Appendix 7A

Groundwater Model Documentation

This appendix provides information about the assumptions, modeling tools, and the methods used for the Coordinated Long-term Operation of the Central Valley Project (CVP) and State Water Project (SWP) Environmental Impact Statement (EIS) impact analysis including information for the No Action Alternative simulation. The appendix also describes model output processing and interpretation methods used for the impacts analysis and descriptions. Additional information pertaining to the development of the analytical tools, incorporating climate change, and using input data from other models is also provided.

This appendix is organized into three main sections that are briefly described below:

- Section 7A.1: Groundwater Modeling Methodology
  - The groundwater impacts analysis uses the Central Valley Hydrologic Model (CVHM) to forecast effects of the alternatives on the long-term operations and the environment. This section provides information about the overall analytical framework and how some of the model input information obtained from other models was processed using analytical tools.
- Section 7A.2: CVHM Modeling Simulations and Assumptions
  - This section provides a brief description of the assumptions for CVHM simulations of the No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5.
- Section 7A.3: CVHM Modeling Results
  - This section describes the model simulation outputs used in the analysis and interpretation of modeling results for the alternatives impacts assessment. A description of post-processing tools is provided along with the different types of output display to facilitate data interpretation.

7A.1 Groundwater Modeling Methodology

This section summarizes the groundwater modeling methodology used for the No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5. It describes the overall analytical framework and contains descriptions of the key analytical and numerical tools and approaches used in evaluating the alternatives. The project alternatives include several major components that will influence CVP and SWP operations and the hydrologic and hydrogeologic responses of the system.

In evaluating the No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5, climate change assumptions centered on year 2025 (for

assumed conditions at 2030) were used to develop modified climate input files. The modeling assumptions are provided in more detail in Section 7A.2.

The impacts on groundwater in the Central Valley and the CVP and SWP export service areas because of the project were analyzed using CVHM (USGS 2009). CVHM is a three-dimensional saturated groundwater flow model based on the widely used MODFLOW code (USGS 2000) and incorporates a number of modeling packages to simulate streamflow, crop demand, groundwater pumping, and subsidence.

7A.1.1 Overview of the Modeling Approach

To support the groundwater impact analysis of the alternatives, modeling of the physical groundwater system in the Central Valley has been undertaken to forecast changes to conditions affecting groundwater resources in areas that use CVP and SWP surface water deliveries.

CVHM is a calibrated historical model that includes a 42-year simulation period from water years 1962 through 2003. The model domain encompasses the entire Central Valley, including Sacramento Valley, San Joaquin Valley (including Tulare Basin), and the Sacramento-San Joaquin Delta. CVHM simulates primarily subsurface and limited surface hydrologic processes using a uniform grid-cell spacing of 1 mile.

CVHM was run over the 42-year hydrologic period, and boundary conditions were modified to reflect anticipated changes in surface water availability, including some potential effects of climate change. Surface water flows from operations models (descriptions of CalSim II methodology is included in Appendix 5A) were used to define selected surface water boundary conditions in CVHM. The linkage between CalSim II surface flows and CVHM inputs is further described below.

Future climate parameters centered on year 2025 were developed using the Variable Infiltration Capacity (VIC) model. Changes to the historical hydrology related to the future climate were applied in the CalSim II model and combined with the assumed operations for each alternative (Appendix 5A). The CalSim II model simulates the operation of the major CVP and SWP facilities in the Central Valley and generates river flows, exports, reservoir storage, deliveries, and other parameters for use with each alternative. River flows based on operational assumptions and reflected in the reservoir releases simulated in CalSim II are included in selected boundary conditions in the CVHM input files, along with the Delta exports to San Joaquin and Tulare service areas, and the surface water deliveries to CVP and SWP users in the Sacramento Valley. CVHM was used to forecast the changes in groundwater levels and groundwater pumping with implementation of the alternatives, and results are processed for input into the Statewide Agricultural Production (SWAP) model. The SWAP model then forecasts impacts on agricultural production based on pumping lifts and cost of groundwater pumping, as described in Chapter 12, Agricultural Resources. Figure 7A.1 shows the modeling tools applied in the groundwater impacts assessment and the relationship between these tools. Each model included in

Figure 7A.1 provides information to the subsequent "downstream" model in order to support the impacts analysis.

The results from this suite of computer models were used to assess potential groundwater effects from implementing each alternative considered in the EIS.

Modeling objectives included evaluating the following potential changes related to groundwater resources because of the various alternatives:

- Changes in groundwater elevations, which result from changes in groundwater use and could affect nearby municipal, agricultural, and domestic well yields
- Changes to groundwater quality based on a potential inducement of migration of poor-quality groundwater because of groundwater flow changes

7A.1.2 Key Components of the Groundwater Modeling Framework

7A.1.2.1 Model Function

CVHM was used to forecast groundwater level changes and other impacts to groundwater resulting from changes in assumed surface water deliveries from the CVP and SWP into the service areas located north and south of the Delta. More specifically, surface water operational changes from project implementation along with the effects of climate change were incorporated into CVHM as modified boundary inflows into the model domain and as semi-routed and nonrouted surface water deliveries to each CVHM water balance subregion (WBS). In addition, forecast climate variations were incorporated as modified precipitation and reference evapotranspiration (ET) rates in the model input files.

The overall construction and calibration of CVHM was left unchanged during this analysis. The only modifications to CVHM involved the prescribed surface water inflows and deliveries, which were modified based on simulations performed using CalSim II, as well as modified reference ET and precipitation input files to reflect potential climate change conditions centered on year 2025. CalSim II flows reflect operations in the Delta based on assumptions related to future operations of the project (see Chapter 5, Surface Water Resources and Water Supplies).

The active CVHM domain was subdivided into 21 WBSs, as originally defined by the California Department of Water Resources (DWR) (Figure 7A.2). During model simulations, applied water requirements for each WBS were computed based on crop type and available water from precipitation, shallow groundwater, and surface water (limited by surface water rights).

Selected major streams flowing through the Central Valley were explicitly represented in CVHM. Observed USGS gage flows were used as inflows into the model domain for natural, unregulated rivers and streams. Reservoir releases on regulated rivers were also used as boundary inflows into the model domain. The reservoir releases were modified for each alternative according to operational changes and are represented by modified time-series flow data obtained from the CalSim II simulations. Surface water deliveries to meet a portion of the applied water demands were diverted directly from the rivers, according to water rights

constraints. Additional surface water was delivered through "nonrouted" methods in the model. Nonrouted surface water deliveries represent water transfers or surface water deliveries to a WBS not connected to a stream or major canal. This conveyance typically occurs through small canals or diversion ditches (USGS 2009). Some irrigation canals and aqueducts were not included in CVHM, such as the California Aqueduct and the Delta-Mendota Canal. Water delivered through these conveyances was simulated in CVHM as nonrouted deliveries, directly added to the destination WBS. The deliveries to WBSs south of the Delta from the CVP and SWP and associated conveyance losses were estimated from CalSim II simulations and included in CVHM. The surface water diversion flows for the CVP and SWP contractors and settlement contractors in the Sacramento Valley were also obtained from CalSim II simulations for each alternative.

7A.1.2.2 Computer Code Description

CVHM is a regional groundwater modeling application based on the MODFLOW-2000 (MF2K) computer code (USGS 2000) and incorporates a variety of additional modules that were specifically developed to interact with MF2K and increase the capabilities of the overall modeling package. The additional modules incorporated into the CVHM application are summarized in Table C1 of USGS Professional Paper 1766 (USGS 2009). The package that is responsible for simulating the majority of the agricultural water balance is the Farm Process (FMP) (USGS 2006). Within the FMP documentation, the WBSs are referred to as "farms"; WBS and farms are used interchangeably in this text. FMP computes the applied water demand for each farm based on crop types specified in each model cell and computes the availability of water from "natural" sources such as precipitation and shallow groundwater. After the available natural water is allocated, FMP computes the amount of water that needs to be delivered from other sources, such as surface water deliveries (routed and nonrouted) and groundwater pumping to meet the remaining applied water demand.

Another important module integrated into CVHM is the Stream Flow Routing (SFR1) package. This package simulates the routing of surface water through virtual channels within the model domain, accounts for surface water diversions and deliveries to individual WBSs, tracks the flow and associated stage in surface water reaches, and computes stream-aquifer exchange.

CVHM was chosen to simulate the impacts of the alternatives for three main reasons:

1. Readily available and peer-reviewed. CVHM was developed, calibrated, and tested by USGS and is based on a widely recognized computer code. It is publicly available, and extensive documentation has been published describing CVHM as well as all the modules and packages that make up the model.

2. Geographic extent. A large potentially impacted area to be evaluated as part of this project includes the Sacramento Valley and the San Joaquin Valley (including the Tulare Lake area). Surface water operational changes resulting

from project operations are defined at the margins of the Central Valley. The CVHM domain covers the entire Central Valley and allows for the efficient imposition of boundary conditions throughout the basin.

3. Model subareas and discretization. CVHM is divided into 21 WBSs that correspond to the historical water balance regions identified by DWR. Water balances are computed for each WBS by the model. This distribution of areas in the Central Valley is consistent with models used by other resource teams, provides for consistent model reporting to the other teams, and allows for efficient sharing of data with other models.

7A.1.2.3 General Numerical Model Description

CVHM simulates surface water flows, groundwater flows, and land subsidence in response to stresses from water use and climate variability throughout the entire Central Valley. It uses the MF2K (USGS 2000) groundwater flow model code combined with the FMP modular package to simulate groundwater and surface water flow, irrigated agriculture, and other key processes in the Central Valley on a monthly basis from April 1961 through September 2003. CVHM is discretized laterally over a 20,000-square-mile area and vertically into 10 layers ranging in thickness from 50 feet near the land surface to 400 feet at depth. Layers 4 and 5 represent the Corcoran Clay member where it exists in portions of the San Joaquin Valley. In the Sacramento Valley, the Corcoran Clay member is not present; therefore, the model layering effectively consists of eight layers.

The FMP allocates water deliveries, simulates crop-applied water demand processes, and computes mass balances for the 21 WBSs (or farms) in CVHM. The FMP was developed for MF2K to estimate applied irrigation water allocations from conjunctively used surface water and groundwater. It is designed to simulate the demand components representing crop irrigation requirements and on-farm inefficiency losses, and the supply components representing surface water deliveries and supplemental groundwater pumping. The FMP also simulates additional head-dependent inflows and outflows such as canal losses and gains, surface runoff, surface water return flows, evaporation, transpiration, and deep percolation of excess water. Unmetered pumping and surface water deliveries for the 21 WBSs are also included within the FMP (USGS 2006).

The original calibration of CVHM by USGS was accomplished using a combination of trial-and-error and automated methods. An autocalibration code called UCODE-2005 (USGS 2005) was used to help assess the ability of CVHM to estimate the effects of changing stresses on the hydrologic system. Simulated changes in water levels, streamflows, streamflow losses, and subsidence through time were compared by USGS to those measured in wells, at streamflow gages, and at extensometer sites. For model calibration, USGS screened groundwater levels and surface water stages to obtain a calibration target data set that is distributed spatially (geographically and vertically) throughout the Central Valley; distributed temporally throughout the simulation period (1961–2003); and available during both wet and dry climatic regimes. From the available wells records, a subset of 170 comparison wells was selected based on perforation

depths, completeness of record, and locations throughout the Central Valley (USGS 2009). No changes were made to physical parameter values in CVHM for this project. A more detailed description of CVHM is in USGS Professional Paper 1766 (USGS 2009).

7A.2 CVHM Modeling Simulations and Assumptions

As described in Section 7A.1, groundwater modeling was performed for evaluating the alternatives considered in the EIS. This section describes the assumptions for the CVHM simulations of the No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5.

The following model simulations were performed as the basis of evaluating the impacts of the No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5:

- No Action Alternative
- Second Basis of Comparison
- Alternative 1 – for CVHM simulation purposes, considered the same as Second Basis of Comparison
- Alternative 2 – for CVHM simulation purposes, considered the same as No Action Alternative
- Alternative 3
- Alternative 4 – for CVHM simulation purposes, considered the same as Second Basis of Comparison.
- Alternative 5

Assumptions for each of these alternatives were developed with the surface water modeling tools and are described in Appendix 5.

The general CVHM modeling assumptions described below pertain to all the baseline and alternative runs.

7A.2.1 Climate Change Assumptions

Climate variables of interest from a climate-change perspective within CVHM include precipitation and reference ET, which are among the required inputs for the FMP module to compute the applied water demand. These two variables are formatted as two-dimensional model array input files with one value assigned to each surficial model grid cell.

The original historical climate input data for CVHM were developed for the simulation period 1961-2003 from Parameter-Elevation Regressions on Independent Slopes Model (PRISM) data (Climate Source 2006). For precipitation, PRISM data were interpolated onto the model domain, and reference ET data were computed from PRISM temperature data. Reference ET data were computed using the Penman-Monteith estimate of potential ET and are used to evaluate the crop potential ET in combination with crop coefficients, and minimum and maximum temperatures for each stress period (USGS 2009).

For the alternative simulations, climate conditions centered on year 2025 were assumed. Therefore, to be consistent with the other water supply and economics models, the climate input data for CVHM were modified to represent potential climate conditions centered on year 2025. A more detailed description of how climate change was incorporated into the CVHM forecast simulations follows.

The CVHM historical monthly precipitation and reference ET values were modified to incorporate potential climate change based on the median climate change scenario for the early long-term period (centered on 2025) (DWR, Reclamation, USFWS, and NMFS 2013). The analysis uses five statistically representative climate change scenarios to characterize the central tendency and the range of the ensemble uncertainty, including projections representing drier, less warming; drier, more warming; wetter, more warming; and wetter, less warming conditions as compared with the median projection. Climate change scenarios were developed from an ensemble of 112 bias-corrected, spatially downscaled global climate model (GCM) simulations. These GCM simulations were from 16 climate models for Special Report on Emissions Scenarios (SRES) A2, A1B, and B1 (Maurer et al. 2007) from the Coupled Model Intercomparison Project Phase 3 that are part of the Intergovernmental Panel on Climate Change Fourth Assessment Report. The forecast changes over the 30-year climatological period centered on 2025 (i.e., 2011-2040 to represent 2030 timeline) were combined with a set of historically observed temperature and precipitation (Hamlet and Lettenmaier 2005) to generate climate sequences that maintain important multiyear variability. The approach uses a technique called “quantile mapping”, which maps the statistical properties of climate variables from one data subset with the time series of events from a different data subset.

Historical temperature and precipitation data gridded to a 1/8 degree (°) spatial resolution across California (Hamlet and Lettenmaier 2005) were obtained from the Surface Water Modeling Group at the University of Washington (http://www.hydro.washington.edu). These data are based on the National Weather Service cooperative network of weather observations stations, augmented by information from the higher quality Global Historical Climatology Network stations. The Hamlet and Lettenmaier (2005) dataset includes the period from January 1915 through December 2003.

The historical and modified temperature (maximum and minimum values) based on the median early long-term climate-change scenario (centered on 2025) were used in the VIC hydrological model (Liang et al. 1994; Reclamation 2011) to simulate reference ET using the Penman–Monteith method (Allen et al. 1998).

Based on the above assumptions and methods, two sets of monthly fractional changes (i.e., perturbation factors) were computed to adjust the CVHM historical precipitation and reference ET input model array files. The first set of monthly fractional changes was computed from the historical and modified precipitation at each 1/8° VIC grid cell (future precipitation divided by historical precipitation). Similarly, the second set of monthly fractional changes was computed from reference ET simulated using historical and modified climate inputs that were computed using the Penman–Monteith method (Allen et al. 1998) embedded in the VIC hydrological model (simulated future reference ET divided by simulated reference ET). The fractional changes were computed for the historical period April 1961 through September 2003 for consistency with the CVHM simulation period.

