51	52	52	53	54	55	54	48	46
	Normal-Dry	46	46	46	47	48	49	51	51	52	53	53	54	53	47	45
	Dry	46	46	46	47	48	50	51	52	53	54	54	55	54	47	45

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 150: Simulated Temperature at Millerton Release (Head of Reach 1) (deg. F) - Proposed Action

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														49	46
1980	Wet	44	45	45	46	48	50	53	54	54	55	56	57	54	46	44
1981	Normal-Dry	46	46	46	47	48	49	51	52	54	58	59	58	54	45	45
1982	Wet	44	44	45	45	47	50	52	53	54	55	56	57	53	46	45
1983	Wet	45	45	47	48	49	49	50	51	52	53	54	56	54	48	46
1984	Normal-Wet	45	45	46	47	49	50	52	53	54	57	58	58	54	46	45
1985	Normal-Dry	46	46	47	48	49	50	51	52	53	57	59	57	53	49	47
1986	Wet	45	45	45	46	47	50	52	52	53	55	57	58	55	47	45
1987	Dry	46	46	47	47	48	49	49	51	52	56	59	58	54	47	46
1988	Dry	45	46	46	47	47	48	49	51	53	57	60	58	54	49	47
1989	Normal-Dry	46	46	46	47	48	50	50	52	54	57	59	58	54	48	47
1990	Dry	47	47	48	48	48	49	50	52	54	59	60	57	53	48	46
1991	Normal-Dry	47	46	47	48	50	52	53	54	56	58	59	59	54	46	44
1992	Dry	46	46	47	47	48	49	50	52	54	59	60	59	54	48	47
1993	Wet	44	45	45	46	48	50	52	53	54	55	56	58	55	46	44
1994	Dry	46	46	47	48	48	49	50	51	53	57	58	56	52	49	45
1995	Wet	45	45	46	47	47	49	53	54	55	55	56	58	56	45	45
1996	Normal-Wet	45	45	46	47	48	49	51	52	53	56	58	57	53	48	45
1997	Wet	44	45	46	47	49	53	56	57	58	59	60	59	55	48	45
1998	Wet	45	46	46	47	49	51	54	55	56	56	58	58	55	50	46
1999	Normal-Wet	45	46	46	47	49	50	51	52	54	56	60	60	56	49	47
2000	Normal-Wet	46	46	47	48	50	51	52	53	54	57	58	57	54	47	46
2001	Normal-Dry	46	46	47	48	49	50	51	53	54	58	60	60	55	49	47
2002	Normal-Dry	47	47	48	48	49	50	51	52	54	57	60	59	56		
	Average	45	46	46	47	48	50	51	53	54	57	58	58	54	47	46
	Wet	45	45	46	47	48	50	53	54	54	56	57	57	55	47	45
	Normal-Wet	45	46	46	47	49	51	53	54	55	57	59	58	54	48	46
	Normal-Dry	46	46	46	47	49	50	51	52	53	56	57	58	54	47	45
	Dry	45	45	46	47	48	51	53	54	55	57	58	58	55	47	45

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 151: Simulated Temperature at San Joaquin River At Gravelly Ford (Head of Reach 2A) (deg. F) - No-Action Alternative

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														47	55
1980	Wet	49	50	52	54	57	59	72	80	74	69	62	55	49	46	48
1981	Normal-Dry	58	60	67	69	73	80	83	79	76	66	60	56	49	46	47
1982	Wet	49	49	50	51	55	59	74	79	72	65	56	53	52	47	52
1983	Wet	49	49	50	51	54	55	61	76	77	70	63	54	52	45	53
1984	Normal-Wet	62	64	65	68	75	78	83	80	77	65	59	53	48	48	48
1985	Normal-Dry	60	60	69	69	74	80	82	78	72	67	61	52	48	46	54
1986	Wet	49	52	52	54	56	61	75	79	73	66	61	56	48	47	56
1987	Dry	59	62	69	74	75	78	79	79	75	70	61	54	50	46	53
1988	Dry	62	67	70	67	71	77	83	81	77	69	63	54	48	47	50
1989	Normal-Dry	60	64	71	71	73	78	82	80	74	68	62	58	48	46	57
1990	Dry	58	66	71	72	75	77	83	81	76	71	62	56	46	45	54
1991	Normal-Dry	58	57	65	67	72	77	83	80	79	75	64	57	48	49	52
1992	Dry	62	65	68	71	77	79	80	82	77	72	65	57	49	48	54
1993	Wet	58	59	55	55	58	62	73	80	78	72	66	56	49	50	48
1994	Dry	64	65	68	70	73	78	83	82	77	70	60	52	47	51	55
1995	Wet	51	53	52	52	55	59	61	77	79	71	65	62	54	47	49
1996	Normal-Wet	52	53	59	62	59	70	84	84	77	69	59	58	52	50	49
1997	Wet	53	64	65	70	64	77	83	83	79	70	65	58	50	46	53
1998	Wet	51	54	53	55	56	60	64	83	80	68	60	56	48	50	55
1999	Normal-Wet	58	61	60	69	72	79	83	80	79	73	64	58	49	49	52
2000	Normal-Wet	58	64	70	69	72	79	81	82	76	69	60	52	49	49	53
er second, T/	Normal-Dry	57	67	65	69	77	80	82	82	78	72	65	59	49	51	55
2002	Normal-Dry	59	62	70	69	73	80	83	81	77	70	62	58	51		
	Average	56	59	62	64	67	72	78	80	76	69	62	56	49	48	52
	Wet	51	54	54	55	57	61	70	80	76	69	62	56	50	47	52
	Normal-Wet	55	61	64	66	69	75	80	81	76	69	63	55	49	48	53
	Normal-Dry	56	57	60	62	65	69	75	79	77	71	63	56	50	48	52
	Dry	56	60	61	63	65	71	77	80	78	72	64	58	49	48	51

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 152: Simulated Temperature at San Joaquin River At Gravelly Ford (Head of Reach 2A) (deg. F) - Proposed Action

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														47	52
1980	Wet	49	51	53	54	57	60	71	76	70	65	59	55	50	46	49
1981	Normal-Dry	52	53	55	57	66	75	78	75	72	63	59	57	50	45	47
1982	Wet	50	50	50	51	56	59	72	75	69	63	56	53	52	48	50
1983	Wet	49	48	50	51	54	55	60	74	72	64	58	53	51	45	51
1984	Normal-Wet	53	53	53	55	67	74	79	76	72	63	58	55	49	48	48
1985	Normal-Dry	52	52	57	58	67	75	77	74	69	64	59	54	49	47	52
1986	Wet	49	52	52	55	56	60	72	75	69	63	59	57	50	47	52
1987	Dry	52	53	60	67	70	73	75	75	70	66	59	56	51	46	51
1988	Dry	52	55	59	61	67	72	78	76	72	65	60	56	50	47	49
1989	Normal-Dry	52	54	57	58	66	73	78	76	70	65	60	58	49	47	54
1990	Dry	52	56	61	66	70	74	80	78	72	67	60	57	48	45	52
1991	Normal-Dry	52	52	56	58	66	73	80	77	75	69	61	57	49	50	52
1992	Dry	53	54	59	65	72	75	76	77	72	67	62	58	50	48	51
1993	Wet	54	54	54	55	58	60	72	77	73	66	60	55	50	51	50
1994	Dry	55	54	59	64	69	74	79	77	72	65	58	53	48	51	54
1995	Wet	50	52	52	52	55	59	61	75	74	66	61	59	54	47	49
1996	Normal-Wet	51	52	54	57	66	72	79	79	72	65	58	58	52	51	51
1997	Wet	52	55	53	57	60	64	75	79	75	66	62	58	50	47	51
1998	Wet	51	52	53	55	56	61	63	80	75	64	58	56	49	50	54
1999	Normal-Wet	51	52	51	56	65	74	78	76	74	66	61	58	51	49	50
2000	Normal-Wet	54	55	56	57	66	76	77	77	72	65	59	54	51	49	51
2001	Normal-Dry	52	55	54	58	70	75	78	77	73	67	62	59	50	51	53
2002	Normal-Dry	52	53	58	57	66	75	79	76	72	65	60	59	52		
	Average	52	53	55	58	64	69	75	76	72	65	60	56	50	48	51
	Wet	51	52	52	54	56	60	68	76	72	64	59	56	51	47	51
	Normal-Wet	52	53	54	57	64	70	76	77	72	65	60	56	50	48	51
	Normal-Dry	52	52	55	58	62	66	72	76	72	66	60	56	50	48	51
	Dry	52	54	55	58	62	66	74	77	74	67	61	57	50	48	51