The monthly fractional changes at 1/8° VIC grid cell were then applied to each CVHM monthly precipitation and reference ET data set at the corresponding CVHM grid cells by spatially mapping the two sets of grids. A utility tool was developed for intersecting the CVHM grid cells with the 1/8° VIC grids to assign fractional changes from the 1/8° VIC grid cell to historical precipitation and reference ET at each surficial CVHM cell to produce modified precipitation and reference ET values for planning level CVHM simulations that incorporate potential future climate change centered on year 2025. Figure 7A.3 illustrates the relationship between the VIC model grid and the CVHM grid.

7A.2.2 Land Use Assumptions

In CVHM, "the land use attributes are defined in the model on a cell-by-cell basis and include urban and agricultural areas, water bodies, and natural vegetation. The land use that covered the largest fraction of each 1-mi² model cell was the representative land use specified for that cell" (USGS 2009). Further, the agricultural land use is divided into 12 DWR Class 1 crop categories, also referred to as "virtual crops". As described in USGS 2009, the process of identifying a representative land use type and crop category for each model cell is very complex over the 42-year hydrologic period with different climate variations. This type of data is not readily available publicly, and other land use coverages require extensive processing to convert it into a format suitable for CVHM simulations. Thus, generating future land use changes for each cell of the CVHM grid was not undertaken in the impacts analysis in this EIS. In addition, other related FMP input files (such as crop coefficients and irrigation efficiencies) change over time and need to be updated accordingly with the land use.

For the groundwater modeling, the land use distribution for water year 2003 was used for the entire forecast simulation period. This was the most recent land use data available in a format appropriate for the model simulations. The limitation of using the 2003 land use distribution is that some of the most recent changes to crop production in the Central Valley over the past decade are not included in the simulations. In addition, projections of land use changes because of economic effects and climate change are not considered in CVHM, nor are the potential crop changes in response to water supply availability from CVP and SWP operational changes from the alternatives (see Chapter 12, Agricultural

Resources, for a discussion of changes in crops because of water supply availability and costs). However, these assumptions are the same for the No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5; and are therefore adequate for the comparative analysis required in the EIS. There have been changes in crop patterns since 2003; however, those changes would be consistent in the No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5.

7A.2.3 Stream Boundary Inflows Assumptions

CVHM includes 43 stream boundary inflows, which represent smaller natural streams as well as managed reservoir outflows. Of these, 13 inflows were linked to CalSim II reservoir releases. Natural stream inflows were kept unchanged from the original CVHM and therefore are linked to the historical climate data. It should be noted that CalSim II does not include the Tulare Lake area, and all stream inflows in that area were kept the same as those from the original CVHM.

For each alternative simulation, the surface water inflows at specific locations are updated in the SFR input file based on time series computed by CalSim II. Table 7A.1 lists the CVHM inflow locations at which updated CalSim II flows were applied based on simulation results from the corresponding CalSim II nodes. Figure 7A.4 provides a map with the stream boundary inflow locations in CVHM.

Table 7A.1 CVHM Modified Inflow Locations

CVHM Node ID	Description	CalSim II Equivalent Nodes
AMER_374	American River Downstream of Lake Natoma + South Folsom Canal	C9 + D9
MOKE_173	Mokelumne River below Comanche Reservoir	I504 + Original CVHM Diversions on Mokelumne River
CALV_161	Calaveras River (release from New Hogan Reservoir)	C92
STAN_146	Stanislaus River (below Goodwin + Oakdale Canal + SSJ Canal)	C520 + D520B + D520C
TUOL_135	Tuolumne River (Don Pedro Reservoir Release)	C81
SACR_205	Sacramento River (Keswick Reservoir Release)	C5
STON_263	Stony Creek (Black Butte Reservoir Release)	C42
FEAT_341	Feather River below Oroville + Palermo Canal	C6 + D6
YUBA_349	Yuba River below Englebright + Deer Creek inflow + French Dry Creek inflow	C230 + D230
MERC_116	Merced River (Lake McClure outflow)	C20
CHOW_080	Chowchilla River (Eastman Lake outflow)	C53
FRES_069	Fresno River (Hensley Lake outflow)	C52
SANJ_054	SJR at Friant Dam (Millerton Lake outflow)	C18

7A.2.4 Project Deliveries Assumptions

CVHM includes two different methods to deliver surface water diversions to a WBS: semi-routed deliveries and nonrouted deliveries. These deliveries occur through the interaction of the SFR and FMP modules and the WBS.

Semi-routed deliveries occur through the SFR package to account for water that is routed through stream networks. With the SFR package, CVHM conveys water from streams and canals as semi-routed deliveries to WBSs through the FMP based on model-computed applied water demand (USGS 2009).

The nonrouted delivery process allows the model to obtain surface water from a source that is not simulated with the stream network. For instance, not all canals are physically simulated within CVHM, but the water conveyed through those canals can still be delivered to the appropriate WBSs without actually simulating the conveyance features explicitly.

In the CVHM simulations, the nonrouted surface water supply components have first delivery and use priority, and semi-routed surface water deliveries have second priority. If the WBSs water delivery requirements computed by the crop consumptive use through FMP are not met using surface water, the FMP computes the amount of supplemental groundwater necessary to be pumped from "farm" (agricultural production) wells to satisfy the total WBS water demand (USGS 2009). The nonrouted and semi-routed surface water deliveries are simulated as monthly transient time series that set the upper bound of available surface water for the WBSs. The actual diversions and deliveries for each WBS are driven by agricultural water demand.

Within the CVHM configuration, nonrouted deliveries tend to be associated with the south-of-Delta exports to the San Joaquin Valley service areas, because the California Aqueduct and the Delta-Mendota Canal are not simulated in the model. Semi-routed deliveries occur in areas where diversions from streams and canals are simulated for both settlement contractors and riparian diverters. Because of the difference in water rights allocations and the different CVHM characteristics in the Sacramento Valley versus the San Joaquin Valley, the surface water allocations are simulated differently, as described below. Figure 7A.5 shows the surface water delivery types for each WBS as simulated in CVHM.

For the groundwater impacts simulations, the calibrated historical CVHM was set up to run in a "predictive mode" (for future planning simulations) with the diversion time series fixed at water year 2003 for all semi-routed diversions that represent riparian or other water rights users. This method provides the latest available (2003) diversion flows to agricultural water users for an average hydrology year with seasonal patterns. Project water deliveries were developed from CalSim II time series, as described below.

7A.2.4.1 Sacramento Valley

The Sacramento Valley is defined in CVHM as WBSs 1 through 8 (Figure 7A.2). In the Sacramento Valley, the diversion time series for the CVP and SWP settlement contractors and CVP contract agricultural diverters were linked to

CalSim II time series for consistent project delivery estimates for each alternative. Table 7A.2 shows the detailed linkage between CalSim II nodes and CVHM diversions nodes for the Sacramento Valley (also shown in Figure 7A.6).

Table 7A.2 CVHM Diversions linked to CalSim II Flows in the Sacramento Valley

CVHM WBS	CVHM Node ID	Type of Flow	Description – CVHM (CalSim II)	CalSim II Equivalent Node
1	BELL_0206	–	Bella Vista Conduit (ag only)	0.57*D104_PAG
1	SACR_A223	CVP Settlement Ag + CVP Ag Delivery	Diversions – Sacramento River between Keswick and Red Bluff (ag only)	D104_PAG - (BELL_0206) + (0.86*D104_PSC)
0*	SACR_B223	CVP M&I + CVP Settlement M&I Delivery	Diversions – Sacramento River between Keswick and Red Bluff (M&I only)	D104_PMI + 0.14*D104_PSC
2	CORN_0232	CVP Ag Delivery	Corning Canal	D171
2	TE10_0232	CVP Ag Delivery	Tehama Colusa Canal	D172
3	TE12_0323	CVP Ag Delivery	Tehama Colusa Canal	D174 + D178
3	GLEN_0261	CVP Settlement Ag Delivery	Glenn Colusa Canal	D143A + D145A
3	COL_0328	CVP Settlement	Colusa Basin Drain for Irrigation Supply (Colusa Drain MWC)	D180 + D182A + D18302
3	DS12_0282	CVP Settlement	Sacramento River Right Banks Exports (Princeton-Cordova-Glenn ID, Provident ID, Maxwell ID)	D122A
4	DS15_0331	CVP Settlement	HD from Sacramento River between Red Bluff and Knights Landing (Maxwell ID, Sycamore Family Trust, Roberts Ditch IC, RD 108, River Garden Farms, Meridian Farms WC, Pelger Mutual WC, RD 1004, Carter MWC, Sutter MWC, Tisdale Irrigation and Drainage Co)	D122B + D129A + D128

CVHM WBS	CVHM Node ID	Type of Flow	Description – CVHM (CalSim II)	CalSim II Equivalent Node
6	DS65_0381	CVP Settlement	Sacramento River Right Banks Diversions between Knights Landing and Sacramento	D163_PSC
5	DS69_0366	SWP Settlement Contractors in FRSA	DSA 69 HD from Feather River; aggregated deliveries for DSA 69 including from Thermalito Complex and Feather River diversions	D7A + D7B + D202 + D206A + D206B
5	YUBA_0351	–	HD from Yuba River - Diversions for "Big 3" diverters, primarily YCWA	D230
7	DS70-0381	CVP Settlement Ag Delivery	HD from Sac River between Knights Landing and Sacramento - all but City water	D162

* WBS 0 means that water is diverted from the stream but not delivered to any to any of the WBSs. This occurs for M&I diversions not used for crop irrigation.

The linkage was based on the definition and assumptions of CalSim II and CVHM deliveries, and on the spatial approximation of the stream diversion location in CVHM. Each time series is updated in the SFR input file for each alternative simulation.

In addition to the semi-routed deliveries, WBSs 5 and 7 receive water from nonrouted deliveries. However, most of these deliveries are either linked to riparian (nonproject) water rights or deliveries from outside the model domain. Therefore, WBS 5 and 7 nonrouted deliveries remained unchanged from the calibrated CVHM model.

7A.2.4.2 San Joaquin Valley

In CVHM, the San Joaquin Valley is defined as WBSs 10 through 21 and includes the Tulare Lake portion of the San Joaquin Valley (Figure 7A.2). In the San Joaquin Valley, the majority of agricultural surface water deliveries are provided through south-of Delta exports from the CVP and SWP contract allocations. CalSim II time series representing project water deliveries for the San Joaquin Valley WBSs were aggregated into one time series for each WBS using a spreadsheet-based preprocessing tool. These time-series data were then used for the FMP nonrouted deliveries input file. The semi-routed deliveries in the San Joaquin Valley are either of riparian nature or for other non-project use, and therefore were not changed from the historical CVHM. The only exception

occurred in WBS 11, in the East San Joaquin area, where two CVP agricultural deliveries were linked to CalSim II time series (Figure 7A.6):

- Deliveries for Oakdale Irrigation District North and South San Joaquin Irrigation District, simulated in CVHM as the diversions at the South San Joaquin Canal near Knights Ferry (SSJK_0147 in Figure 7A.6), were linked to CalSim II node D520B
- Deliveries for Oakdale Irrigation District South, simulated in CVHM as the diversions at the Oakdale Canal near Knights Ferry (OAKK_0147 in Figure 7A.6), were linked to CalSim II node D520C

These two semi-routed diversions and deliveries were incorporated into the SFR input file along with all the other surface water diversion and boundary inflow modifications for each alternative.

7A.2.5 Model Application Methodology

For each simulation scenario (No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5), boundary inflows in CVHM, WBS surface water estimates, and farm delivery estimates were updated with the appropriate CalSim II model outputs, which account for assumed operational changes for each alternative. The original 42-year hydrology for water years 1962 through 2003 was updated with climate conditions centered on year 2025 for each predictive simulation. Thus, impact evaluations assume the dry to wet hydrology patterns as indicated from climate model simulations centered on year 2025. The simulated groundwater levels for each alternative were compared to the No Action Alternative and Second Basis of Comparison simulations. Model outputs were processed such that impacts to groundwater were shown on an average monthly basis by water year type, and the analysis was centered on potential impacts occurring during the month with the largest agricultural deliveries, which generally is July. The simulation period did not intend to provide groundwater levels at exact future dates, but rather provide a range of groundwater level changes that could occur from implementing each alternative, given assumed future fluctuations in hydrology.

7A.2.5.1 No Action Alternative and Second Basis of Comparison Models

The overall purpose of the No Action Alternative and Second Basis of Comparison models is to provide a set of baseline conditions for comparison with the forecasts of the alternative models to assess whether implementing the proposed alternatives are likely to result in substantial changes to groundwater resources.

Preparing the CVHM No Action Alternative model and the Second Basis of Comparison model was based on the modified CalSim II flow time series for the reservoir outflows and the deliveries to the WBSs in the export service areas. The following are additional assumptions inherent in the predictive version of CVHM:

- The urban groundwater pumping locations for 2003, the most recent available in CVHM, were assumed to remain for the duration of the 42-year predictive simulation period.
- The original CVHM 2003 surface water diversions were assumed for the duration of the predictive simulation for nonproject diversions.
- The land use distribution and associated cropping patterns available in the calibrated CVHM at approximately year 2000-2003 were kept constant throughout the predictive simulation.
- The climatic data were updated to represent a wet to dry precipitation pattern centered on year 2025.

7A.2.5.2 Other Alternatives Models

For each alternative model simulation, the same procedure as described for the No Action Alternative and Second Basis of Comparison models was used, with similar assumptions, to update flows from the CalSim II simulations. Detailed modeling processes and impacts analysis procedures are described in the next section.

7A.3 CVHM Modeling Results

A complex and detailed model such as CVHM requires developing and applying preprocessing and post-processing tools to create input files, run the model, and view and interpret results. The processing tools range from geographic information system (GIS) and spreadsheet-based tools to custom-coded programming utilities that use viewing programs such as Golden Software Surfer. The general preprocessing and input files development are described in Section 7A.2. The following subsections describe data analyses and results.

7A.3.1 Post-Processing and Results Analysis

Output data resulting from CVHM simulations for each alternative were processed to provide a graphical depiction of applicable information that support the analysis and description of potential impacts to groundwater resources. As discussed previously, the primary outputs from CVHM used in this analysis were simulated heads and agricultural groundwater pumping to meet applied water demands.

CVHM outputs simulated hydraulic heads (heads) and groundwater fluxes for each model grid cell in each model layer. Based on analysis of common screen elevations of agricultural pumping wells, Model Layer 6 of the original CVHM includes the majority of the groundwater extraction. Actual locations of agricultural wells are not represented in the model; they are represented as "virtual wells" in model cells representing areas with known groundwater pumping and having a corresponding agricultural land use. The simulated heads in each cell for Model Layer 6 only are interpolated using triangulation with linear interpolation to facilitate viewing results for the entire Central Valley for

each alternative. Because July generally has the highest agricultural groundwater pumping during the CVHM timeframe, the results analysis focuses on this month for each alternative. A post-processing utility was developed to create monthly average heads for July for each water-year type. The difference in monthly average heads between each alternative and No Action Alternative and each alternative and Second Basis of Comparison was then computed, interpolated, and displayed on a Central Valley map for change visualization. The differences were computed by subtracting the simulated heads for No Action Alternative and Second Basis of Comparison from the simulated heads for the alternatives, respectively.

A resulting positive head difference indicates that heads in the alternative simulation are higher than those from the No Action Alternative or Second Basis of Comparison simulation to which the alternative simulation is being compared. Conversely, a resulting negative head difference indicates that heads in the alternative simulation are lower than those from the No Action Alternative or Second Basis of Comparison simulation to which the alternative simulation is being compared. Results are provided in Figures 7.15 through 7.60 and a narrative of the forecast head differences (i.e., project effect to groundwater levels) is provided in Chapter 7, Groundwater Resources and Groundwater Quality.