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 153: Simulated Temperature at San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (deg. F) - No-Action Alternative

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														47	58
1980	Wet	58	63	57	57	61	63	76	83	76	71	64	56	49	46	49
1981	Normal-Dry	60	62	69	72	76	83	85	82	80	68	61	57	49	45	55
1982	Wet	50	51	53	68	68	63	78	82	75	67	57	52	49	49	54
1983	Wet	61	61	66	68	73	68	68	80	79	72	64	55	51	45	55
1984	Normal-Wet	65	67	67	70	78	81	86	83	80	67	60	53	48	49	49
1985	Normal-Dry	62	62	73	71	77	83	84	82	75	69	63	52	47	47	57
1986	Wet	50	64	68	65	60	67	79	82	75	69	63	58	48	48	59
1987	Dry	62	64	72	77	78	81	82	82	78	74	62	55	50	47	55
1988	Dry	65	71	73	70	74	79	86	84	80	72	64	55	49	48	52
1989	Normal-Dry	63	66	74	73	76	80	85	83	77	71	64	59	49	48	59
1990	Dry	60	69	74	74	77	80	85	83	78	73	62	57	47	45	56
1991	Normal-Dry	60	58	67	69	74	79	86	82	82	76	65	58	48	50	54
1992	Dry	64	68	71	74	79	81	82	85	80	74	66	58	49	50	56
1993	Wet	61	63	58	58	63	66	77	83	80	73	67	57	50	51	50
1994	Dry	67	67	71	72	76	80	85	84	79	71	61	52	47	52	57
1995	Wet	52	55	65	68	75	63	65	81	81	73	67	63	54	49	58
1996	Normal-Wet	54	56	63	67	65	75	86	86	79	70	60	59	53	51	50
1997	Wet	57	67	67	73	69	80	85	85	81	71	67	59	50	48	55
1998	Wet	53	56	61	73	73	76	69	86	81	69	61	57	48	51	57
1999	Normal-Wet	61	63	62	72	75	81	85	82	82	75	67	59	50	50	54
2000	Normal-Wet	59	66	73	71	75	82	83	84	79	70	62	53	50	50	56
er second, T/	Normal-Dry	60	70	67	72	80	81	84	84	81	74	67	60	50	52	57
2002	Normal-Dry	62	65	73	71	76	82	85	84	79	71	63	60	52		
	Average	59	63	67	70	73	76	81	83	79	71	63	57	49	49	55
	Wet	56	60	62	66	68	68	75	83	79	71	64	57	50	48	55
	Normal-Wet	59	66	68	69	73	78	82	83	78	71	64	56	49	48	55
	Normal-Dry	61	62	66	68	72	74	79	82	80	73	64	56	50	48	54
	Dry	58	62	66	68	71	74	79	83	80	73	66	59	50	49	54

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 154: Simulated Temperature at San Joaquin River Below Chowchilla Bypass Diversion (Head Reach 2B) (deg. F) - Proposed Action

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														47	55
1980	Wet	58	63	58	58	60	64	75	80	74	67	61	55	50	46	51
1981	Normal-Dry	54	55	59	61	71	80	83	80	76	65	60	57	49	45	55
1982	Wet	52	51	53	69	68	63	77	80	72	65	57	52	49	49	52
1983	Wet	61	61	66	68	73	69	68	79	76	68	61	54	50	45	53
1984	Normal-Wet	56	56	56	58	72	78	84	80	77	65	59	54	49	50	49
1985	Normal-Dry	54	54	61	61	71	80	82	79	72	66	60	53	48	47	54
1986	Wet	51	64	68	65	61	67	77	79	72	65	60	57	49	47	55
1987	Dry	55	56	64	72	74	78	79	79	74	69	60	56	51	47	52
1988	Dry	55	59	64	65	71	77	83	81	76	68	61	55	50	48	51
1989	Normal-Dry	55	57	61	62	71	78	82	81	74	67	61	58	48	48	56
1990	Dry	54	59	65	70	74	78	84	82	76	70	60	57	47	45	54
1991	Normal-Dry	54	54	59	62	70	77	84	80	79	72	62	57	49	50	54
1992	Dry	55	57	63	70	76	79	80	82	77	70	63	57	49	50	53
1993	Wet	57	57	57	58	62	64	76	81	77	69	62	55	50	52	52
1994	Dry	58	57	64	68	73	78	84	82	76	68	59	52	48	52	57
1995	Wet	52	54	65	68	75	64	65	80	78	69	62	60	54	48	58
1996	Normal-Wet	53	55	57	60	70	77	84	84	76	67	58	58	52	52	52
1997	Wet	56	58	56	61	65	69	80	83	79	68	64	58	50	47	53
1998	Wet	53	55	61	73	73	80	69	84	79	66	58	56	48	51	55
1999	Normal-Wet	54	55	53	60	70	78	83	81	79	70	63	58	50	50	52
2000	Normal-Wet	55	57	60	60	70	81	81	82	76	67	59	53	51	50	53
2001	Normal-Dry	54	59	57	62	75	79	82	82	78	70	64	59	50	52	54
2002	Normal-Dry	55	56	62	61	71	79	84	81	76	67	61	59	52		
	Average	55	57	60	64	70	75	79	81	76	68	61	56	50	49	53
	Wet	55	58	61	65	67	67	73	81	76	67	61	56	50	48	54
	Normal-Wet	56	58	58	60	68	74	80	81	76	68	62	56	50	48	53
	Normal-Dry	57	57	61	65	70	72	77	80	77	69	61	56	50	48	53
	Dry	55	56	61	64	69	70	78	81	78	70	62	57	50	49	54

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 155: Simulated Temperature at San Joaquin River Below Mendota Pool (Head of Reach 3) (deg. F) - No-Action Alternative