The results give an indication of the horizontal distribution of the potential impacts to groundwater levels in Model Layer 6 for an average month of July for each water year type. To assess the temporal variations in groundwater level fluctuations, head difference hydrographs at eight model cells were developed to show a range of typical groundwater level variations and changes between alternatives and No Action Alternative and Second Basis of Comparison at different locations in the Central Valley. The location of the simulated groundwater level time series were chosen based on general areas of USGS wells that were used for calibrating CVHM. The hydrograph plots are shown on a CVHM WBS map for the Sacramento Valley and San Joaquin Valley (Figures 7.20, 7.21, 7.29, 7.30, 7.38, 7.39, 7.45, 7.46, 7.52, 7.53, 7.59, and 7.60).

In addition to spatial and temporal representations of groundwater level changes associated with the alternatives, agricultural groundwater pumping differences are also depicted on a map of the WBSs. This graphical representation shows which areas of the Central Valley are impacted the most by changes in surface water deliveries for each alternative. The data for these results were processed from the FMP output files, which include the amount of water used from each available source by the farm, based on the computed applied water demand for each WBS (Figures 7.22, 7.23, 7.31, and 7.32).

7A.3.2 Output Data for Other Models

Simulated heads from CVHM were post-processed for use in evaluating agricultural economic impacts related to each alternative. An agricultural economic impact evaluation of each alternative was performed using the SWAP model. For more information on using this model and the results, refer to

Chapter 12, Agricultural Resources and Appendix 12A. The simulated heads output file was processed to average the July head data for Model Layer 6 for each SWAP region. In addition, processing of CVHM heads for the SWAP model further separates the average simulated head between irrigated portions and non-irrigated portions of each SWAP region.

As a result, each SWAP region includes one estimated average head change representing the agricultural pumping impacts. This average value was used to compute a pumping lift for SWAP input, to compute average electrical cost to pump groundwater for irrigation.

7A.3.3 Model Limitations and Applicability

Although it is impossible to predict future hydrology, land use, and water use with certainty, CVHM was used to forecast impacts to groundwater resources that could result from implementing the No Action Alternative, Second Basis of Comparison, and Alternatives 1 through 5 to aid in developing the EIS. CVHM was used in a comparative manner to estimate potential changes by implementing Alternatives 1 through 5 as compared to the No Action Alternative, and the No Action Alternative and Alternatives 1 through 5 as compared to the Second Basis of Comparison. Mathematical models like CVHM can only approximate processes of physical systems. Models are inherently inexact because the mathematical description of the physical system is imperfect, and the understanding of interrelated physical processes is incomplete. However, CVHM is a powerful tool that, when used carefully, can provide useful insight into processes of the physical system. The following are some known limitations that should be considered when evaluating the forecast impacts.

- CVHM simulates groundwater conditions in the Central Valley with cells on 1-mile centers. Therefore, surface water and groundwater features that occur at a scale smaller than 1 mile cannot be simulated explicitly in CVHM. Likewise, CVHM simulates groundwater conditions using monthly stress periods. Thus, groundwater variations cannot be simulated explicitly in CVHM over timeframes shorter than 1 month.
- The “predictive” (future planning) version of CVHM used for the impacts analysis does not include land use changes after year 2003. Thus, land use changes that have occurred since 2003 and those that might occur in the future are not considered in the impacts analysis.
- The future planning version of CVHM incorporates potential climate-change effects centered on year 2025 (assumed conditions at year 2030). It is not possible to know whether these potential climate-change effects will actually occur in the future, as modeled.
- Operation of groundwater banks and groundwater transfer programs and how implementing the alternatives could affect them is not included in the future planning level CVHM simulations.
- The future planning version of CVHM does not include potential affects from planned or unplanned changes in groundwater regulations in California

(i.e., implementation of California Sustainable Groundwater Management Act).

- The subsidence package, as implemented in the version of CVHM used for the impacts analysis, does not consider the potential reduction in the rate of subsidence that would occur as the magnitude of compaction approaches the physical thickness of the affected fine-grained interbeds. Thus, subsidence forecasts from the predictive versions of CVHM were judged to be overly conservative. Therefore, a qualitative approach was used for estimating the potential for increased land subsidence in areas of the Central Valley that have historically experienced inelastic subsidence because of the compaction of fine-grained interbeds.

7A.4 References

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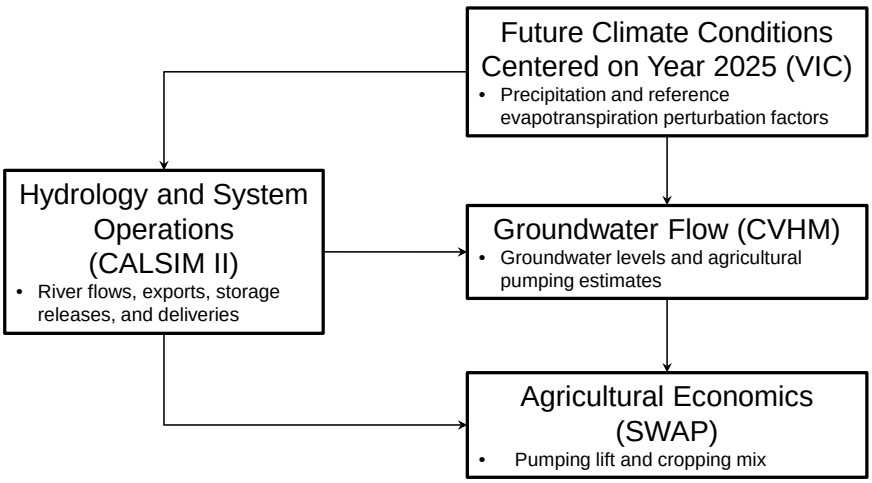


Figure 7A.1 Relationships among the Different Modeling Tools Used in the Groundwater Impacts Analysis Framework

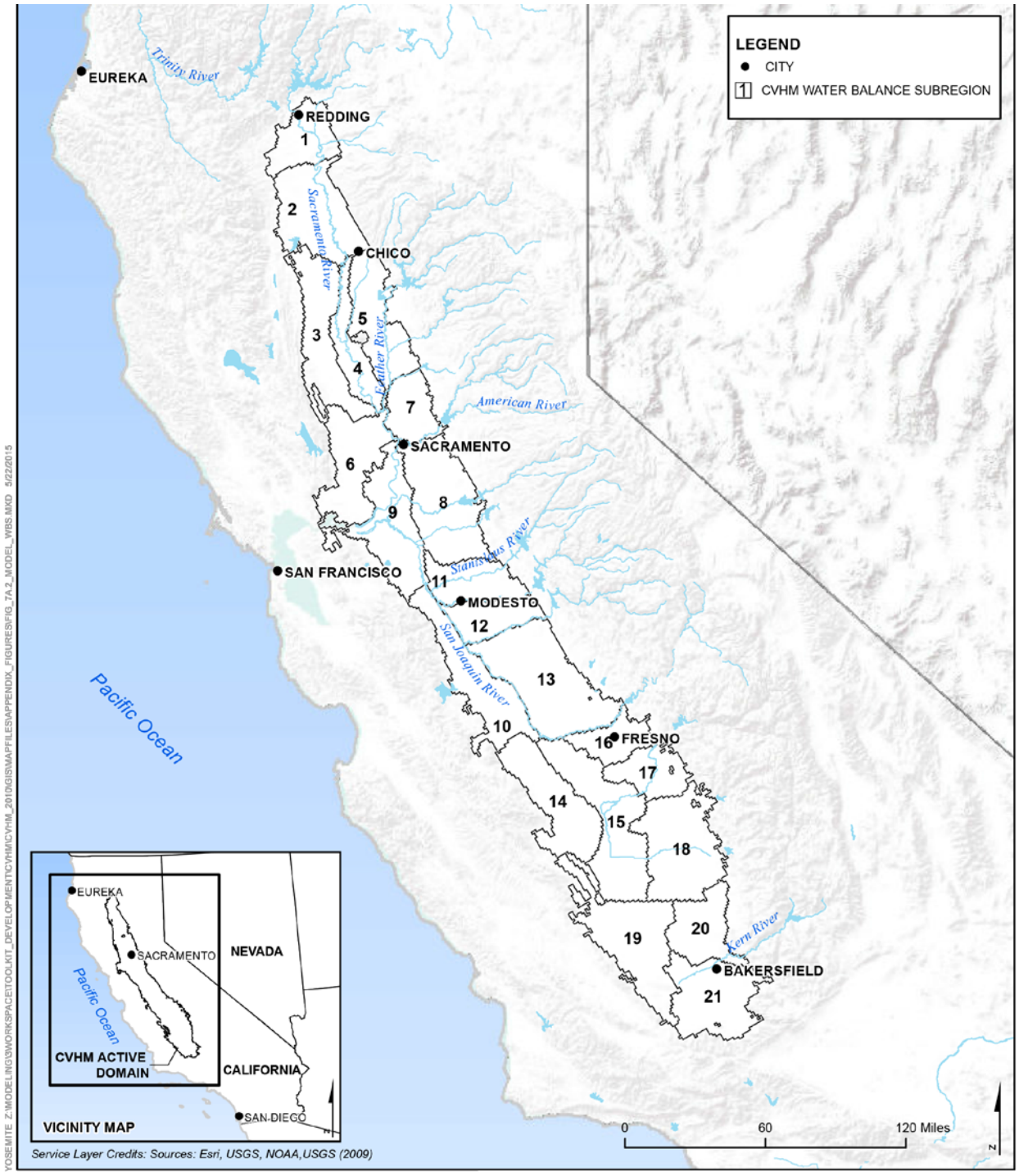


Figure 7A.2 Groundwater Model Domain and Water Balance Subregions in the Central Valley

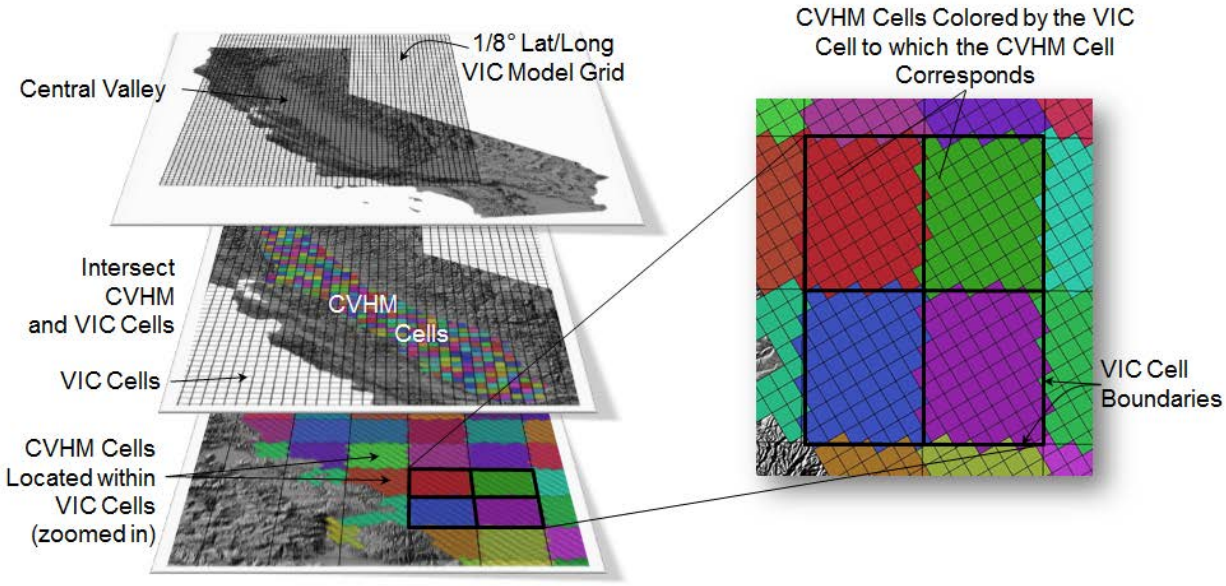


Figure 7A.3 Relationship between VIC and CVHM Grid Cells

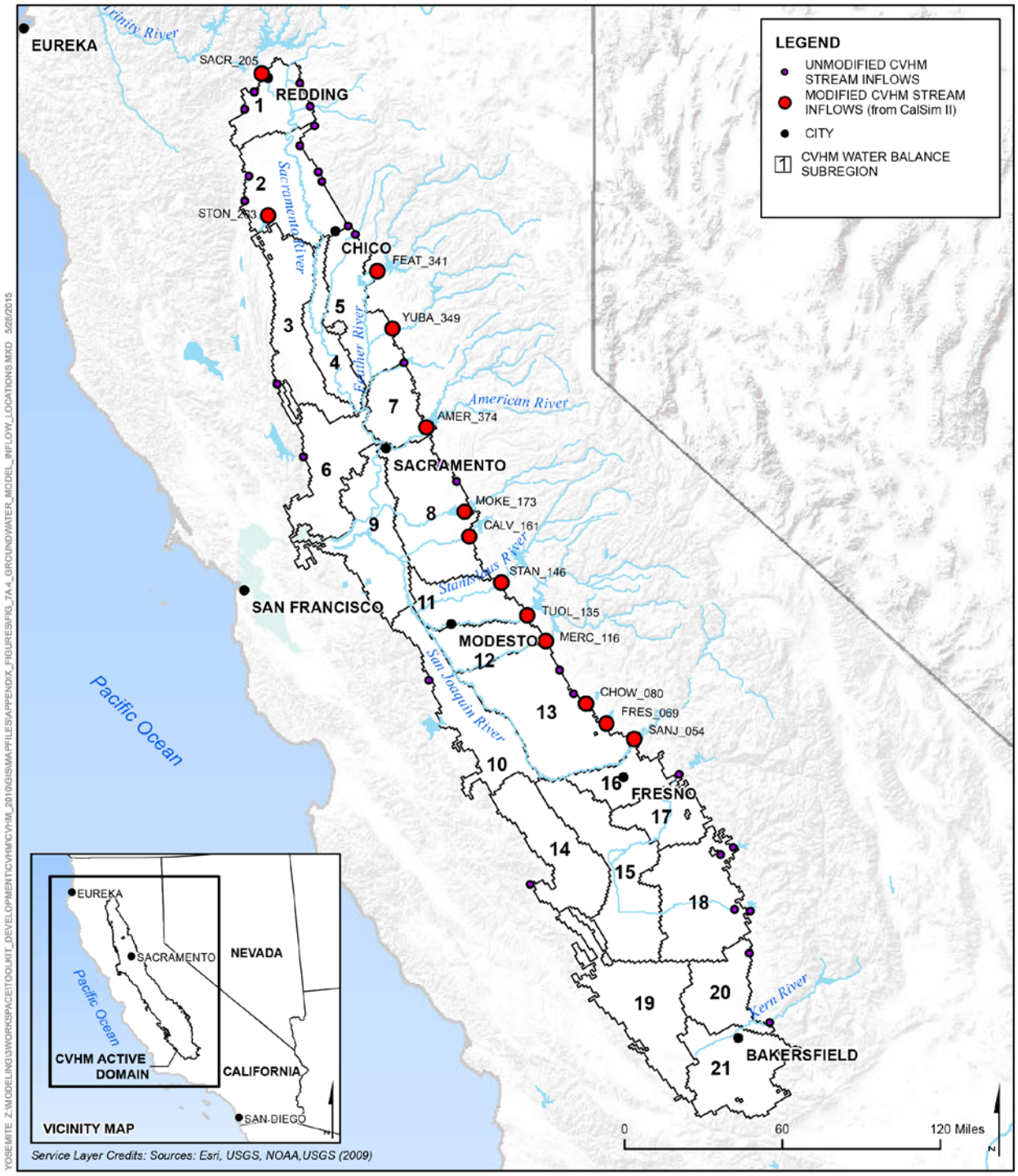
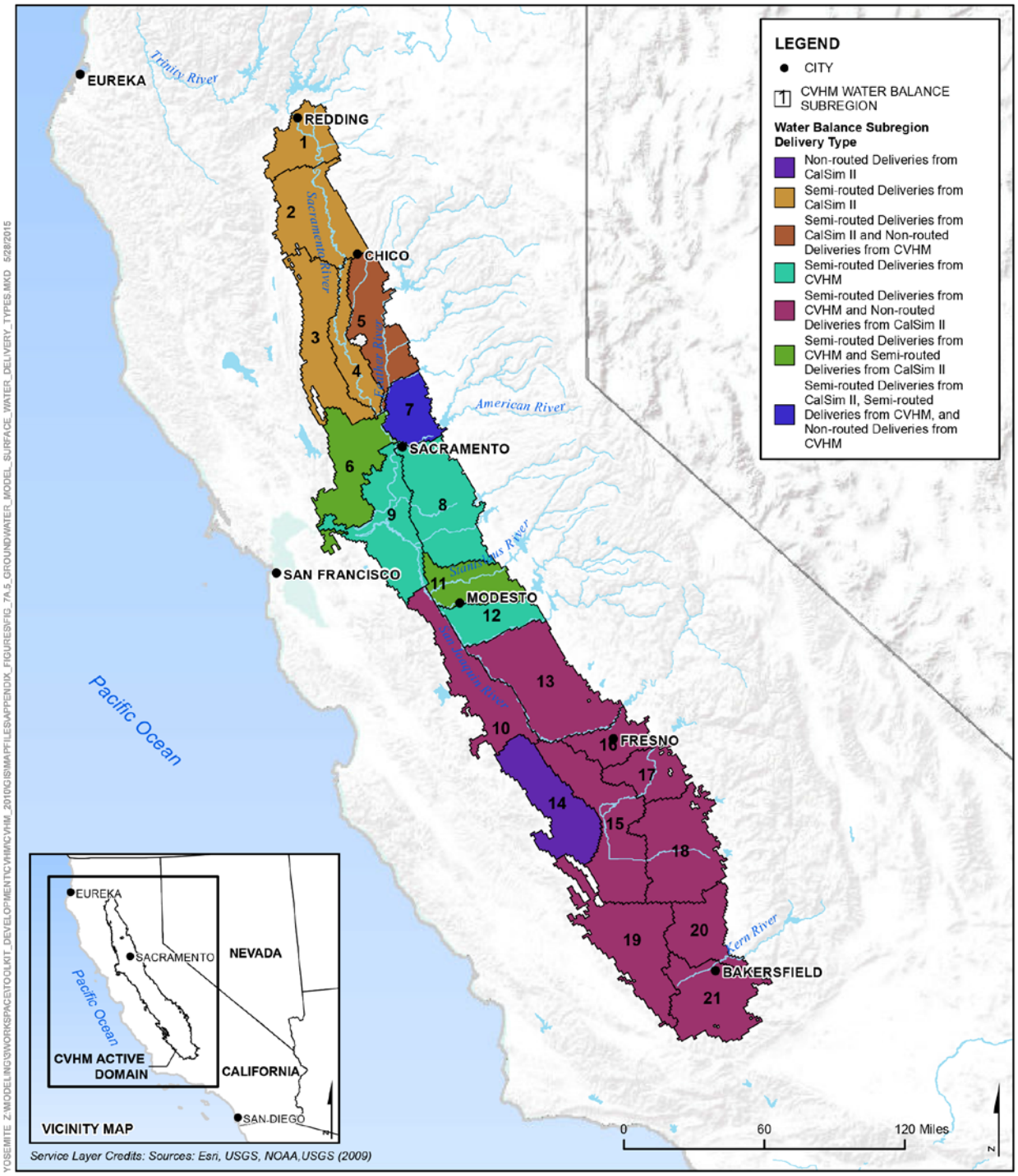


Figure 7A.4 Groundwater Model Stream Inflow Locations



1 **Figure 7A.5 Groundwater Model Surface Water Delivery Types by Water Balance**
2 **Subregion**

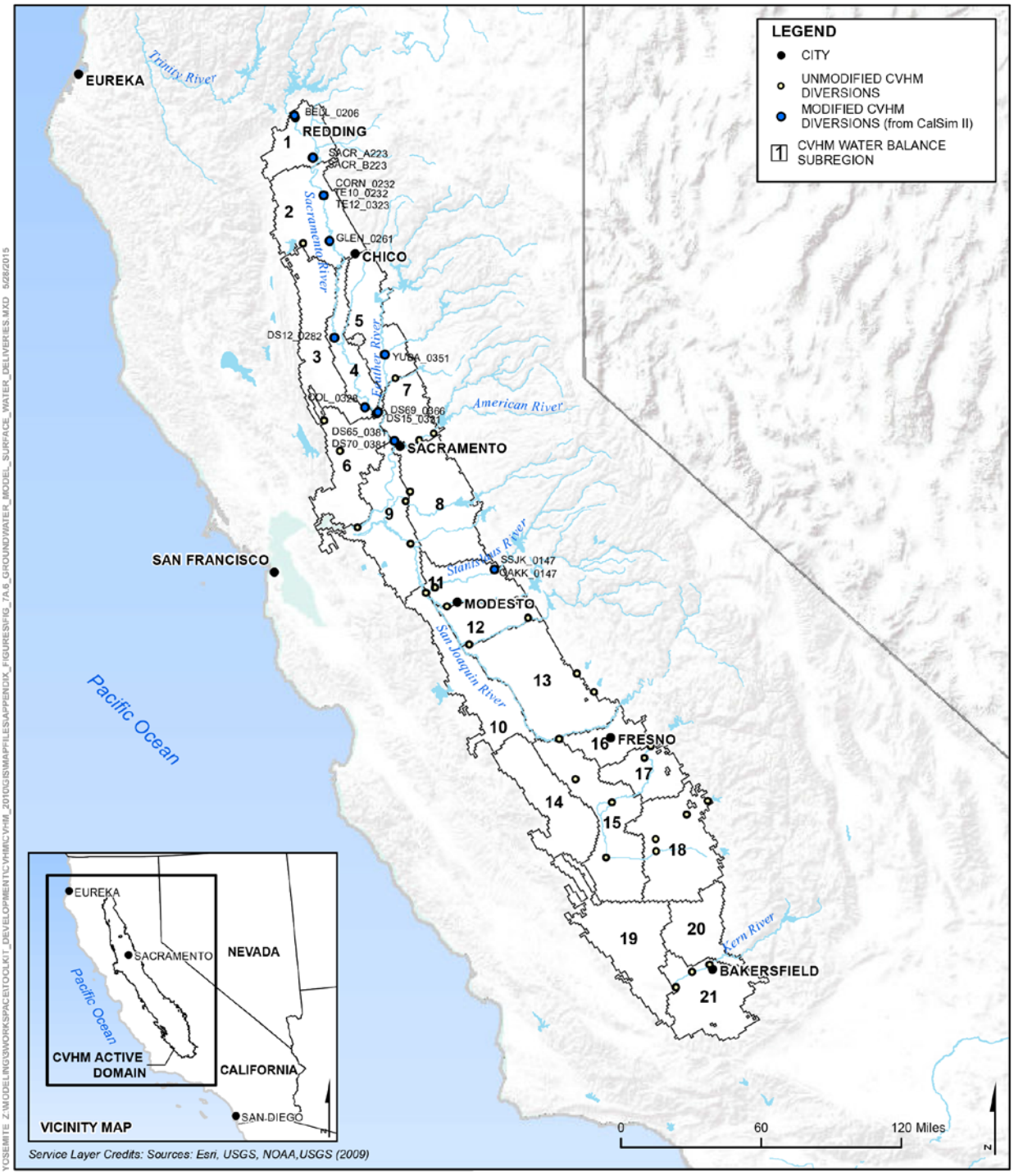


Figure 7A.6 Groundwater Model Surface Water Semi-routed Deliveries Locations

Appendix 8A

Power Model Documentation

Appendix 8A provides information about the assumptions, modeling tools, and methods used for the Coordinated Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP) Environmental Impact Statement (EIS) Environmental Consequences. The appendix also provides model result processing and interpretation methods used for the impacts analysis and descriptions. Additional information pertaining to the development of the analytical tools and the use of input data from other models, is also provided.

Appendix 8A is organized into two main sections that are briefly described below:

- Section 8A.1: Power Modeling Methodology and Assumptions
  - The power impacts analysis uses the LTGen and SWP Power spreadsheet models to assess and quantify effects of the alternatives on the long-term operations and the environment. This section provides information about the modeling approach, equations, and assumptions used by the two power models.
- Section 8A.2: Power Modeling Results
  - This section provides a detailed description of the model simulation output formats used in the analysis and interpretation of modeling results for the alternatives impacts assessment.

8A.1 Power Model Methodology and Assumptions

This section summarizes the power modeling methodology used for the EIS No Action Alternative, Second Basis of Comparison, and other alternatives. There are two spreadsheet tools that are used to estimate average annual peaking power capacity, energy generation, and energy use at CVP and SWP facilities:

- LTGen (LTGen_BenchmarkBO_04-01-2015): analyzes CVP facilities
- SWP_Power (SWP_Gen_J604_02-23-2015): analyzes SWP facilities

The sections below describe the equations that are used to estimate energy use, generation, peaking power capacity, and transmission losses.

8A.1.1 Energy Use at Pumping Facilities

Energy use at CVP and SWP pumping facilities are determined using empirical energy factors provided by the Western Area Power Authority (Western) for CVP facilities and by the Department of Water Resources (DWR) Operations Control Office (OCO) for SWP facilities. For these facilities, energy use is estimated using the following equation:

Energy Use (in Megawatt-hour [MWh]) =

*Energy_Factor * (Q in cubic feet/second)*

The tools also estimate whether user-defined off-peak energy use targets can be met. For example, if it is desired that 90 percent of required pumping energy use during a particular month occur during off-peak hours, the tools determine whether this is feasible given power and flow capacity limits.

8A.1.2 Energy Generation

Energy generation at CVP and SWP power facilities are determined using empirical energy factors provided by Western for CVP facilities and by the OCO for SWP facilities. For these facilities, energy generation is estimated using the following equation:

Energy Generation (MWh) =

*Energy_Factor * (Q in cubic feet/second)*

8A.1.3 Energy Generation

Energy generation is limited on a monthly basis by an average power capacity at each facility. At any one time, power capacity can be higher or lower, depending upon reservoir levels and scheduled water releases. Power production in general will be high during summer months when reservoir levels are higher and water is being released to meet delivery requirements, and power operations are optimized to provide the greatest benefit to taxpayers.

Average monthly power capacity for CVP facilities is estimated using empirical equations provided by Western. The approach used to estimate average monthly power capacity for SWP facilities assumes that peak capacity is a function of total head and average power plant flow. The average monthly power capacity is estimated using the following equation:

Power Capacity (in megawatt [MW]) =

(0.7457 kilowatt/horsepower)(62.4 pounds/cubic foot)*(1MW/1000 kilowatt)* (1 horsepower/(550 pounds per foot/second))*(1/η)*(Head in feet)*(Average Power Plant Flow Rate in cubic feet/second)*

8A.1.4 Transmission Losses

Transmission losses are estimated to estimate energy use and generation at load center, as a percentage of energy use or generation.

8A.1.5 Assumptions Tables

Tables 8A.1 and 8A.2 show assumptions that are used to estimate energy use and transmission losses at CVP and SWP pumping facilities. Tables 8A.3 and 8A.4 show assumptions that are used to estimate energy generation, power capacity, and transmission losses at CVP and SWP generation facilities.

8A.1.6 Flow and Storage Inputs

CalSim II results are used as flow and storage inputs for the power models for each alternative, using the entire October 1921 to September 2003 simulation period. Climate change and sea-level rise are inherently represented through CalSim II outputs. As mentioned in Appendix 5A, the CalSim II simulations do not consider future climate change adaptation that may manage the CVP and SWP system in a different manner than today to reduce climate impacts.

8A.2 Power Model Results

Power Model results were processed individually for each alternative simulation. Tables for total monthly generation capacity, energy generation, energy use, and net energy use for both the CVP and SWP are presented in this section in the following order:

- B.1. CVP Total Generating Capacity
- B.2. CVP Total Energy Generation
- B.3. CVP Total Energy Use
- B.4. CVP Net Energy Generation
- B.5. SWP Total Generating Capacity
- B.6. SWP Total Energy Generation
- B.7. SWP Total Energy Use
- B.8. SWP Net Energy Generation

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Table 8A.1. Central Valley Project Pumping Plant Characteristics

Jones Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	237.5	237.5	237.5	237.5	237.5	237.5	237.5	237.5	237.5	237.5	237.5	237.5
# Units	6	6	6	6	6	6	6	6	6	6	6	6
Capacity/Unit (MW)	16	16	16	16	16	16	16	16	16	16	16	16
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%
On Peak Cap Adj Factor	1.05	1.05	1.05	1.50	1.20	2.20	1.60	2.30	1.50	1.05	1.05	1.05
Off Peak Cap Adj Factor	1.05	1.05	1.05	0.00	1.20	2.20	1.60	2.30	1.50	1.05	1.05	1.05

CVP Banks Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	297	297	297	297	297	297	297	297	297	297	297	297
# Units	0	0	0	0	0	0	0	0	0	0	0	0
Capacity/Unit (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	53.7%	53.7%	53.7%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	53.7%	53.7%	53.7%
On Peak Cap Adj Factor	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Off Peak Cap Adj Factor	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Contra Costa Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	164.8	164.8	164.8	164.8	164.8	164.8	164.8	164.8	164.8	164.8	164.8	164.8
# Units	6	6	6	6	6	6	6	6	6	6	6	6
Capacity/Unit (MW)	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Transmission Loss (%)	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Percent Eng Off Peak (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
On Peak Cap Adj Factor	2.00	2.00	2.00	2.00	2.00	2.00	1.20	1.20	1.20	1.20	2.00	2.00
Off Peak Cap Adj Factor	2.00	2.00	2.00	2.00	2.00	2.00	1.20	1.20	1.20	1.20	2.00	2.00

O'Neill Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2
# Units	6	6	6	6	6	6	6	6	6	6	6	6
Capacity/Unit (MW)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%	48.5%
On Peak Cap Adj Factor	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Off Peak Cap Adj Factor	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

CVP San Luis Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	function	function	function	function	function	function	function	function	function	function	function	function
# Units	8	8	8	8	8	8	8	8	8	8	8	8
Capacity/Unit (MW)	function	function	function	function	function	function	function	function	function	function	function	function
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%
On Peak Cap Adj Factor	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Off Peak Cap Adj Factor	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50

San Felipe Pumping Plant (Pacheco)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	function	function	function	function	function	function	function	function	function	function	function	function
# Units	12	12	12	12	12	12	12	12	12	12	12	12
Capacity/Unit (MW)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
On Peak Cap Adj Factor	2.00	2.00	2.00	1.50	1.50	1.50	1.50	1.20	1.20	1.20	1.20	1.20
Off Peak Cap Adj Factor	2.00	2.00	2.00	1.50	1.50	1.50	1.50	1.20	1.20	1.20	1.20	1.20

CVP Dos Amigos Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9
# Units	6	6	6	6	6	6	6	6	6	6	6	6
Capacity/Unit (MW)	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	76.6%	76.6%	76.6%	76.6%	76.6%	76.6%	76.6%	76.6%	56.6%	56.6%	56.6%	76.6%
On Peak Cap Adj Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Off Peak Cap Adj Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Folsom Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	function	function	function	function	function	function	function	function	function	function	function	function
# Units	6	6	6	6	6	6	6	6	6	6	6	6
Capacity/Unit (MW)	5	5	5	5	5	5	5	5	5	5	5	5
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
On Peak Cap Adj Factor	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Off Peak Cap Adj Factor	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50

Table 8A.1. Central Valley Project Pumping Plant Characteristics

Corning Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	190	190	190	190	190	190	190	190	190	190	190	190
# Units	0	0	0	0	0	0	0	0	0	0	0	0
Capacity/Unit (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Transmission Loss (%)	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Percent Eng Off Peak (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
On Peak Cap Adj Factor	3.00	4.00	4.00	4.00	4.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00
Off Peak Cap Adj Factor	3.00	4.00	4.00	4.00	4.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00