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														45	54
1980	Wet	53	56	62	62	64	69	76	78	73	67	61	53	46	45	50
1981	Normal-Dry	58	63	69	70	72	79	80	78	76	65	58	54	46	48	51
1982	Wet	53	53	55	58	63	67	78	79	73	65	56	51	49	50	53
1983	Wet	54	54	55	56	59	62	67	80	78	63	56	51	50	42	52
1984	Normal-Wet	59	64	67	67	73	77	83	80	77	64	57	50	46	47	50
1985	Normal-Dry	59	62	71	69	71	77	79	76	73	66	59	49	45	44	54
1986	Wet	55	56	56	62	66	70	79	78	71	66	59	54	46	46	56
1987	Dry	60	63	69	72	74	77	79	79	76	70	60	54	48	45	54
1988	Dry	61	67	69	66	70	75	81	79	74	68	60	52	47	46	51
1989	Normal-Dry	59	64	71	69	72	75	79	79	75	66	59	56	45	46	55
1990	Dry	58	65	70	70	71	76	81	80	76	68	58	54	44	44	55
1991	Normal-Dry	57	61	67	69	71	75	82	80	78	70	59	55	46	48	54
1992	Dry	63	66	71	72	76	78	80	81	76	69	62	53	46	46	52
1993	Wet	63	65	61	61	66	71	79	80	74	68	61	52	46	50	51
1994	Dry	63	63	68	69	71	77	81	80	76	67	56	49	45	49	57
1995	Wet	54	57	60	59	61	67	68	79	76	68	62	60	51	50	52
1996	Normal-Wet	56	58	67	70	67	74	80	80	74	65	56	56	51	49	51
1997	Wet	57	67	66	68	71	75	80	80	77	66	63	56	47	45	53
1998	Wet	55	61	56	59	58	62	71	79	75	65	59	55	46	50	55
1999	Normal-Wet	57	61	60	69	69	76	82	78	76	69	63	57	49	48	51
2000	Normal-Wet	59	66	72	68	71	77	78	80	75	67	58	51	49	48	53
er second, T/	Normal-Dry	57	69	66	70	78	78	79	79	76	69	63	57	46	51	55
2002	Normal-Dry	59	62	70	67	70	77	81	79	78	68	60	57	51		
	Average	58	62	65	66	69	74	78	79	75	67	59	54	47	47	53
	Wet	56	59	59	61	64	68	75	79	75	66	60	54	48	47	53
	Normal-Wet	57	64	67	67	71	75	78	78	75	67	61	53	47	46	53
	Normal-Dry	58	61	64	65	68	72	77	80	76	67	59	53	48	46	53
	Dry	58	63	65	66	68	73	78	80	76	68	61	56	47	47	53

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 156: Simulated Temperature at San Joaquin River Below Mendota Pool (Head of Reach 3) (deg. F) - Proposed Action

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														45	55
1980	Wet	53	56	62	62	64	69	76	79	74	68	61	54	47	44	52
1981	Normal-Dry	56	58	62	65	72	80	81	79	76	65	59	56	47	48	51
1982	Wet	54	54	55	58	63	68	78	79	73	66	56	51	49	50	53
1983	Wet	54	54	55	56	59	62	67	80	78	64	57	51	50	42	53
1984	Normal-Wet	58	59	59	62	73	78	83	80	77	64	58	52	46	48	51
1985	Normal-Dry	57	57	65	65	71	78	79	77	74	66	60	51	45	44	54
1986	Wet	56	56	56	62	66	70	79	79	72	66	60	56	46	46	56
1987	Dry	57	59	67	73	75	78	79	80	76	70	60	55	48	45	53
1988	Dry	59	62	67	66	71	76	82	79	75	69	61	54	47	46	51
1989	Normal-Dry	57	60	65	66	72	76	79	79	75	67	60	57	46	46	56
1990	Dry	56	62	68	71	72	76	81	80	77	69	59	56	44	44	55
1991	Normal-Dry	56	56	62	65	71	76	82	80	78	71	61	56	47	48	54
1992	Dry	59	61	67	72	76	78	81	81	76	70	63	55	46	46	52
1993	Wet	59	60	60	62	66	69	79	80	75	69	62	53	47	50	54
1994	Dry	61	60	66	69	72	77	81	80	77	67	57	51	45	50	57
1995	Wet	54	56	60	59	61	67	68	79	77	68	63	60	51	50	52
1996	Normal-Wet	55	57	60	63	68	76	81	81	75	66	57	57	51	49	52
1997	Wet	57	61	58	64	69	73	80	81	77	67	64	57	47	45	53
1998	Wet	55	61	56	59	58	62	70	79	76	66	59	56	46	50	55
1999	Normal-Wet	56	57	56	64	70	77	82	79	77	70	63	58	49	48	52
2000	Normal-Wet	56	60	63	63	70	78	79	80	75	67	59	52	49	48	54
2001	Normal-Dry	56	63	60	66	77	78	79	79	77	69	63	58	46	51	55
2002	Normal-Dry	57	58	66	64	71	77	81	79	78	68	60	58	51		
	Average	56	58	62	64	69	74	79	80	76	67	60	55	47	47	53
	Wet	55	57	58	60	63	68	75	79	75	67	60	55	48	47	53
	Normal-Wet	56	59	62	64	70	75	79	79	75	67	61	54	47	46	54
	Normal-Dry	57	57	61	64	68	72	77	80	77	68	60	54	48	46	53
	Dry	57	59	62	64	68	72	78	80	77	69	62	57	47	48	54

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 157: Simulated Temperature at San Joaquin River Below Sack Dam (Head of Reach 4A) (deg. F) - No-Action Alternative

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														46	56
1980	Wet	54	57	63	65	67	72	79	80	75	69	62	54	47	45	51
1981	Normal-Dry	59	63	70	72	76	82	83	81	78	66	60	55	47	48	52
1982	Wet	55	56	57	61	66	72	80	81	75	67	57	51	49	49	53
1983	Wet	55	55	57	58	63	66	71	76	33	59	58	51	50	43	54
1984	Normal-Wet	63	65	68	70	79	81	85	82	79	65	59	51	47	48	52
1985	Normal-Dry	61	63	73	71	76	81	82	79	75	67	60	51	46	45	55
1986	Wet	57	58	58	64	69	74	81	81	74	68	61	55	46	47	58
1987	Dry	61	64	71	75	78	80	81	81	77	71	60	54	49	46	55
1988	Dry	63	69	71	68	74	78	84	81	77	70	62	53	47	47	51
1989	Normal-Dry	60	65	73	72	75	78	81	81	76	69	61	57	46	47	57
1990	Dry	59	67	72	73	74	78	83	82	78	70	60	55	45	44	56
1991	Normal-Dry	59	62	68	70	74	78	84	82	80	72	62	56	47	49	55
1992	Dry	64	67	72	73	79	80	81	83	77	71	63	55	47	47	53
1993	Wet	56	61	64	65	70	75	79	82	77	70	64	54	47	51	53
1994	Dry	65	65	70	71	74	79	83	82	78	69	58	50	45	51	58
1995	Wet	56	58	62	62	65	71	74	82	79	70	64	62	52	50	53
1996	Normal-Wet	58	61	67	71	63	77	83	83	76	67	57	57	51	47	52
1997	Wet	58	69	67	72	75	80	82	82	79	68	64	55	45	46	46
1998	Wet	56	63	58	62	61	67	75	83	78	61	58	47	46	51	56
1999	Normal-Wet	57	63	62	71	74	79	84	81	79	72	64	58	50	47	54
2000	Normal-Wet	53	58	73	72	76	80	81	82	76	68	59	51	47	49	56
er second, T/	Normal-Dry	59	70	67	72	81	80	81	81	78	70	64	57	47	52	57
2002	Normal-Dry	61	64	72	69	74	79	83	81	79	70	61	58	51		
	Average	59	63	67	69	72	77	81	81	75	68	61	54	48	48	54
	Wet	56	60	61	64	67	72	78	81	71	66	61	54	48	48	53
	Normal-Wet	57	63	69	70	75	79	81	81	77	69	62	54	46	47	53
	Normal-Dry	58	61	65	67	71	75	79	80	69	68	61	54	48	47	54
	Dry	58	64	67	68	71	76	80	82	78	70	63	56	47	48	52