Red Bluff Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	12	12	12	12	12	12	0	0	0	0	0	12
# Units	0	0	0	0	0	0	0	0	0	0	0	0
Capacity/Unit (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
On Peak Adj Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Off Peak Adj Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

San Luis Other												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5
# Units	0	0	0	0	0	0	0	0	0	0	0	0
Capacity/Unit (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Transmission Loss (%)	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Percent Eng Off Peak (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
On Peak Cap Adj Factor	2.00	2.00	2.00	2.00	2.00	2.00	1.50	1.50	1.50	1.50	1.50	2.00
Off Peak Cap Adj Factor	2.00	2.00	2.00	2.00	2.00	2.00	1.50	1.50	1.50	1.50	1.50	2.00

DMC Other												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
# Units	0	0	0	0	0	0	0	0	0	0	0	0
Capacity/Unit (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Transmission Loss (%)	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Percent Eng Off Peak (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
On Peak Cap Adj Factor	3.00	3.00	3.00	3.00	2.50	2.00	2.00	1.50	1.50	1.50	1.50	1.50
Off Peak Cap Adj Factor	3.00	3.00	3.00	3.00	2.50	2.00	2.00	1.50	1.50	1.50	1.50	1.50

Tehama Other												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2	43.2
# Units	0	0	0	0	0	0	0	0	0	0	0	0
Capacity/Unit (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
On Peak Cap Adj Factor	2.00	3.00	3.00	3.00	3.00	3.00	1.50	1.50	1.50	1.50	1.50	1.50
Off Peak Cap Adj Factor	2.00	3.00	3.00	3.00	3.00	3.00	1.50	1.50	1.50	1.50	1.50	1.50

Miscellaneous Project Use												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
MW	7	5	6	6	9	11	4	5	15	23	33	9
Transmission Loss (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Percentage of Main Pumps	15.8%	9.2%	5.9%	8.0%	12.5%	13.1%	39.9%	81.1%	35.5%	43.2%	38.6%	17.9%
Percent Eng Off Peak (%)	59.1%	61.6%	67.3%	64.3%	62.0%	59.0%	52.2%	52.9%	49.1%	50.3%	49.8%	61.3%

DMC Intertie												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3
# Units	8	8	8	8	8	8	8	8	8	8	8	8
Capacity/Unit (MW)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
On Peak Cap Adj Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Off Peak Cap Adj Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 8A.2. State Water Project Pumping Plant Characteristics

Banks Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	297	297	297	297	297	297	297	297	297	297	297	297
# Units	0	0	0	0	0	0	0	0	0	0	0	0
Capacity/Unit (MW)	0	0	0	0	0	0	0	0	0	0	0	0
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	53.7%	53.7%	53.7%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	53.7%	53.7%	53.7%

SWP San Luis Pumping Plant (Gianelli Pumping Plant)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	function	function	function	function	function	function	function	function	function	function	function	function
# Units	8	8	8	8	8	8	8	8	8	8	8	8
Capacity/Unit (MW)	function	function	function	function	function	function	function	function	function	function	function	function
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%	89.7%

Dos Amigos Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9	137.9
# Units	6	6	6	6	6	6	6	6	6	6	6	6
Capacity/Unit (MW)	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Percent Eng Off Peak (%)	76.6%	76.6%	76.6%	76.6%	76.6%	76.6%	76.6%	76.6%	56.6%	56.6%	56.6%	76.6%

Buena Vista Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	242	242	242	242	242	242	242	242	242	242	242	242
Plant Power Rating (MW)	107.797	107.797	107.797	107.797	107.797	107.797	107.797	107.797	107.797	107.797	107.797	107.797
Transmission Loss (%)	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%
Percent Eng Off Peak (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Teerink (Wheeler Ridge) Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	295	295	295	295	295	295	295	295	295	295	295	295
Plant Power Rating (MW)	111.9	111.9	111.9	111.9	111.9	111.9	111.9	111.9	111.9	111.9	111.9	111.9
Transmission Loss (%)	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%
Percent Eng Off Peak (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Chrisman (Wind Gap) Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	639	639	639	639	639	639	639	639	639	639	639	639
Plant Power Rating (MW)	246.18	246.18	246.18	246.18	246.18	246.18	246.18	246.18	246.18	246.18	246.18	246.18
Transmission Loss (%)	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%	1.51%
Percent Eng Off Peak (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Edmonson Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	2,236	2,236	2,236	2,236	2,236	2,236	2,236	2,236	2,236	2,236	2,236	2,236
Plant Power Rating (MW)	775.84	775.84	775.84	775.84	775.84	775.84	775.84	775.84	775.84	775.84	775.84	775.84
Transmission Loss (%)	1.64%	1.64%	1.64%	1.64%	1.64%	1.64%	1.64%	1.64%	1.64%	1.64%	1.64%	1.64%
Percent Eng Off Peak (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Pearblossom Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	703	703	703	703	703	703	703	703	703	703	703	703
Plant Power Rating (MW)	151.588	151.588	151.588	151.588	151.588	151.588	151.588	151.588	151.588	151.588	151.588	151.588
Transmission Loss (%)	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
Percent Eng Off Peak (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Oso Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	280	280	280	280	280	280	280	280	280	280	280	280
Plant Power Rating (MW)	69.975	69.975	69.975	69.975	69.975	69.975	69.975	69.975	69.975	69.975	69.975	69.975
Transmission Loss (%)	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%	2.34%
Percent Eng Off Peak (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

South Bay Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	797	797	797	797	797	797	797	797	797	797	797	797
Plant Power Rating (MW)	20.69	20.69	20.69	20.69	20.69	20.69	20.69	20.69	20.69	20.69	20.69	20.69
Transmission Loss (%)	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
Percent Eng Off Peak (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Del Valle Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	72	72	72	72	72	72	72	72	72	72	72	72
Plant Power Rating (MW)	0.746	0.746	0.746	0.746	0.746	0.746	0.746	0.746	0.746	0.746	0.746	0.746
Transmission Loss (%)	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%	1.8%
Percent Eng Off Peak (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 8A.2. State Water Project Pumping Plant Characteristics

Las Perillas Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	77	77	77	77	77	77	77	77	77	77	77	77
Plant Power Rating (MW)	3.021	3.021	3.021	3.021	3.021	3.021	3.021	3.021	3.021	3.021	3.021	3.021
Transmission Loss (%)	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%
Percent Eng Off Peak (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Badger Hill Pumping Plant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	200	200	200	200	200	200	200	200	200	200	200	200
Plant Power Rating (MW)	8.766	8.766	8.766	8.766	8.766	8.766	8.766	8.766	8.766	8.766	8.766	8.766
Transmission Loss (%)	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%	1.32%
Percent Eng Off Peak (%)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 8A.3. Central Valley Project Powerplant Characteristics

Trinity Powerplant - Peaking Operation												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
`	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	2	2	2	2	2	2	2	2	2	2	2	2
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Transmission Loss (%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

Lewiston Powerplant - Baseload Operation												
	Oct	Nov	Dec	Jan	0	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	0	0	0	0	0	0	0	0	0	0	0	0
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Transmission Loss (%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

Carr Powerplant - Peaking Operation												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	2	2	2	2	2	2	2	2	2	2	2	2
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Transmission Loss (%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

Spring Creek Powerplant - Peaking Operation												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	2	2	2	2	2	2	2	2	2	2	2	2
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Transmission Loss (%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

Shasta Powerplant - Peaking Operation												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	5	5	5	5	5	5	5	5	5	5	5	5
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Transmission Loss (%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

Keswick Powerplant - Baseload Operation												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	3	3	3	3	3	3	3	3	3	3	3	3
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Transmission Loss (%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

Folsom Powerplant - Peaking Operation												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	3	3	3	3	3	3	3	3	3	3	3	3
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Transmission Loss (%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

Nimbus Powerplant - Baseload Operation												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	2	2	2	2	2	2	2	2	2	2	2	2
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Transmission Loss (%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

New Melones Powerplant - Peaking Operation												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	2	2	2	2	2	2	2	2	2	2	2	2
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

CVP San Luis Powerplant - Peaking Operation												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	8	8	8	8	8	8	8	8	8	8	8	8
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Share of Total Cap (%)	47.1%	47.1%	47.1%	47.1%	47.1%	47.1%	47.1%	47.1%	47.1%	47.1%	47.1%	47.1%

O'Neill Powerplant - Baseload Operation, flow computation												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	6	6	6	6	6	6	6	6	6	6	6	6
Capacity/Unit (MW)	3	3	3	3	3	3	3	3	3	3	3	3
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

Table 8A.4. State Water Project Powerplant Characteristics

Hyatt (Lake Oroville) Powerplant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Maximum Flow Capacity (cfs)	16,950	16,950	16,950	16,950	16,950	16,950	16,950	16,950	16,950	16,950	16,950	16,950
Plant Power Rating (MW)	812	812	812	812	812	812	812	812	812	812	812	812
Plant Efficiency	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%
Transmission Loss (%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

Thermalito Powerplant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Maximum Flow Capacity (cfs)	17,400	17,400	17,400	17,400	17,400	17,400	17,400	17,400	17,400	17,400	17,400	17,400
Plant Power Rating (MW)	120	120	120	120	120	120	120	120	120	120	120	120
Plant Efficiency	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%	87.3%
Transmission Loss (%)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%

SWP San Luis (Gianelli Powerplant)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Capacity/Unit (MW)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
# Units	8	8	8	8	8	8	8	8	8	8	8	8
Share of Total Cap (%)	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%	52.9%
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

AlamoPowerplant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	105	105	105	105	105	105	105	105	105	105	105	105
Maximum Flow Capacity (cfs)	1,740	1,740	1,740	1,740	1,740	1,740	1,740	1,740	1,740	1,740	1,740	1,740
Plant Power Rating (MW)	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
Plant Efficiency	80.1%	80.1%	80.1%	80.1%	80.1%	80.1%	80.1%	80.1%	80.1%	80.1%	80.1%	80.1%
Transmission Loss (%)	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%

Mojave Powerplant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	95	95	95	95	95	95	95	95	95	95	95	95
Maximum Flow Capacity (cfs)	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880
Plant Power Rating (MW)	32.90	32.90	32.90	32.90	32.90	32.90	32.90	32.90	32.90	32.90	32.90	32.90
Plant Efficiency	84.00%	84.00%	84.00%	84.00%	84.00%	84.00%	84.00%	84.00%	84.00%	84.00%	84.00%	84.00%
Transmission Loss (%)	5.93%	5.93%	5.93%	5.93%	5.93%	5.93%	5.93%	5.93%	5.93%	5.93%	5.93%	5.93%

Devil's Canyon Powerplant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	1,113	1,113	1,113	1,113	1,113	1,113	1,113	1,113	1,113	1,113	1,113	1,113
Maximum Flow Capacity (cfs)	2,940	2,940	2,940	2,940	2,940	2,940	2,940	2,940	2,940	2,940	2,940	2,940
Plant Power Rating (MW)	357.90	357.90	357.90	357.90	357.90	357.90	357.90	357.90	357.90	357.90	357.90	357.90
Plant Efficiency	82.03%	82.03%	82.03%	82.03%	82.03%	82.03%	82.03%	82.03%	82.03%	82.03%	82.03%	82.03%
Transmission Loss (%)	2.23%	2.23%	2.23%	2.23%	2.23%	2.23%	2.23%	2.23%	2.23%	2.23%	2.23%	2.23%

W. E. Warner Powerplant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	573	573	573	573	573	573	573	573	573	573	573	573
Maximum Flow Capacity (cfs)	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564	1,564
Plant Power Rating (MW)	78.2	78.2	78.2	78.2	78.2	78.2	78.2	78.2	78.2	78.2	78.2	78.2
Plant Efficiency	81.4%	81.4%	81.4%	81.4%	81.4%	81.4%	81.4%	81.4%	81.4%	81.4%	81.4%	81.4%
Transmission Loss (%)	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%

Castaic Powerplant												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Energy Factor (kWh/af)	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function	Function
Maximum Flow Capacity (cfs)	17,840	17,840	17,840	17,840	17,840	17,840	17,840	17,840	17,840	17,840	17,840	17,840
Plant Power Rating (MW)	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260
Plant Efficiency	88.4%	88.4%	88.4%	88.4%	88.4%	88.4%	88.4%	88.4%	88.4%	88.4%	88.4%	88.4%
Transmission Loss (%)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

B.1. CVP Total Generating Capacity

Table B-1-1. CVP Total Capacity, Monthly Capacity

No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,688	1,743	1,810	1,854	1,883	1,895	1,877	1,848	1,785	1,749	1,670	1,647
20%	1,638	1,724	1,772	1,829	1,858	1,872	1,842	1,806	1,719	1,695	1,623	1,615
30%	1,600	1,694	1,744	1,802	1,837	1,842	1,825	1,782	1,671	1,623	1,585	1,599
40%	1,579	1,635	1,710	1,776	1,811	1,812	1,793	1,736	1,634	1,583	1,545	1,553
50%	1,550	1,611	1,681	1,732	1,778	1,782	1,757	1,711	1,607	1,543	1,510	1,516
60%	1,529	1,556	1,622	1,700	1,749	1,752	1,725	1,652	1,564	1,504	1,481	1,473
70%	1,465	1,519	1,588	1,661	1,712	1,714	1,685	1,618	1,524	1,457	1,433	1,432
80%	1,354	1,428	1,521	1,584	1,666	1,675	1,637	1,578	1,440	1,353	1,332	1,342
90%	1,137	1,293	1,403	1,455	1,476	1,502	1,454	1,384	1,203	1,120	1,085	1,103
Long Term												
Full Simulation Period[b]	1,476	1,542	1,612	1,685	1,727	1,734	1,705	1,648	1,542	1,468	1,429	1,430
Water Year Types[c]												
Wet (32%)	1,621	1,696	1,761	1,824	1,860	1,877	1,859	1,831	1,753	1,717	1,645	1,628
Above Normal (16%)	1,465	1,580	1,676	1,762	1,814	1,814	1,793	1,741	1,633	1,590	1,545	1,541
Below Normal (13%)	1,530	1,580	1,669	1,719	1,764	1,757	1,728	1,665	1,559	1,491	1,478	1,483
Dry (24%)	1,441	1,491	1,556	1,637	1,690	1,709	1,680	1,607	1,508	1,434	1,418	1,433
Critical (15%)	1,180	1,221	1,264	1,348	1,374	1,355	1,299	1,205	1,025	832	808	825

Alternative 1

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,767	1,807	1,854	1,883	1,910	1,941	1,942	1,899	1,825	1,767	1,751	1,733
20%	1,731	1,790	1,829	1,862	1,891	1,923	1,907	1,856	1,739	1,676	1,669	1,677
30%	1,687	1,768	1,809	1,849	1,876	1,899	1,890	1,808	1,695	1,620	1,608	1,647
40%	1,645	1,727	1,787	1,832	1,865	1,879	1,857	1,770	1,654	1,590	1,571	1,574
50%	1,583	1,686	1,750	1,811	1,846	1,855	1,832	1,745	1,612	1,550	1,541	1,544
60%	1,561	1,629	1,710	1,768	1,811	1,831	1,788	1,701	1,584	1,509	1,487	1,488
70%	1,482	1,568	1,650	1,714	1,771	1,786	1,760	1,669	1,550	1,471	1,439	1,448
80%	1,379	1,450	1,576	1,644	1,719	1,747	1,713	1,616	1,490	1,391	1,387	1,375
90%	1,197	1,360	1,427	1,535	1,569	1,552	1,523	1,429	1,335	1,222	1,183	1,134
Long Term												
Full Simulation Period[b]	1,532	1,606	1,675	1,735	1,780	1,795	1,772	1,693	1,574	1,492	1,469	1,474
Water Year Types[c]												
Wet (32%)	1,679	1,756	1,811	1,857	1,892	1,926	1,920	1,871	1,773	1,717	1,694	1,701
Above Normal (16%)	1,522	1,652	1,747	1,810	1,856	1,877	1,860	1,778	1,653	1,584	1,567	1,564
Below Normal (13%)	1,606	1,671	1,754	1,792	1,830	1,838	1,807	1,718	1,593	1,496	1,481	1,487
Dry (24%)	1,476	1,536	1,607	1,689	1,746	1,771	1,746	1,652	1,533	1,463	1,445	1,456
Critical (15%)	1,250	1,290	1,342	1,416	1,466	1,419	1,366	1,262	1,106	948	902	904

Alternative 1 minus No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	78	64	44	29	27	46	65	50	39	18	81	86
20%	92	66	57	33	33	52	64	50	20	-19	46	62
30%	87	74	66	47	39	57	65	26	24	-3	23	48
40%	66	92	76	56	54	67	64	34	20	6	27	21
50%	32	76	69	78	68	73	74	35	5	7	30	28
60%	32	73	88	68	61	79	62	49	20	6	6	16
70%	17	49	62	53	59	72	75	50	27	14	7	16
80%	25	23	55	60	53	72	75	37	51	38	55	33
90%	60	67	25	80	93	50	68	46	132	102	97	31
Long Term												
Full Simulation Period[b]	56	64	62	50	53	61	66	45	32	24	40	45
Water Year Types[c]												
Wet (32%)	58	60	50	33	32	50	60	40	20	0	48	73
Above Normal (16%)	56	72	70	48	42	63	67	36	20	-6	22	23
Below Normal (13%)	75	92	86	72	66	81	79	53	34	5	3	4
Dry (24%)	35	45	52	52	56	63	66	45	25	29	28	23
Critical (15%)	70	69	79	69	91	64	68	57	80	116	94	79

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Second Basis of Comparison and Alternative 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-1-2. CVP Total Capacity, Monthly Capacity

No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,688	1,743	1,810	1,854	1,883	1,895	1,877	1,848	1,785	1,749	1,670	1,647
20%	1,638	1,724	1,772	1,829	1,858	1,872	1,842	1,806	1,719	1,695	1,623	1,615
30%	1,600	1,694	1,744	1,802	1,837	1,842	1,825	1,782	1,671	1,623	1,585	1,599
40%	1,579	1,635	1,710	1,776	1,811	1,812	1,793	1,736	1,634	1,583	1,545	1,553
50%	1,550	1,611	1,681	1,732	1,778	1,782	1,757	1,711	1,607	1,543	1,510	1,516
60%	1,529	1,556	1,622	1,700	1,749	1,752	1,725	1,652	1,564	1,504	1,481	1,473
70%	1,465	1,519	1,588	1,661	1,712	1,714	1,685	1,618	1,524	1,457	1,433	1,432
80%	1,354	1,428	1,521	1,584	1,666	1,675	1,637	1,578	1,440	1,353	1,332	1,342
90%	1,137	1,293	1,403	1,455	1,476	1,502	1,454	1,384	1,203	1,120	1,085	1,103
Long Term												
Full Simulation Period[b]	1,476	1,542	1,612	1,685	1,727	1,734	1,705	1,648	1,542	1,468	1,429	1,430
Water Year Types[c]												
Wet (32%)	1,621	1,696	1,761	1,824	1,860	1,877	1,859	1,831	1,753	1,717	1,645	1,628
Above Normal (16%)	1,465	1,580	1,676	1,762	1,814	1,814	1,793	1,741	1,633	1,590	1,545	1,541
Below Normal (13%)	1,530	1,580	1,669	1,719	1,764	1,757	1,728	1,665	1,559	1,491	1,478	1,483
Dry (24%)	1,441	1,491	1,556	1,637	1,690	1,709	1,680	1,607	1,508	1,434	1,418	1,433
Critical (15%)	1,180	1,221	1,264	1,348	1,374	1,355	1,299	1,205	1,025	832	808	825

Alternative 3

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,778	1,818	1,852	1,884	1,910	1,945	1,947	1,910	1,837	1,777	1,759	1,753
20%	1,749	1,789	1,828	1,860	1,894	1,930	1,930	1,883	1,766	1,692	1,687	1,696
30%	1,708	1,772	1,814	1,851	1,884	1,900	1,895	1,828	1,717	1,654	1,633	1,659
40%	1,663	1,741	1,781	1,838	1,866	1,882	1,849	1,777	1,670	1,601	1,604	1,600
50%	1,609	1,689	1,744	1,800	1,840	1,851	1,821	1,760	1,644	1,572	1,554	1,569
60%	1,579	1,639	1,695	1,748	1,797	1,814	1,781	1,711	1,603	1,542	1,511	1,510
70%	1,499	1,557	1,632	1,703	1,768	1,784	1,755	1,665	1,567	1,487	1,453	1,465
80%	1,394	1,457	1,570	1,624	1,708	1,738	1,707	1,620	1,506	1,408	1,378	1,372
90%	1,231	1,365	1,434	1,496	1,518	1,545	1,519	1,453	1,343	1,229	1,190	1,181
Long Term												
Full Simulation Period[b]	1,551	1,613	1,676	1,732	1,777	1,794	1,775	1,705	1,592	1,512	1,486	1,493
Water Year Types[c]												
Wet (32%)	1,690	1,756	1,806	1,856	1,894	1,929	1,928	1,885	1,791	1,730	1,713	1,716
Above Normal (16%)	1,527	1,640	1,746	1,802	1,852	1,875	1,862	1,786	1,679	1,615	1,591	1,589
Below Normal (13%)	1,629	1,676	1,751	1,790	1,829	1,832	1,788	1,718	1,607	1,529	1,504	1,501
Dry (24%)	1,504	1,551	1,612	1,686	1,748	1,768	1,745	1,660	1,555	1,479	1,459	1,475
Critical (15%)	1,283	1,319	1,355	1,411	1,444	1,422	1,386	1,288	1,113	967	909	930

Alternative 3 minus No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	90	76	43	30	27	50	70	62	51	28	89	106
20%	111	65	55	31	36	58	88	77	46	-3	64	81
30%	109	79	70	49	47	57	70	46	46	32	48	60
40%	84	106	70	62	54	70	56	41	36	18	60	47
50%	58	78	63	67	62	68	63	49	37	29	44	53
60%	49	83	73	48	47	62	56	59	39	38	30	37
70%	34	38	44	42	56	69	71	47	43	31	20	33
80%	39	29	49	40	42	63	69	42	66	55	46	30
90%	94	72	31	41	42	42	64	70	140	109	104	78
Long Term												
Full Simulation Period[b]	75	71	64	47	50	61	69	56	50	44	57	64
Water Year Types[c]												
Wet (32%)	69	60	45	32	34	52	68	54	37	13	68	88
Above Normal (16%)	61	60	70	40	38	62	69	45	45	25	45	48
Below Normal (13%)	99	97	82	70	65	75	60	54	49	39	26	18
Dry (24%)	63	61	57	49	58	59	66	53	46	45	42	42
Critical (15%)	103	98	92	64	70	67	87	83	88	136	101	104

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-1-3. CVP Total Capacity, Monthly Capacity

No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,688	1,743	1,810	1,854	1,883	1,895	1,877	1,848	1,785	1,749	1,670	1,647
20%	1,638	1,724	1,772	1,829	1,858	1,872	1,842	1,806	1,719	1,695	1,623	1,615
30%	1,600	1,694	1,744	1,802	1,837	1,842	1,825	1,782	1,671	1,623	1,585	1,599
40%	1,579	1,635	1,710	1,776	1,811	1,812	1,793	1,736	1,634	1,583	1,545	1,553
50%	1,550	1,611	1,681	1,732	1,778	1,782	1,757	1,711	1,607	1,543	1,510	1,516
60%	1,529	1,556	1,622	1,700	1,749	1,752	1,725	1,652	1,564	1,504	1,481	1,473
70%	1,465	1,519	1,588	1,661	1,712	1,714	1,685	1,618	1,524	1,457	1,433	1,432
80%	1,354	1,428	1,521	1,584	1,666	1,675	1,637	1,578	1,440	1,353	1,332	1,342
90%	1,137	1,293	1,403	1,455	1,476	1,502	1,454	1,384	1,203	1,120	1,085	1,103
Long Term												
Full Simulation Period[b]	1,476	1,542	1,612	1,685	1,727	1,734	1,705	1,648	1,542	1,468	1,429	1,430
Water Year Types[c]												
Wet (32%)	1,621	1,696	1,761	1,824	1,860	1,877	1,859	1,831	1,753	1,717	1,645	1,628
Above Normal (16%)	1,465	1,580	1,676	1,762	1,814	1,814	1,793	1,741	1,633	1,590	1,545	1,541
Below Normal (13%)	1,530	1,580	1,669	1,719	1,764	1,757	1,728	1,665	1,559	1,491	1,478	1,483
Dry (24%)	1,441	1,491	1,556	1,637	1,690	1,709	1,680	1,607	1,508	1,434	1,418	1,433
Critical (15%)	1,180	1,221	1,264	1,348	1,374	1,355	1,299	1,205	1,025	832	808	825

Alternative 5

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,693	1,746	1,805	1,849	1,882	1,891	1,879	1,849	1,777	1,748	1,671	1,650
20%	1,635	1,721	1,772	1,829	1,859	1,867	1,843	1,806	1,725	1,690	1,624	1,612
30%	1,599	1,680	1,744	1,797	1,836	1,839	1,816	1,766	1,655	1,616	1,576	1,579
40%	1,566	1,638	1,710	1,767	1,801	1,801	1,785	1,732	1,619	1,571	1,538	1,547
50%	1,538	1,596	1,668	1,726	1,775	1,774	1,737	1,700	1,598	1,555	1,504	1,510
60%	1,516	1,552	1,617	1,687	1,737	1,733	1,701	1,643	1,537	1,484	1,460	1,457
70%	1,458	1,512	1,571	1,650	1,694	1,699	1,673	1,596	1,506	1,415	1,413	1,413
80%	1,327	1,399	1,504	1,574	1,644	1,639	1,616	1,532	1,439	1,324	1,302	1,310
90%	1,044	1,242	1,372	1,427	1,440	1,483	1,450	1,351	1,173	1,061	1,046	1,029
Long Term												
Full Simulation Period[b]	1,460	1,532	1,603	1,672	1,716	1,717	1,692	1,633	1,525	1,450	1,410	1,410
Water Year Types[c]												
Wet (32%)	1,609	1,690	1,755	1,819	1,856	1,873	1,858	1,830	1,748	1,715	1,641	1,625
Above Normal (16%)	1,458	1,576	1,671	1,757	1,808	1,806	1,785	1,735	1,624	1,577	1,536	1,532
Below Normal (13%)	1,504	1,559	1,648	1,712	1,755	1,743	1,710	1,653	1,546	1,474	1,465	1,468
Dry (24%)	1,428	1,478	1,545	1,622	1,676	1,686	1,657	1,585	1,485	1,403	1,383	1,391
Critical (15%)	1,152	1,205	1,253	1,308	1,344	1,310	1,274	1,159	985	793	768	794

Alternative 5 minus No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	5	4	-5	-5	-1	-4	2	1	-8	0	0	3
20%	-4	-4	0	-1	1	-5	0	0	6	-5	1	-3
30%	-1	-14	1	-4	-1	-3	-9	-17	-16	-7	-9	-20
40%	-12	2	-1	-9	-10	-11	-8	-4	-15	-12	-6	-7
50%	-13	-15	-13	-6	-3	-8	-20	-11	-9	11	-7	-6
60%	-13	-4	-5	-13	-12	-19	-24	-9	-27	-20	-21	-15
70%	-7	-6	-17	-11	-19	-16	-11	-23	-17	-41	-20	-19
80%	-27	-29	-16	-10	-22	-36	-21	-46	-1	-29	-30	-31
90%	-93	-51	-31	-28	-36	-19	-5	-33	-29	-59	-39	-74
Long Term												
Full Simulation Period[b]	-16	-11	-10	-13	-11	-16	-13	-15	-17	-18	-19	-19
Water Year Types[c]												
Wet (32%)	-12	-5	-6	-6	-4	-4	-2	-1	-6	-2	-4	-3
Above Normal (16%)	-7	-4	-5	-5	-5	-7	-8	-6	-10	-13	-9	-9
Below Normal (13%)	-26	-21	-21	-8	-9	-14	-17	-12	-13	-16	-13	-15
Dry (24%)	-14	-12	-10	-14	-14	-23	-23	-22	-23	-30	-35	-42
Critical (15%)	-28	-17	-11	-40	-30	-46	-24	-46	-40	-39	-40	-31

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-1-4. CVP Total Capacity, Monthly Capacity

Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,767	1,807	1,854	1,883	1,910	1,941	1,942	1,899	1,825	1,767	1,751	1,733
20%	1,731	1,790	1,829	1,862	1,891	1,923	1,907	1,856	1,739	1,676	1,669	1,677
30%	1,687	1,768	1,809	1,849	1,876	1,899	1,890	1,808	1,695	1,620	1,608	1,647
40%	1,645	1,727	1,787	1,832	1,865	1,879	1,857	1,770	1,654	1,590	1,571	1,574
50%	1,583	1,686	1,750	1,811	1,846	1,855	1,832	1,745	1,612	1,550	1,541	1,544
60%	1,561	1,629	1,710	1,768	1,811	1,831	1,788	1,701	1,584	1,509	1,487	1,488
70%	1,482	1,568	1,650	1,714	1,771	1,786	1,760	1,669	1,550	1,471	1,439	1,448
80%	1,379	1,450	1,576	1,644	1,719	1,747	1,713	1,616	1,490	1,391	1,387	1,375
90%	1,197	1,360	1,427	1,535	1,569	1,552	1,523	1,429	1,335	1,222	1,183	1,134
Long Term												
Full Simulation Period[b]	1,532	1,606	1,675	1,735	1,780	1,795	1,772	1,693	1,574	1,492	1,469	1,474
Water Year Types[c]												
Wet (32%)	1,679	1,756	1,811	1,857	1,892	1,926	1,920	1,871	1,773	1,717	1,694	1,701
Above Normal (16%)	1,522	1,652	1,747	1,810	1,856	1,877	1,860	1,778	1,653	1,584	1,567	1,564
Below Normal (13%)	1,606	1,671	1,754	1,792	1,830	1,838	1,807	1,718	1,593	1,496	1,481	1,487
Dry (24%)	1,476	1,536	1,607	1,689	1,746	1,771	1,746	1,652	1,533	1,463	1,445	1,456
Critical (15%)	1,250	1,290	1,342	1,416	1,466	1,419	1,366	1,262	1,106	948	902	904

No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,688	1,743	1,810	1,854	1,883	1,895	1,877	1,848	1,785	1,749	1,670	1,647
20%	1,638	1,724	1,772	1,829	1,858	1,872	1,842	1,806	1,719	1,695	1,623	1,615
30%	1,600	1,694	1,744	1,802	1,837	1,842	1,825	1,782	1,671	1,623	1,585	1,599
40%	1,579	1,635	1,710	1,776	1,811	1,812	1,793	1,736	1,634	1,583	1,545	1,553
50%	1,550	1,611	1,681	1,732	1,778	1,782	1,757	1,711	1,607	1,543	1,510	1,516
60%	1,529	1,556	1,622	1,700	1,749	1,752	1,725	1,652	1,564	1,504	1,481	1,473
70%	1,465	1,519	1,588	1,661	1,712	1,714	1,685	1,618	1,524	1,457	1,433	1,432
80%	1,354	1,428	1,521	1,584	1,666	1,675	1,637	1,578	1,440	1,353	1,332	1,342
90%	1,137	1,293	1,403	1,455	1,476	1,502	1,454	1,384	1,203	1,120	1,085	1,103
Long Term												
Full Simulation Period[b]	1,476	1,542	1,612	1,685	1,727	1,734	1,705	1,648	1,542	1,468	1,429	1,430
Water Year Types[c]												
Wet (32%)	1,621	1,696	1,761	1,824	1,860	1,877	1,859	1,831	1,753	1,717	1,645	1,628
Above Normal (16%)	1,465	1,580	1,676	1,762	1,814	1,814	1,793	1,741	1,633	1,590	1,545	1,541
Below Normal (13%)	1,530	1,580	1,669	1,719	1,764	1,757	1,728	1,665	1,559	1,491	1,478	1,483
Dry (24%)	1,441	1,491	1,556	1,637	1,690	1,709	1,680	1,607	1,508	1,434	1,418	1,433
Critical (15%)	1,180	1,221	1,264	1,348	1,374	1,355	1,299	1,205	1,025	832	808	825