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 158: Simulated Temperature at San Joaquin River Below Sack Dam (Head of Reach 4A) (deg. F) - Proposed Action

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														46	55
1980	Wet	54	57	63	65	67	72	79	81	75	69	62	55	47	45	53
1981	Normal-Dry	57	59	64	67	74	82	83	81	78	66	60	56	47	48	52
1982	Wet	56	56	57	61	66	72	80	81	75	67	57	51	49	49	53
1983	Wet	55	55	57	58	63	66	71	76	33	60	58	51	49	43	53
1984	Normal-Wet	60	61	62	64	75	80	85	82	79	66	59	52	47	49	52
1985	Normal-Dry	59	59	67	67	74	80	82	79	75	67	60	51	46	45	55
1986	Wet	57	58	58	64	69	74	81	81	74	67	61	56	47	47	57
1987	Dry	59	60	69	75	77	80	81	81	77	71	60	54	49	46	54
1988	Dry	61	64	68	67	73	78	84	81	77	70	62	54	48	47	51
1989	Normal-Dry	58	62	68	68	74	78	82	81	76	68	61	57	47	47	56
1990	Dry	57	63	69	72	74	78	83	82	78	70	60	56	45	44	55
1991	Normal-Dry	58	58	64	67	73	78	84	82	80	72	62	57	48	49	55
1992	Dry	61	62	68	73	78	80	82	83	77	71	63	55	47	47	53
1993	Wet	61	62	63	65	69	73	81	82	77	70	64	54	48	51	55
1994	Dry	62	62	67	71	74	79	83	82	78	69	58	51	46	51	58
1995	Wet	56	58	62	62	65	72	74	82	79	70	64	61	52	50	53
1996	Normal-Wet	57	60	63	65	69	75	83	83	76	67	57	57	51	47	53
1997	Wet	58	64	61	67	72	75	82	83	79	68	65	57	46	46	54
1998	Wet	56	63	58	62	61	67	75	83	79	67	60	55	46	50	56
1999	Normal-Wet	58	59	57	66	72	80	85	81	79	72	64	58	50	47	53
2000	Normal-Wet	57	63	66	65	73	80	81	82	77	68	59	52	47	49	55
2001	Normal-Dry	57	65	62	68	80	80	81	81	78	71	64	58	48	52	56
2002	Normal-Dry	59	60	68	66	73	79	84	81	80	70	61	58	52		
	Average	58	60	64	66	72	76	81	81	75	69	61	55	48	48	54
	Wet	57	59	60	63	66	71	78	81	71	67	61	55	48	48	54
	Normal-Wet	57	62	64	66	73	78	81	81	77	69	62	55	47	47	54
	Normal-Dry	58	59	63	66	71	75	79	80	69	68	61	54	48	47	54
	Dry	58	61	64	66	71	75	81	82	79	70	63	57	48	48	54

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 159: Simulated Temperature at San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (deg. F) - No-Action Alternative

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														47	57
1980	Wet	58	62	66	70	73	77	83	83	77	71	64	55	48	45	54
1981	Normal-Dry	61	64	71	73	77	84	85	83	80	68	61	56	48	46	54
1982	Wet	59	61	62	68	74	78	83	83	77	68	58	51	48	48	54
1983	Wet	59	59	63	64	70	76	79	83	74	68	62	52	49	43	55
1984	Normal-Wet	66	67	68	70	79	82	87	84	81	67	59	52	46	49	55
1985	Normal-Dry	64	64	74	72	77	83	85	83	76	69	61	51	46	45	56
1986	Wet	61	64	64	70	75	80	84	83	76	69	62	56	47	47	59
1987	Dry	63	65	73	77	78	82	82	82	78	73	60	54	49	46	55
1988	Dry	65	71	72	69	75	80	86	83	79	71	63	54	48	47	52
1989	Normal-Dry	62	66	74	73	77	81	84	83	77	70	62	58	47	47	58
1990	Dry	60	68	73	74	76	80	86	84	79	72	61	56	45	45	56
1991	Normal-Dry	61	63	68	71	75	81	86	83	81	73	63	57	48	49	56
1992	Dry	65	68	72	75	80	81	83	84	79	72	64	56	47	48	54
1993	Wet	65	67	68	71	75	80	84	83	80	72	65	55	48	52	56
1994	Dry	66	67	70	72	76	82	86	84	79	70	59	51	46	51	59
1995	Wet	60	63	67	67	72	78	83	85	81	72	65	62	53	51	55
1996	Normal-Wet	61	67	70	71	74	81	85	85	78	69	58	57	51	50	54
1997	Wet	61	70	67	73	78	81	85	85	81	70	66	58	48	46	55
1998	Wet	60	66	62	70	69	76	84	86	81	68	59	55	46	51	57
1999	Normal-Wet	61	64	63	73	75	82	86	83	81	73	66	58	50	49	54
2000	Normal-Wet	60	66	73	72	76	83	83	84	78	69	59	52	50	49	57
er second, T/	Normal-Dry	61	71	68	73	82	82	83	83	80	72	65	58	48	52	58
2002	Normal-Dry	63	65	72	70	76	82	86	84	81	71	62	58	52		
	Average	62	66	69	71	76	80	84	84	79	70	62	55	48	48	56
	Wet	60	64	65	69	73	78	83	84	78	70	63	56	48	48	56
	Normal-Wet	61	67	70	72	77	81	84	83	78	70	63	55	48	48	56
	Normal-Dry	62	64	68	71	75	80	83	83	78	71	63	55	48	48	56
	Dry	61	66	69	71	75	80	85	84	80	72	64	58	48	48	56

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 160: Simulated Temperature at San Joaquin River Below Sand Slough Control Structure (Head of Reach 4B1) (deg. F) - Proposed Action

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														47	57
1980	Wet	58	62	66	70	73	77	83	83	77	71	63	55	48	45	54
1981	Normal-Dry	60	63	69	72	76	84	85	83	80	68	61	56	48	46	54
1982	Wet	60	61	62	68	74	79	83	83	76	68	58	51	48	48	54
1983	Wet	59	59	63	64	70	76	79	83	74	68	62	52	49	43	55
1984	Normal-Wet	65	66	67	69	78	82	86	84	80	67	59	52	46	49	55
1985	Normal-Dry	63	62	72	71	76	83	85	82	76	68	61	51	46	45	56
1986	Wet	61	64	64	70	75	80	84	83	75	69	62	56	47	47	58
1987	Dry	62	64	72	77	78	81	82	82	78	72	60	54	49	46	55
1988	Dry	64	70	71	69	74	80	86	83	79	71	62	54	48	47	52
1989	Normal-Dry	61	65	73	72	76	81	84	83	77	70	62	58	47	47	57
1990	Dry	60	67	72	73	76	80	86	84	79	72	61	56	45	45	56
1991	Normal-Dry	61	62	67	70	75	81	86	83	81	73	63	57	48	49	56
1992	Dry	64	67	71	74	80	81	83	84	79	72	64	56	47	48	54
1993	Wet	65	67	68	71	75	79	84	83	80	72	65	54	48	52	57
1994	Dry	65	66	70	72	76	81	86	84	79	70	59	51	46	51	59
1995	Wet	60	62	67	67	72	78	83	85	81	72	65	62	53	51	55
1996	Normal-Wet	61	67	69	70	74	81	85	85	78	69	58	57	51	50	54
1997	Wet	61	69	65	72	77	80	85	85	81	70	65	58	48	46	56
1998	Wet	60	66	62	70	69	76	84	86	81	69	60	56	47	51	57
1999	Normal-Wet	61	63	62	71	75	82	86	83	81	73	65	58	50	49	54
2000	Normal-Wet	60	66	72	70	76	83	83	84	78	69	59	52	50	49	56
2001	Normal-Dry	60	70	67	72	82	82	83	83	80	72	64	58	48	52	58
2002	Normal-Dry	62	64	71	70	76	81	86	84	81	71	62	58	52		
	Average	61	65	68	71	75	80	84	84	79	70	62	55	48	48	56
	Wet	60	64	65	69	73	78	83	84	78	70	63	56	48	48	56
	Normal-Wet	60	66	69	71	77	81	84	83	78	70	63	55	48	48	56
	Normal-Dry	62	64	68	70	75	80	83	83	78	71	62	55	48	48	56
	Dry	61	66	68	71	75	80	85	84	80	72	64	57	48	48	56

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 161: Simulated Temperature at San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (deg. F) - No-Action Alternative

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														45	55
1980	Wet	56	60	65	70	74	77	80	80	75	68	61	53	45	43	54
1981	Normal-Dry	59	64	69	72	75	82	83	82	77	66	59	54	45	46	51
1982	Wet	60	62	60	63	68	77	83	81	75	67	55	49	49	49	53
1983	Wet	55	56	58	59	65	68	73	81	77	68	62	51	49	40	53
1984	Normal-Wet	64	65	67	69	77	81	84	82	78	65	57	49	44	47	53
1985	Normal-Dry	63	63	72	71	74	80	83	81	74	66	58	48	43	43	54
1986	Wet	56	60	61	67	71	78	83	81	74	67	60	54	44	46	57
1987	Dry	62	64	71	75	77	80	81	81	76	70	58	51	47	45	54
1988	Dry	63	69	70	66	73	78	84	81	76	69	60	51	46	46	50
1989	Normal-Dry	60	64	72	71	76	79	82	81	76	68	59	55	45	46	55
1990	Dry	59	66	71	72	73	79	84	83	78	70	58	54	43	43	55
1991	Normal-Dry	61	66	68	70	75	80	84	82	78	69	60	55	47	46	54
1992	Dry	64	67	72	73	78	79	81	82	76	70	61	52	45	45	51
1993	Wet	64	67	68	70	75	79	83	82	78	70	63	51	46	49	55
1994	Dry	64	65	68	70	75	81	84	83	78	68	56	48	43	49	57
1995	Wet	58	59	63	62	66	76	76	83	79	69	62	60	51	49	53
1996	Normal-Wet	59	66	69	67	72	79	83	82	75	66	55	55	49	48	52
1997	Wet	59	69	64	71	77	79	83	82	78	67	64	55	45	44	56
1998	Wet	59	65	59	66	64	71	78	84	78	67	59	54	45	49	54
1999	Normal-Wet	62	64	61	71	74	81	84	82	78	71	63	56	48	48	53
2000	Normal-Wet	59	64	71	70	75	80	81	82	76	66	56	50	48	48	56
er second, T/	Normal-Dry	60	70	67	72	81	81	81	80	77	69	61	54	45	51	57
2002	Normal-Dry	62	64	71	68	74	79	84	82	80	69	59	56	50		
	Average	60	64	67	69	73	78	82	82	77	68	59	53	46	46	54
	Wet	58	62	62	66	70	76	80	82	77	68	61	53	47	46	54
	Normal-Wet	59	65	68	71	76	79	82	81	76	67	60	52	45	46	55
	Normal-Dry	61	63	66	69	73	77	81	82	77	69	60	52	47	46	54
	Dry	60	65	66	69	73	79	82	83	78	69	61	55	46	47	54

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 162: Simulated Temperature at San Joaquin River Below Mariposa Bypass Return (Head of Reach 4B2) (deg. F) - Proposed Action

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														45	55
1980	Wet	56	60	66	70	74	77	80	80	75	68	61	53	45	43	54
1981	Normal-Dry	59	64	69	72	75	82	83	82	77	66	59	54	45	46	52
1982	Wet	60	62	60	63	70	79	83	81	75	67	55	49	49	49	53
1983	Wet	55	55	58	59	65	68	73	81	77	68	62	51	48	40	54
1984	Normal-Wet	65	65	67	69	77	81	85	82	78	65	57	49	44	47	53
1985	Normal-Dry	63	63	72	71	74	80	83	81	74	66	58	48	43	43	54
1986	Wet	58	60	62	67	73	78	83	81	74	67	60	54	44	46	57
1987	Dry	62	64	71	75	77	80	81	81	76	70	58	51	47	45	54
1988	Dry	63	70	70	67	73	78	84	81	76	69	60	51	46	46	50
1989	Normal-Dry	60	65	72	71	76	79	82	81	76	68	59	56	45	46	55
1990	Dry	60	66	71	72	73	79	84	83	78	70	58	54	43	43	55
1991	Normal-Dry	61	66	68	70	75	80	84	82	78	69	60	55	47	46	54
1992	Dry	64	67	72	73	78	79	81	82	76	70	61	52	45	45	52
1993	Wet	64	67	68	70	75	78	83	82	78	70	63	52	46	49	55
1994	Dry	64	65	68	70	75	81	84	83	78	68	56	49	43	49	57
1995	Wet	58	59	63	63	68	77	76	83	79	69	63	60	51	49	53
1996	Normal-Wet	59	67	69	67	72	79	83	82	75	66	55	55	48	48	52
1997	Wet	59	69	64	71	77	79	83	82	78	67	64	55	45	44	56
1998	Wet	60	64	59	66	65	73	78	84	78	67	59	54	45	49	54
1999	Normal-Wet	62	64	61	72	74	81	84	82	78	71	63	56	48	48	53
2000	Normal-Wet	59	65	72	70	75	80	81	82	76	66	56	50	48	48	56
2001	Normal-Dry	60	70	67	72	81	81	81	80	77	69	61	54	45	51	57
2002	Normal-Dry	62	64	71	69	74	79	84	82	80	69	59	56	51		
	Average	61	64	67	69	74	79	82	82	77	68	59	53	46	46	54
	Wet	59	62	62	66	71	76	80	82	77	68	61	53	47	46	55
	Normal-Wet	59	65	68	71	76	79	82	81	76	67	60	52	45	46	55
	Normal-Dry	61	63	66	69	73	77	81	82	77	69	60	52	47	46	54
	Dry	61	65	67	69	74	78	82	83	78	69	61	55	46	47	54

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 163: Simulated Temperature at San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (deg. F) - No-Action Alternative