No Action Alternative minus Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-78	-64	-44	-29	-27	-46	-65	-50	-39	-18	-81	-86
20%	-92	-66	-57	-33	-33	-52	-64	-50	-20	19	-46	-62
30%	-87	-74	-66	-47	-39	-57	-65	-26	-24	3	-23	-48
40%	-66	-92	-76	-56	-54	-67	-64	-34	-20	-6	-27	-21
50%	-32	-76	-69	-78	-68	-73	-74	-35	-5	-7	-30	-28
60%	-32	-73	-88	-68	-61	-79	-62	-49	-20	-6	-6	-16
70%	-17	-49	-62	-53	-59	-72	-75	-50	-27	-14	-7	-16
80%	-25	-23	-55	-60	-53	-72	-75	-37	-51	-38	-55	-33
90%	-60	-67	-25	-80	-93	-50	-68	-46	-132	-102	-97	-31
Long Term												
Full Simulation Period[b]	-56	-64	-62	-50	-53	-61	-66	-45	-32	-24	-40	-45
Water Year Types[c]												
Wet (32%)	-58	-60	-50	-33	-32	-50	-60	-40	-20	0	-48	-73
Above Normal (16%)	-56	-72	-70	-48	-42	-63	-67	-36	-20	6	-22	-23
Below Normal (13%)	-75	-92	-86	-72	-66	-81	-79	-53	-34	-5	-3	-4
Dry (24%)	-35	-45	-52	-52	-56	-63	-66	-45	-25	-29	-28	-23
Critical (15%)	-70	-69	-79	-69	-91	-64	-68	-57	-80	-116	-94	-79

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-1-5. CVP Total Capacity, Monthly Capacity

Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,767	1,807	1,854	1,883	1,910	1,941	1,942	1,899	1,825	1,767	1,751	1,733
20%	1,731	1,790	1,829	1,862	1,891	1,923	1,907	1,856	1,739	1,676	1,669	1,677
30%	1,687	1,768	1,809	1,849	1,876	1,899	1,890	1,808	1,695	1,620	1,608	1,647
40%	1,645	1,727	1,787	1,832	1,865	1,879	1,857	1,770	1,654	1,590	1,571	1,574
50%	1,583	1,686	1,750	1,811	1,846	1,855	1,832	1,745	1,612	1,550	1,541	1,544
60%	1,561	1,629	1,710	1,768	1,811	1,831	1,788	1,701	1,584	1,509	1,487	1,488
70%	1,482	1,568	1,650	1,714	1,771	1,786	1,760	1,669	1,550	1,471	1,439	1,448
80%	1,379	1,450	1,576	1,644	1,719	1,747	1,713	1,616	1,490	1,391	1,387	1,375
90%	1,197	1,360	1,427	1,535	1,569	1,552	1,523	1,429	1,335	1,222	1,183	1,134
Long Term												
Full Simulation Period[b]	1,532	1,606	1,675	1,735	1,780	1,795	1,772	1,693	1,574	1,492	1,469	1,474
Water Year Types[c]												
Wet (32%)	1,679	1,756	1,811	1,857	1,892	1,926	1,920	1,871	1,773	1,717	1,694	1,701
Above Normal (16%)	1,522	1,652	1,747	1,810	1,856	1,877	1,860	1,778	1,653	1,584	1,567	1,564
Below Normal (13%)	1,606	1,671	1,754	1,792	1,830	1,838	1,807	1,718	1,593	1,496	1,481	1,487
Dry (24%)	1,476	1,536	1,607	1,689	1,746	1,771	1,746	1,652	1,533	1,463	1,445	1,456
Critical (15%)	1,250	1,290	1,342	1,416	1,466	1,419	1,366	1,262	1,106	948	902	904

Alternative 3

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,778	1,818	1,852	1,884	1,910	1,945	1,947	1,910	1,837	1,777	1,759	1,753
20%	1,749	1,789	1,828	1,860	1,894	1,930	1,930	1,883	1,766	1,692	1,687	1,696
30%	1,708	1,772	1,814	1,851	1,884	1,900	1,895	1,828	1,717	1,654	1,633	1,659
40%	1,663	1,741	1,781	1,838	1,866	1,882	1,849	1,777	1,670	1,601	1,604	1,600
50%	1,609	1,689	1,744	1,800	1,840	1,851	1,821	1,760	1,644	1,572	1,554	1,569
60%	1,579	1,639	1,695	1,748	1,797	1,814	1,781	1,711	1,603	1,542	1,511	1,510
70%	1,499	1,557	1,632	1,703	1,768	1,784	1,755	1,665	1,567	1,487	1,453	1,465
80%	1,394	1,457	1,570	1,624	1,708	1,738	1,707	1,620	1,506	1,408	1,378	1,372
90%	1,231	1,365	1,434	1,496	1,518	1,545	1,519	1,453	1,343	1,229	1,190	1,181
Long Term												
Full Simulation Period[b]	1,551	1,613	1,676	1,732	1,777	1,794	1,775	1,705	1,592	1,512	1,486	1,493
Water Year Types[c]												
Wet (32%)	1,690	1,756	1,806	1,856	1,894	1,929	1,928	1,885	1,791	1,730	1,713	1,716
Above Normal (16%)	1,527	1,640	1,746	1,802	1,852	1,875	1,862	1,786	1,679	1,615	1,591	1,589
Below Normal (13%)	1,629	1,676	1,751	1,790	1,829	1,832	1,788	1,718	1,607	1,529	1,504	1,501
Dry (24%)	1,504	1,551	1,612	1,686	1,748	1,768	1,745	1,660	1,555	1,479	1,459	1,475
Critical (15%)	1,283	1,319	1,355	1,411	1,444	1,422	1,386	1,288	1,113	967	909	930

Alternative 3 minus Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	12	12	-2	1	-1	5	5	11	12	10	8	20
20%	18	-2	-2	-2	3	7	24	27	27	16	18	19
30%	22	5	5	3	8	0	5	20	23	35	25	12
40%	18	14	-6	5	0	3	-7	7	16	11	33	26
50%	26	3	-6	-11	-6	-4	-11	14	31	22	14	25
60%	17	9	-15	-20	-14	-17	-7	10	19	32	24	21
70%	17	-11	-18	-10	-3	-3	-4	-4	17	17	13	17
80%	14	7	-6	-20	-11	-9	-6	5	15	17	-9	-3
90%	34	5	7	-40	-51	-8	-4	24	8	7	7	47
Long Term												
Full Simulation Period[b]	19	7	1	-3	-2	-1	3	12	18	20	17	19
Water Year Types[c]												
Wet (32%)	11	0	-5	-1	3	3	8	14	17	13	19	15
Above Normal (16%)	5	-11	-1	-7	-4	-2	1	8	25	31	23	24
Below Normal (13%)	23	5	-3	-2	-2	-6	-19	1	14	34	23	14
Dry (24%)	28	15	5	-3	3	-3	0	9	22	16	14	19
Critical (15%)	33	29	13	-5	-22	3	20	26	7	19	7	26

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-1-6. CVP Total Capacity, Monthly Capacity

Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,767	1,807	1,854	1,883	1,910	1,941	1,942	1,899	1,825	1,767	1,751	1,733
20%	1,731	1,790	1,829	1,862	1,891	1,923	1,907	1,856	1,739	1,676	1,669	1,677
30%	1,687	1,768	1,809	1,849	1,876	1,899	1,890	1,808	1,695	1,620	1,608	1,647
40%	1,645	1,727	1,787	1,832	1,865	1,879	1,857	1,770	1,654	1,590	1,571	1,574
50%	1,583	1,686	1,750	1,811	1,846	1,855	1,832	1,745	1,612	1,550	1,541	1,544
60%	1,561	1,629	1,710	1,768	1,811	1,831	1,788	1,701	1,584	1,509	1,487	1,488
70%	1,482	1,568	1,650	1,714	1,771	1,786	1,760	1,669	1,550	1,471	1,439	1,448
80%	1,379	1,450	1,576	1,644	1,719	1,747	1,713	1,616	1,490	1,391	1,387	1,375
90%	1,197	1,360	1,427	1,535	1,569	1,552	1,523	1,429	1,335	1,222	1,183	1,134
Long Term												
Full Simulation Period[b]	1,532	1,606	1,675	1,735	1,780	1,795	1,772	1,693	1,574	1,492	1,469	1,474
Water Year Types[c]												
Wet (32%)	1,679	1,756	1,811	1,857	1,892	1,926	1,920	1,871	1,773	1,717	1,694	1,701
Above Normal (16%)	1,522	1,652	1,747	1,810	1,856	1,877	1,860	1,778	1,653	1,584	1,567	1,564
Below Normal (13%)	1,606	1,671	1,754	1,792	1,830	1,838	1,807	1,718	1,593	1,496	1,481	1,487
Dry (24%)	1,476	1,536	1,607	1,689	1,746	1,771	1,746	1,652	1,533	1,463	1,445	1,456
Critical (15%)	1,250	1,290	1,342	1,416	1,466	1,419	1,366	1,262	1,106	948	902	904

Alternative 5

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,693	1,746	1,805	1,849	1,882	1,891	1,879	1,849	1,777	1,748	1,671	1,650
20%	1,635	1,721	1,772	1,829	1,859	1,867	1,843	1,806	1,725	1,690	1,624	1,612
30%	1,599	1,680	1,744	1,797	1,836	1,839	1,816	1,766	1,655	1,616	1,576	1,579
40%	1,566	1,638	1,710	1,767	1,801	1,801	1,785	1,732	1,619	1,571	1,538	1,547
50%	1,538	1,596	1,668	1,726	1,775	1,774	1,737	1,700	1,598	1,555	1,504	1,510
60%	1,516	1,552	1,617	1,687	1,737	1,733	1,701	1,643	1,537	1,484	1,460	1,457
70%	1,458	1,512	1,571	1,650	1,694	1,699	1,673	1,596	1,506	1,415	1,413	1,413
80%	1,327	1,399	1,504	1,574	1,644	1,639	1,616	1,532	1,439	1,324	1,302	1,310
90%	1,044	1,242	1,372	1,427	1,440	1,483	1,450	1,351	1,173	1,061	1,046	1,029
Long Term												
Full Simulation Period[b]	1,460	1,532	1,603	1,672	1,716	1,717	1,692	1,633	1,525	1,450	1,410	1,410
Water Year Types[c]												
Wet (32%)	1,609	1,690	1,755	1,819	1,856	1,873	1,858	1,830	1,748	1,715	1,641	1,625
Above Normal (16%)	1,458	1,576	1,671	1,757	1,808	1,806	1,785	1,735	1,624	1,577	1,536	1,532
Below Normal (13%)	1,504	1,559	1,648	1,712	1,755	1,743	1,710	1,653	1,546	1,474	1,465	1,468
Dry (24%)	1,428	1,478	1,545	1,622	1,676	1,686	1,657	1,585	1,485	1,403	1,383	1,391
Critical (15%)	1,152	1,205	1,253	1,308	1,344	1,310	1,274	1,159	985	793	768	794

Alternative 5 minus Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-74	-61	-49	-34	-28	-50	-63	-49	-48	-18	-81	-84
20%	-96	-70	-57	-33	-32	-56	-64	-50	-14	14	-44	-65
30%	-88	-88	-65	-51	-40	-60	-75	-43	-40	-4	-32	-68
40%	-79	-89	-77	-65	-64	-78	-72	-39	-35	-19	-33	-27
50%	-45	-90	-82	-84	-72	-81	-95	-46	-15	5	-37	-34
60%	-45	-77	-93	-81	-73	-98	-87	-58	-47	-26	-27	-31
70%	-24	-55	-79	-64	-78	-88	-86	-73	-44	-55	-27	-35
80%	-52	-51	-72	-70	-75	-108	-97	-84	-51	-67	-85	-64
90%	-153	-118	-56	-108	-129	-69	-73	-79	-161	-161	-136	-106
Long Term												
Full Simulation Period[b]	-72	-74	-72	-63	-64	-78	-80	-60	-48	-42	-59	-64
Water Year Types[c]												
Wet (32%)	-70	-65	-56	-38	-36	-53	-62	-41	-26	-2	-53	-76
Above Normal (16%)	-64	-75	-76	-53	-47	-70	-75	-43	-30	-8	-31	-32
Below Normal (13%)	-101	-113	-107	-80	-75	-95	-96	-65	-47	-22	-16	-19
Dry (24%)	-48	-58	-62	-67	-70	-86	-89	-66	-48	-60	-62	-66
Critical (15%)	-97	-85	-89	-109	-121	-110	-92	-103	-121	-155	-133	-110

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

B.2. CVP Total Energy Generation

Table B-2-1. CVP Total Generation, Monthly Generation

No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	409	413	641	689	671	696	492	616	619	756	585	630
20%	372	380	338	490	622	569	397	549	577	729	549	597
30%	329	310	240	381	471	363	358	514	561	705	536	469
40%	292	274	190	235	245	267	334	478	544	662	511	414
50%	270	231	175	201	205	229	318	464	527	644	496	342
60%	239	183	167	179	173	194	302	442	495	630	476	285
70%	210	162	146	152	141	171	282	415	479	598	451	250
80%	186	140	131	137	130	151	249	350	435	551	421	215
90%	159	118	105	120	110	141	217	291	350	474	359	184
Long Term												
Full Simulation Period[b]	273	255	260	317	322	329	343	461	514	631	487	376
Water Year Types[c]												
Wet (32%)	317	318	441	558	513	557	447	580	568	683	542	598
Above Normal (16%)	268	263	259	320	454	367	370	484	544	708	527	421
Below Normal (13%)	310	258	175	186	266	220	318	455	540	679	529	289
Dry (24%)	254	232	154	183	145	183	263	406	511	607	457	246
Critical (15%)	184	149	123	134	111	135	242	271	345	431	333	145

Alternative 1

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	415	295	659	692	684	702	486	626	696	779	637	441
20%	339	256	436	584	637	584	393	572	655	757	588	370
30%	303	233	242	439	446	357	350	535	623	732	569	334
40%	268	220	194	266	287	256	325	507	602	711	549	315
50%	236	204	182	211	220	232	313	493	577	683	525	297
60%	212	180	169	177	175	194	289	470	553	654	501	278
70%	201	168	148	156	141	177	276	445	530	627	477	258
80%	172	138	134	143	133	154	248	372	481	571	436	225
90%	152	125	112	121	115	141	217	318	390	470	389	186
Long Term												
Full Simulation Period[b]	256	215	278	336	331	334	334	481	569	655	514	305
Water Year Types[c]												
Wet (32%)	297	269	491	582	521	549	428	586	636	697	573	399
Above Normal (16%)	245	215	245	362	479	396	341	513	618	740	571	341
Below Normal (13%)	282	221	188	231	280	246	323	496	612	724	575	306
Dry (24%)	243	183	158	179	150	181	262	433	542	637	463	251
Critical (15%)	180	145	134	134	107	140	253	286	376	442	357	154