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														46	56
1980	Wet	56	60	64	68	72	75	80	82	77	70	63	54	47	44	53
1981	Normal-Dry	61	64	70	72	75	83	85	83	79	67	59	55	47	46	51
1982	Wet	57	58	59	63	69	75	83	83	76	68	57	51	49	49	54
1983	Wet	56	56	59	59	65	69	73	82	73	66	60	51	49	42	55
1984	Normal-Wet	65	67	67	69	77	82	86	83	80	66	59	50	45	49	53
1985	Normal-Dry	64	64	73	71	75	81	85	82	75	68	60	49	45	45	55
1986	Wet	56	60	62	67	71	77	84	82	75	69	61	55	45	47	58
1987	Dry	63	65	73	77	78	81	82	82	78	72	59	53	48	46	54
1988	Dry	65	71	72	67	73	79	86	83	79	70	61	52	47	47	51
1989	Normal-Dry	62	66	73	73	76	80	84	82	77	69	61	57	46	47	57
1990	Dry	61	68	73	73	75	80	86	83	79	71	59	55	44	44	55
1991	Normal-Dry	62	64	69	70	75	80	85	83	80	72	61	56	47	48	56
1992	Dry	64	68	72	74	79	81	83	84	78	72	62	54	46	48	53
1993	Wet	65	67	68	70	74	79	83	83	79	72	65	53	47	51	55
1994	Dry	65	66	70	72	76	82	85	84	79	69	57	49	45	51	59
1995	Wet	57	59	63	62	67	75	76	85	80	71	64	62	52	49	53
1996	Normal-Wet	60	65	69	68	72	80	85	84	78	68	57	57	51	50	52
1997	Wet	60	70	65	72	77	80	85	84	80	69	66	56	47	45	55
1998	Wet	59	64	59	66	65	71	78	86	80	67	59	54	45	50	56
1999	Normal-Wet	62	64	62	74	74	82	86	83	80	73	64	57	49	48	53
2000	Normal-Wet	60	65	71	70	75	82	83	84	78	68	59	51	49	49	55
er second, T/	Normal-Dry	59	70	67	73	81	82	83	82	79	71	63	56	47	52	58
2002	Normal-Dry	63	65	72	69	75	81	86	83	81	70	61	57	51		
	Average	61	65	67	70	74	79	83	83	78	69	61	54	47	47	55
	Wet	58	62	62	66	70	75	80	83	77	69	62	55	48	47	55
	Normal-Wet	60	66	68	71	76	80	83	83	78	69	62	53	47	47	55
	Normal-Dry	61	63	67	69	73	78	81	83	78	70	61	53	48	47	55
	Dry	61	66	67	69	74	79	83	84	80	71	63	56	47	47	55

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 164: Simulated Temperature at San Joaquin River Below Eastside Bypass Return (Head of Reach 5) (deg. F) - Proposed Action

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														46	57
1980	Wet	56	60	64	68	72	76	80	82	77	70	63	54	47	44	55
1981	Normal-Dry	60	62	68	71	76	84	85	83	79	67	60	56	47	46	52
1982	Wet	59	60	59	63	70	76	83	83	76	68	57	51	49	49	55
1983	Wet	56	56	59	59	66	69	73	82	73	66	60	52	49	42	55
1984	Normal-Wet	64	64	65	68	78	82	86	83	80	66	59	51	46	49	53
1985	Normal-Dry	62	61	71	70	76	82	85	82	75	68	60	50	45	45	56
1986	Wet	57	60	62	67	71	77	84	82	75	69	61	56	46	47	59
1987	Dry	62	63	71	77	78	82	82	82	78	72	60	54	48	46	55
1988	Dry	63	68	71	68	74	80	86	83	79	70	62	53	47	47	52
1989	Normal-Dry	61	65	72	71	76	81	84	82	77	69	61	57	46	47	58
1990	Dry	60	67	72	73	76	80	86	83	79	71	59	56	44	44	57
1991	Normal-Dry	60	61	67	69	75	80	86	83	80	72	62	56	47	48	56
1992	Dry	64	66	71	74	80	81	83	84	78	72	63	55	46	48	54
1993	Wet	65	66	67	70	74	77	83	83	79	72	64	53	47	51	57
1994	Dry	65	65	69	72	76	81	85	84	79	70	58	50	45	51	59
1995	Wet	58	59	63	63	68	77	76	84	80	71	64	62	52	49	53
1996	Normal-Wet	60	65	68	68	74	80	85	84	78	68	57	57	50	50	54
1997	Wet	60	69	64	71	76	79	84	84	80	69	65	57	47	45	56
1998	Wet	59	63	59	66	65	73	78	86	80	68	59	56	46	50	56
1999	Normal-Wet	61	62	60	71	75	82	86	83	80	73	65	58	49	48	54
2000	Normal-Wet	59	66	71	69	75	82	83	84	78	68	59	51	49	49	57
2001	Normal-Dry	60	69	66	72	82	82	83	82	79	71	64	57	47	52	58
2002	Normal-Dry	61	63	71	69	75	81	86	83	81	70	61	58	51		
	Average	60	64	67	69	74	79	83	83	78	70	61	55	47	48	55
	Wet	59	62	62	66	70	76	80	83	77	69	62	55	48	47	56
	Normal-Wet	59	65	67	70	76	80	83	83	78	69	62	54	47	47	56
	Normal-Dry	60	62	66	69	73	77	81	83	78	70	62	54	48	47	56
	Dry	60	64	67	69	74	79	83	84	80	71	63	57	47	47	56

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 165: Simulated Temperature at San Joaquin River Above Merced Confluence (deg. F) - No-Action Alternative

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														47	55
1980	Wet	57	61	65	68	72	76	80	80	75	68	61	54	47	46	54
1981	Normal-Dry	58	63	67	70	73	80	82	81	77	66	59	54	48	45	52
1982	Wet	58	60	61	66	71	77	82	81	74	66	56	51	48	48	53
1983	Wet	57	58	61	62	68	73	76	80	75	66	60	52	48	44	54
1984	Normal-Wet	62	63	65	68	75	79	83	81	77	65	58	51	46	49	53
1985	Normal-Dry	61	61	69	69	73	79	82	80	74	66	58	50	46	46	54
1986	Wet	58	61	64	68	72	78	82	80	74	67	59	54	47	48	56
1987	Dry	60	62	68	73	75	78	80	80	75	69	58	53	48	48	54
1988	Dry	61	66	67	66	71	77	83	81	76	68	59	52	48	48	51
1989	Normal-Dry	59	63	69	69	74	78	81	80	75	67	60	56	48	47	54
1990	Dry	58	64	68	70	72	78	83	82	77	69	58	55	45	46	55
1991	Normal-Dry	60	64	66	69	74	79	83	82	78	70	60	55	48	47	54
1992	Dry	62	64	69	72	77	79	81	82	77	70	61	53	47	48	53
1993	Wet	63	65	67	69	74	79	83	81	77	69	62	53	48	50	55
1994	Dry	62	63	66	69	73	80	83	82	77	68	57	50	46	50	57
1995	Wet	57	59	64	64	69	76	79	83	78	69	62	59	52	49	53
1996	Normal-Wet	59	65	68	66	71	78	82	81	75	66	57	55	50	50	52
1997	Wet	59	66	63	69	76	78	83	82	78	67	62	55	48	48	55
1998	Wet	58	65	60	68	67	74	80	83	78	67	58	55	47	51	55
1999	Normal-Wet	60	62	61	69	72	79	83	81	77	69	62	56	50	49	53
2000	Normal-Wet	58	63	68	68	73	79	80	81	75	66	58	52	50	49	55
er second, T/	Normal-Dry	58	67	65	70	78	79	80	80	77	68	61	55	47	51	56
2002	Normal-Dry	60	63	68	67	73	78	83	81	79	68	59	56	51		
	Average	59	63	66	68	73	78	81	81	76	68	59	54	48	48	54
	Wet	58	62	63	67	71	76	80	81	76	67	60	54	48	48	54
	Normal-Wet	59	64	66	69	74	78	81	81	76	67	60	53	48	48	55
	Normal-Dry	60	62	66	68	73	77	81	81	76	68	60	53	48	47	54
	Dry	59	64	66	68	73	78	82	82	78	69	61	55	48	48	54

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 166: Simulated Temperature at San Joaquin River Above Merced Confluence (deg. F) - Proposed Action

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														47	55
1980	Wet	57	62	65	69	72	76	80	80	75	68	61	54	47	46	54
1981	Normal-Dry	59	63	68	70	74	81	83	81	77	66	59	55	48	45	52
1982	Wet	59	61	61	66	72	77	82	81	75	66	57	51	48	48	54
1983	Wet	57	58	61	62	69	73	76	81	75	67	61	52	48	44	54
1984	Normal-Wet	63	64	66	68	76	80	84	81	78	65	58	51	46	49	54
1985	Normal-Dry	61	62	70	70	74	80	83	80	74	66	59	50	46	46	55
1986	Wet	59	62	64	68	73	78	82	80	74	67	60	55	47	48	57
1987	Dry	61	63	69	74	75	79	80	80	76	70	58	53	49	48	54
1988	Dry	62	67	69	66	72	77	83	81	76	68	60	53	48	48	51
1989	Normal-Dry	60	64	71	70	75	78	81	80	76	68	60	56	48	47	55
1990	Dry	59	65	70	70	73	78	83	82	77	70	59	55	45	46	55
1991	Normal-Dry	60	63	67	69	74	79	83	82	78	70	61	56	48	47	54
1992	Dry	63	65	70	72	78	79	81	83	77	71	62	54	47	48	53
1993	Wet	63	66	66	69	74	78	83	81	77	70	63	53	48	50	55
1994	Dry	63	64	68	70	74	80	84	82	78	68	57	50	46	50	57
1995	Wet	58	59	64	64	70	77	79	83	78	69	63	60	52	49	53
1996	Normal-Wet	59	65	68	67	72	78	82	82	75	66	57	56	49	50	53
1997	Wet	59	67	64	71	76	79	83	83	79	67	63	56	48	48	55
1998	Wet	59	64	60	68	68	74	81	83	78	67	59	55	47	51	55
1999	Normal-Wet	60	63	60	71	73	80	83	81	78	70	63	56	50	49	53
2000	Normal-Wet	58	63	70	69	74	79	81	81	76	66	58	52	50	49	56
2001	Normal-Dry	59	68	66	71	79	80	80	80	77	68	62	55	47	51	57
2002	Normal-Dry	61	63	70	68	73	78	83	81	79	68	60	56	51		
	Average	60	63	66	69	73	78	82	81	77	68	60	54	48	48	54
	Wet	59	62	63	67	72	77	81	81	76	68	61	54	48	48	55
	Normal-Wet	59	64	67	70	75	79	81	81	76	67	61	53	48	48	55
	Normal-Dry	60	63	66	69	73	78	81	81	77	69	60	54	48	47	55
	Dry	60	64	66	69	74	78	82	82	78	69	62	56	48	48	55

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 167: Simulated Temperature at San Joaquin River Below Merced Confluence (deg. F) - No-Action Alternative

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														48	55
1980	Wet	56	60	64	66	69	76	80	79	71	65	59	53	48	46	53
1981	Normal-Dry	58	62	67	69	72	80	82	80	76	65	58	54	48	46	52
1982	Wet	57	59	59	63	67	74	79	79	73	62	55	50	48	49	53
1983	Wet	56	57	60	60	67	70	73	77	71	62	59	52	49	46	54
1984	Normal-Wet	61	63	64	67	74	78	83	81	77	64	57	52	50	49	53
1985	Normal-Dry	60	61	69	68	71	78	82	80	73	65	57	50	46	46	54
1986	Wet	58	60	62	65	70	77	82	80	73	66	58	54	46	48	56
1987	Dry	60	62	68	72	73	78	80	79	75	68	57	52	48	48	54
1988	Dry	61	66	67	65	70	76	83	80	76	67	58	51	48	48	51
1989	Normal-Dry	58	62	68	68	72	77	81	80	75	67	59	55	47	48	54
1990	Dry	57	63	67	68	71	77	83	82	77	68	56	53	46	46	55
1991	Normal-Dry	58	61	65	67	71	78	82	81	77	68	59	53	48	48	54
1992	Dry	61	64	68	70	75	78	81	82	76	68	58	52	47	48	52
1993	Wet	63	64	63	64	70	75	81	75	72	64	61	52	48	50	55
1994	Dry	61	62	65	66	70	78	80	82	77	66	55	50	47	50	55
1995	Wet	57	58	62	62	66	69	76	80	74	62	61	58	51	50	53
1996	Normal-Wet	57	62	66	64	68	78	82	81	75	64	56	55	50	50	52
1997	Wet	57	64	62	66	73	77	82	82	78	66	61	54	48	49	54
1998	Wet	57	63	59	66	65	71	77	79	71	62	58	55	48	51	54
1999	Normal-Wet	58	62	60	63	69	78	83	81	77	68	61	55	50	49	52
2000	Normal-Wet	56	60	67	64	70	79	80	80	75	64	57	51	50	49	55
er second, T/	Normal-Dry	58	66	63	66	73	78	79	79	76	67	59	54	48	51	55
2002	Normal-Dry	59	62	67	65	69	77	82	80	78	66	58	55	51		
	Average	58	62	64	66	70	76	80	80	75	65	58	53	48	48	54
	Wet	58	61	61	64	68	74	79	79	73	64	59	54	48	49	54
	Normal-Wet	57	62	65	66	71	78	81	80	75	65	59	53	48	48	54
	Normal-Dry	59	61	64	66	70	75	79	79	74	66	59	52	48	48	54
	Dry	58	62	64	65	70	75	81	80	76	66	60	54	48	49	54

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Table 168: Simulated Temperature at San Joaquin River Below Merced Confluence (deg. F) - Proposed Action

WY		Mar 1-15	Mar 16-31	Apr 1-15	Apr 16-30	May 1-31	Jun 1-30	Jul 1-31	Aug 1-31	Sep 1-30	Oct 1-31	Nov 1-11	Nov 12-30	Dec 1-31	Jan 1-31	Feb 1-28
1979	Normal-Wet														48	55
1980	Wet	56	60	64	66	69	76	80	79	72	65	60	53	48	46	53
1981	Normal-Dry	58	62	68	70	73	81	82	81	77	66	59	54	48	46	52
1982	Wet	57	60	59	63	67	74	79	80	73	62	55	51	48	49	53
1983	Wet	56	57	60	60	67	70	73	77	71	62	59	52	49	46	54
1984	Normal-Wet	62	63	65	68	75	79	83	81	77	64	57	52	50	49	54
1985	Normal-Dry	61	61	70	69	72	79	82	80	74	65	58	50	46	46	54
1986	Wet	58	60	62	65	70	77	82	80	73	66	59	54	46	48	57
1987	Dry	60	62	69	73	74	78	80	80	76	69	58	52	48	48	54
1988	Dry	62	67	68	66	71	77	83	81	76	68	59	52	48	48	51
1989	Normal-Dry	59	63	70	70	73	77	81	80	75	67	59	55	47	48	55
1990	Dry	58	65	69	69	72	77	83	82	77	69	57	54	46	46	55
1991	Normal-Dry	59	62	66	68	73	78	83	81	78	69	60	54	48	48	54
1992	Dry	62	65	69	71	76	79	81	82	76	69	59	53	47	48	53
1993	Wet	63	65	63	64	70	76	81	76	72	64	62	53	48	50	55
1994	Dry	63	63	67	67	71	79	80	82	77	66	56	50	47	50	55
1995	Wet	58	58	62	62	66	68	76	80	75	62	61	59	52	50	53
1996	Normal-Wet	57	62	67	65	68	78	82	81	75	65	56	55	50	50	53
1997	Wet	57	65	63	69	74	79	83	82	78	67	62	55	48	49	54
1998	Wet	57	63	59	66	65	70	77	79	71	63	58	55	48	51	54
1999	Normal-Wet	59	62	60	66	70	79	83	81	77	69	62	56	50	49	52
2000	Normal-Wet	56	61	69	66	72	79	80	81	75	65	57	51	50	49	55
2001	Normal-Dry	58	68	65	68	74	79	80	79	77	67	60	55	48	51	56
2002	Normal-Dry	60	62	69	67	70	77	82	80	79	67	58	55	51		
	Average	59	62	65	67	71	77	81	80	75	66	59	54	48	48	54
	Wet	58	61	61	64	68	74	79	79	73	64	60	54	48	49	54
	Normal-Wet	58	63	66	68	72	78	81	80	75	66	60	53	48	48	55
	Normal-Dry	60	62	65	67	71	76	79	79	74	66	59	53	48	48	54
	Dry	59	63	65	66	71	76	81	80	76	66	60	55	48	49	54

Notes:

Summarized from SJR5Q flow and temperature model

Simulation Period: Jan 1980 - Sep 2003

Year type as defined by the Restoration Year Types

Key: Deg. = degree, F = Fahrenheit

Attachment 4

Groundwater Modeling Output – Schmidt Method

Modeling

SAN JOAQUIN RIVER
RESTORATION PROGRAM

June 2009

Table 1.
Depth to Groundwater, Long-Term Average for No-Action Alternative and Proposed Action

Month	Average of All Years (feet)		
	No-Action Alternative	Proposed Action)	Change from No-Action Proposed Action
Exeter Irrigation District	75.6	76.3	-0.74 (-0.98%)
Ivanhoe Irrigation District	85.9	86.2	-0.33 (-0.38%)
Lindmore Irrigation District	71.0	72.1	-1.10 (-1.54%)
Lindsay-Strathmore Irrigation District	59.7	60.1	-0.36 (-0.60%)
Orange Cove Irrigation District	44.5	47.2	-2.73 (-6.13%)
Tulare Irrigation District	152.9	154.0	-1.09 (-0.71%)
Lower Tule River Irrigation District	167.9	168.8	-0.88 (-0.52%)
Porterville Irrigation District	60.5	61.7	-1.16 (-1.92%)
Saucelito Irrigation District	176.3	177.4	-1.08 (-0.61%)
Delano-Earlimart Irrigation District	180.5	181.7	-1.24 (-0.69%)
Shafter-Wasco Irrigation District	328.1	328.9	-0.82 (-0.25%)
Southern San Joaquin Municipal Utility District	177.7	177.8	-0.11 (-0.06%)
Arvin Edison Water Storage District	410.0	412.8	-2.75 (-0.67%)
Chowchilla Water District	153.8	154.6	-0.83 (-0.54%)
Madera Irrigation District	153.8	154.0	-0.21 (-0.14%)

Schmidt Method Calculations
Notes:
Year type as defined by the Restoration Year Types
(%) indicates percent change from No-Action Alternative

Table 2.
Groundwater Pumping, Long-Term Average for No-Action Alternative and Proposed Action

Month	Average of All Years (acre-feet)		
	No-Action Alternative	Proposed Action	Change from No-Action
			Proposed Action
Exeter Irrigation District	20,000	20,908	908 (4.54%)
Ivanhoe Irrigation District	16,000	16,476	476 (2.98%)
Lindmore Irrigation District	34,000	34,049	49 (0.14%)
Lindsay-Strathmore Irrigation District	7,000	7,929	929 (13.26%)
Orange Cove Irrigation District	41,000	42,324	1,324 (3.23%)
Tulare Irrigation District	137,000	141,873	4,873 (3.56%)
Lower Tule River Irrigation District	134,000	142,284	8,284 (6.18%)
Porterville Irrigation District	23,000	24,323	1,323 (5.75%)
Saucelito Irrigation District	15,000	16,572	1,572 (10.48%)
Delano-Earlimart Irrigation District	26,000	30,438	4,438 (17.07%)
Shafter-Wasco Irrigation District	55,000	57,146	2,146 (3.90%)
Southern San Joaquin Municipal Utility District	49,000	52,630	3,630 (7.41%)
Arvin Edison Water Storage District	186,000	196,035	10,035 (5.40%)
Chowchilla Water District	93,000	98,647	5,647 (6.07%)
Madera Irrigation District	153,000	160,390	7,390 (4.83%)

Schmidt Method Calculations
Notes:
Year type as defined by the Restoration Year Types
(%) indicates percent change from No-Action Alternative

Attachment 5

Air Quality Modeling Output – URBEMIS

Modeling

SAN JOAQUIN RIVER
RESTORATION PROGRAM

June 2009

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\weirichj\Desktop\SJ River Restoration 07110191.01\EA_IS\SJRR EA IS.urb924

Project Name: SJRR EA IS

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
2011	0.16	1.13	0.82	0.00	0.33	0.09	0.42	0.07	0.09	0.15	132.03
Fine Grading 09/01/2011-11/30/2011	0.16	1.13	0.82	0.00	0.33	0.09	0.42	0.07	0.09	0.15	132.03
Fine Grading Dust	0.00	0.00	0.00	0.00	0.33	0.00	0.33	0.07	0.00	0.07	0.00
Fine Grading Off Road Diesel	0.15	0.95	0.65	0.00	0.00	0.09	0.09	0.00	0.08	0.08	93.12
Fine Grading On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	26.17
Fine Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.74

Phase Assumptions

Phase: Fine Grading 9/1/2011 - 11/30/2011 - Invasive Vegetation Removal

Total Acres Disturbed: 660

Maximum Daily Acreage Disturbed: 1

Fugitive Dust Level of Detail: Default

10 lbs per acre-day

On Road Truck Travel (VMT): 200

Off-Road Equipment:

10 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Operational Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\weirichj\Desktop\SJ River Restoration 07110191.01\EA_IS\SJRR EA IS.urb924

Project Name: SJRR EA IS

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

OPERATIONAL EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Restoration Area	0.00	0.01	0.04	0.00	0.00	0.00	3.71
TOTALS (tons/year, unmitigated)	0.00	0.01	0.04	0.00	0.00	0.00	3.71

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Restoration Area		1.00	acres	1.00	1.00	19.89
					1.00	19.89

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.4	1.2	98.6	0.2

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Truck < 3750 lbs	12.1	2.5	90.9	6.6
Light Truck 3751-5750 lbs	21.1	0.9	98.6	0.5
Med Truck 5751-8500 lbs	11.9	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.3	7.7	15.4	76.9
Heavy-Heavy Truck 33,001-60,000 lbs	2.8	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	64.1	35.9	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	20.0	20.0
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Restoration Area				2.0	1.0	97.0

Operational Changes to Defaults

The urban/rural selection has been changed from Urban to Rural

Commercial-based non-work rural trip length changed from 6.6 miles to 20 miles

Commercial-based customer rural trip length changed from 6.6 miles to 20 miles