Alternative 1 minus No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	6	-118	18	2	14	6	-6	9	77	23	52	-189
20%	-33	-124	98	94	16	14	-5	22	78	28	38	-227
30%	-25	-77	2	58	-25	-6	-8	21	62	27	33	-135
40%	-24	-55	4	30	41	-11	-9	29	58	49	38	-99
50%	-34	-27	7	11	15	3	-5	29	49	39	29	-45
60%	-28	-3	2	-2	2	0	-13	28	58	24	25	-7
70%	-9	6	2	4	0	7	-7	30	51	29	26	8
80%	-14	-3	3	5	3	3	-1	22	46	20	15	9
90%	-7	7	7	1	5	0	1	27	40	-5	30	2
Long Term												
Full Simulation Period[b]	-17	-40	18	19	9	6	-9	21	55	24	28	-71
Water Year Types[c]												
Wet (32%)	-20	-49	50	24	8	-8	-19	5	67	14	31	-199
Above Normal (16%)	-23	-47	-15	43	26	28	-29	30	74	33	43	-80
Below Normal (13%)	-28	-37	12	45	14	26	5	41	73	45	47	16
Dry (24%)	-11	-49	4	-4	5	-2	-1	27	31	29	6	5
Critical (15%)	-4	-4	11	1	-4	5	11	15	31	11	24	9

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Second Basis of Comparison and Alternative 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-2-2. CVP Total Generation, Monthly Generation

No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	409	413	641	689	671	696	492	616	619	756	585	630
20%	372	380	338	490	622	569	397	549	577	729	549	597
30%	329	310	240	381	471	363	358	514	561	705	536	469
40%	292	274	190	235	245	267	334	478	544	662	511	414
50%	270	231	175	201	205	229	318	464	527	644	496	342
60%	239	183	167	179	173	194	302	442	495	630	476	285
70%	210	162	146	152	141	171	282	415	479	598	451	250
80%	186	140	131	137	130	151	249	350	435	551	421	215
90%	159	118	105	120	110	141	217	291	350	474	359	184
Long Term												
Full Simulation Period[b]	273	255	260	317	322	329	343	461	514	631	487	376
Water Year Types[c]												
Wet (32%)	317	318	441	558	513	557	447	580	568	683	542	598
Above Normal (16%)	268	263	259	320	454	367	370	484	544	708	527	421
Below Normal (13%)	310	258	175	186	266	220	318	455	540	679	529	289
Dry (24%)	254	232	154	183	145	183	263	406	511	607	457	246
Critical (15%)	184	149	123	134	111	135	242	271	345	431	333	145

Alternative 3

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	415	306	662	691	701	710	489	598	648	775	610	459
20%	342	256	426	590	650	583	393	551	635	759	578	387
30%	314	227	242	427	458	367	360	507	590	741	557	358
40%	275	216	199	254	283	258	330	493	564	720	538	328
50%	245	204	181	203	220	223	314	469	548	678	525	302
60%	222	180	170	173	179	192	291	442	518	657	513	279
70%	202	164	149	156	142	171	271	421	511	624	482	257
80%	176	145	133	134	128	153	250	363	453	561	445	227
90%	158	124	113	122	109	136	222	300	381	474	387	191
Long Term												
Full Simulation Period[b]	262	215	279	333	336	335	338	462	542	658	512	314
Water Year Types[c]												
Wet (32%)	298	268	493	584	537	551	430	562	593	712	576	407
Above Normal (16%)	249	222	245	350	477	401	346	482	580	736	550	341
Below Normal (13%)	284	211	187	228	283	245	332	476	580	711	557	347
Dry (24%)	256	184	162	175	146	180	265	416	532	635	471	251
Critical (15%)	189	150	132	130	113	139	253	285	373	445	360	160

Alternative 3 minus No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	6	-107	21	2	31	14	-3	-19	30	19	25	-171
20%	-29	-124	88	100	29	14	-4	1	58	30	29	-210
30%	-14	-83	3	46	-13	4	3	-7	29	36	21	-111
40%	-18	-58	9	18	37	-8	-4	15	20	58	27	-85
50%	-25	-27	6	3	15	-7	-5	5	21	34	29	-40
60%	-17	-3	3	-6	6	-1	-10	-1	23	27	36	-6
70%	-8	2	3	4	0	0	-11	6	32	25	32	7
80%	-11	4	2	-3	-2	2	0	12	18	11	24	11
90%	-1	6	9	2	-1	-5	5	9	31	-1	27	7
Long Term												
Full Simulation Period[b]	-11	-40	19	17	14	7	-5	1	28	27	26	-62
Water Year Types[c]												
Wet (32%)	-19	-50	53	27	23	-6	-17	-18	24	29	34	-191
Above Normal (16%)	-18	-41	-14	30	24	33	-24	-1	36	29	23	-80
Below Normal (13%)	-25	-47	12	42	18	25	14	21	40	32	28	58
Dry (24%)	2	-47	8	-7	1	-2	2	10	21	28	14	5
Critical (15%)	6	1	9	-4	1	4	11	14	28	14	28	14

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-2-3. CVP Total Generation, Monthly Generation

No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	409	413	641	689	671	696	492	616	619	756	585	630
20%	372	380	338	490	622	569	397	549	577	729	549	597
30%	329	310	240	381	471	363	358	514	561	705	536	469
40%	292	274	190	235	245	267	334	478	544	662	511	414
50%	270	231	175	201	205	229	318	464	527	644	496	342
60%	239	183	167	179	173	194	302	442	495	630	476	285
70%	210	162	146	152	141	171	282	415	479	598	451	250
80%	186	140	131	137	130	151	249	350	435	551	421	215
90%	159	118	105	120	110	141	217	291	350	474	359	184
Long Term												
Full Simulation Period[b]	273	255	260	317	322	329	343	461	514	631	487	376
Water Year Types[c]												
Wet (32%)	317	318	441	558	513	557	447	580	568	683	542	598
Above Normal (16%)	268	263	259	320	454	367	370	484	544	708	527	421
Below Normal (13%)	310	258	175	186	266	220	318	455	540	679	529	289
Dry (24%)	254	232	154	183	145	183	263	406	511	607	457	246
Critical (15%)	184	149	123	134	111	135	242	271	345	431	333	145

Alternative 5

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	404	410	647	689	671	694	491	627	618	752	574	628
20%	365	380	341	486	622	563	404	562	578	722	553	598
30%	328	316	236	381	459	362	368	513	557	705	534	468
40%	284	281	188	233	245	266	334	482	541	660	514	418
50%	269	226	173	201	205	229	327	460	525	648	498	351
60%	244	182	163	178	173	199	304	439	493	634	471	277
70%	220	161	145	153	139	170	281	412	472	601	451	248
80%	183	140	131	137	127	151	258	343	432	548	416	217
90%	155	113	102	120	108	136	233	308	350	463	365	184
Long Term												
Full Simulation Period[b]	273	254	258	317	321	328	348	463	509	628	485	378
Water Year Types[c]												
Wet (32%)	313	320	438	558	512	554	446	585	567	685	538	598
Above Normal (16%)	266	254	259	321	454	368	370	489	542	708	523	419
Below Normal (13%)	307	257	173	186	265	221	334	458	533	675	520	294
Dry (24%)	254	231	153	183	145	183	273	404	505	604	459	247
Critical (15%)	192	149	120	135	110	132	250	270	336	414	337	153

Alternative 5 minus No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-5	-3	6	0	0	-2	-1	10	-1	-4	-11	-1
20%	-6	0	3	-4	0	-6	7	13	1	-6	4	1
30%	-1	6	-3	0	-13	-1	10	-1	-4	0	-2	-1
40%	-8	6	-2	-2	0	-1	0	5	-3	-2	3	4
50%	-1	-5	-2	0	0	0	9	-4	-2	3	2	9
60%	4	-1	-4	0	0	5	2	-3	-2	4	-5	-8
70%	11	-1	-1	1	-3	0	-2	-3	-7	2	1	-2
80%	-3	-1	0	0	-3	0	9	-7	-3	-3	-5	1
90%	-4	-5	-2	0	-2	-5	16	17	0	-12	6	0
Long Term												
Full Simulation Period[b]	-1	-1	-2	1	-1	-1	5	2	-5	-3	-2	2
Water Year Types[c]												
Wet (32%)	-4	2	-3	1	-1	-3	-1	5	-1	2	-4	1
Above Normal (16%)	-2	-8	-1	1	0	1	-1	5	-2	0	-5	-2
Below Normal (13%)	-3	-1	-2	-1	-1	1	15	3	-7	-4	-9	4
Dry (24%)	-1	-1	-1	0	0	0	9	-2	-6	-3	2	1
Critical (15%)	8	0	-3	1	-1	-3	8	-1	-9	-17	4	8

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-2-4. CVP Total Generation, Monthly Generation

Second Basis of Comparison

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	415	295	659	692	684	702	486	626	696	779	637	441
20%	339	256	436	584	637	584	393	572	655	757	588	370
30%	303	233	242	439	446	357	350	535	623	732	569	334
40%	268	220	194	266	287	256	325	507	602	711	549	315
50%	236	204	182	211	220	232	313	493	577	683	525	297
60%	212	180	169	177	175	194	289	470	553	654	501	278
70%	201	168	148	156	141	177	276	445	530	627	477	258
80%	172	138	134	143	133	154	248	372	481	571	436	225
90%	152	125	112	121	115	141	217	318	390	470	389	186
Long Term												
Full Simulation Period[b]	256	215	278	336	331	334	334	481	569	655	514	305
Water Year Types[c]												
Wet (32%)	297	269	491	582	521	549	428	586	636	697	573	399
Above Normal (16%)	245	215	245	362	479	396	341	513	618	740	571	341
Below Normal (13%)	282	221	188	231	280	246	323	496	612	724	575	306
Dry (24%)	243	183	158	179	150	181	262	433	542	637	463	251
Critical (15%)	180	145	134	134	107	140	253	286	376	442	357	154

No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	409	413	641	689	671	696	492	616	619	756	585	630
20%	372	380	338	490	622	569	397	549	577	729	549	597
30%	329	310	240	381	471	363	358	514	561	705	536	469
40%	292	274	190	235	245	267	334	478	544	662	511	414
50%	270	231	175	201	205	229	318	464	527	644	496	342
60%	239	183	167	179	173	194	302	442	495	630	476	285
70%	210	162	146	152	141	171	282	415	479	598	451	250
80%	186	140	131	137	130	151	249	350	435	551	421	215
90%	159	118	105	120	110	141	217	291	350	474	359	184
Long Term												
Full Simulation Period[b]	273	255	260	317	322	329	343	461	514	631	487	376
Water Year Types[c]												
Wet (32%)	317	318	441	558	513	557	447	580	568	683	542	598
Above Normal (16%)	268	263	259	320	454	367	370	484	544	708	527	421
Below Normal (13%)	310	258	175	186	266	220	318	455	540	679	529	289
Dry (24%)	254	232	154	183	145	183	263	406	511	607	457	246
Critical (15%)	184	149	123	134	111	135	242	271	345	431	333	145

No Action Alternative minus Second Basis of Comparison

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-6	118	-18	-2	-14	-6	6	-9	-77	-23	-52	189
20%	33	124	-98	-94	-16	-14	5	-22	-78	-28	-38	227
30%	25	77	-2	-58	25	6	8	-21	-62	-27	-33	135
40%	24	55	-4	-30	-41	11	9	-29	-58	-49	-38	99
50%	34	27	-7	-11	-15	-3	5	-29	-49	-39	-29	45
60%	28	3	-2	2	-2	0	13	-28	-58	-24	-25	7
70%	9	-6	-2	-4	0	-7	7	-30	-51	-29	-26	-8
80%	14	3	-3	-5	-3	-3	1	-22	-46	-20	-15	-9
90%	7	-7	-7	-1	-5	0	-1	-27	-40	5	-30	-2
Long Term												
Full Simulation Period[b]	17	40	-18	-19	-9	-6	9	-21	-55	-24	-28	71
Water Year Types[c]												
Wet (32%)	20	49	-50	-24	-8	8	19	-5	-67	-14	-31	199
Above Normal (16%)	23	47	15	-43	-26	-28	29	-30	-74	-33	-43	80
Below Normal (13%)	28	37	-12	-45	-14	-26	-5	-41	-73	-45	-47	-16
Dry (24%)	11	49	-4	4	-5	2	1	-27	-31	-29	-6	-5
Critical (15%)	4	4	-11	-1	4	-5	-11	-15	-31	-11	-24	-9

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-2-5. CVP Total Generation, Monthly Generation

Second Basis of Comparison

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	415	295	659	692	684	702	486	626	696	779	637	441
20%	339	256	436	584	637	584	393	572	655	757	588	370
30%	303	233	242	439	446	357	350	535	623	732	569	334
40%	268	220	194	266	287	256	325	507	602	711	549	315
50%	236	204	182	211	220	232	313	493	577	683	525	297
60%	212	180	169	177	175	194	289	470	553	654	501	278
70%	201	168	148	156	141	177	276	445	530	627	477	258
80%	172	138	134	143	133	154	248	372	481	571	436	225
90%	152	125	112	121	115	141	217	318	390	470	389	186
Long Term												
Full Simulation Period[b]	256	215	278	336	331	334	334	481	569	655	514	305
Water Year Types[c]												
Wet (32%)	297	269	491	582	521	549	428	586	636	697	573	399
Above Normal (16%)	245	215	245	362	479	396	341	513	618	740	571	341
Below Normal (13%)	282	221	188	231	280	246	323	496	612	724	575	306
Dry (24%)	243	183	158	179	150	181	262	433	542	637	463	251
Critical (15%)	180	145	134	134	107	140	253	286	376	442	357	154

Alternative 3

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	415	306	662	691	701	710	489	598	648	775	610	459
20%	342	256	426	590	650	583	393	551	635	759	578	387
30%	314	227	242	427	458	367	360	507	590	741	557	358
40%	275	216	199	254	283	258	330	493	564	720	538	328
50%	245	204	181	203	220	223	314	469	548	678	525	302
60%	222	180	170	173	179	192	291	442	518	657	513	279
70%	202	164	149	156	142	171	271	421	511	624	482	257
80%	176	145	133	134	128	153	250	363	453	561	445	227
90%	158	124	113	122	109	136	222	300	381	474	387	191
Long Term												
Full Simulation Period[b]	262	215	279	333	336	335	338	462	542	658	512	314
Water Year Types[c]												
Wet (32%)	298	268	493	584	537	551	430	562	593	712	576	407
Above Normal (16%)	249	222	245	350	477	401	346	482	580	736	550	341
Below Normal (13%)	284	211	187	228	283	245	332	476	580	711	557	347
Dry (24%)	256	184	162	175	146	180	265	416	532	635	471	251
Critical (15%)	189	150	132	130	113	139	253	285	373	445	360	160

Alternative 3 minus Second Basis of Comparison

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-1	11	3	-1	17	8	3	-28	-48	-4	-27	17
20%	4	0	-9	5	13	0	0	-21	-21	2	-10	17
30%	11	-6	0	-12	13	10	10	-28	-33	10	-12	24
40%	7	-3	6	-12	-4	3	6	-14	-38	9	-11	13
50%	9	-1	-2	-8	0	-9	0	-24	-28	-5	0	5
60%	10	1	1	-4	4	-1	3	-28	-35	3	12	1
70%	2	-3	1	0	1	-6	-4	-24	-19	-4	6	-1
80%	4	7	-1	-8	-5	-1	1	-9	-28	-9	9	2
90%	7	-1	1	0	-6	-5	4	-18	-8	4	-2	5
Long Term												
Full Simulation Period[b]	6	0	1	-3	5	1	3	-19	-27	2	-2	9
Water Year Types[c]												
Wet (32%)	1	-2	2	3	16	2	2	-24	-43	15	3	8
Above Normal (16%)	4	6	0	-12	-2	5	5	-31	-38	-4	-21	0
Below Normal (13%)	3	-10	-1	-3	3	-1	9	-20	-33	-12	-18	42
Dry (24%)	13	1	4	-3	-4	0	3	-17	-10	-2	8	0
Critical (15%)	9	5	-2	-4	6	-1	0	-1	-3	3	4	6

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-2-6. CVP Total Generation, Monthly Generation

Second Basis of Comparison

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	415	295	659	692	684	702	486	626	696	779	637	441
20%	339	256	436	584	637	584	393	572	655	757	588	370
30%	303	233	242	439	446	357	350	535	623	732	569	334
40%	268	220	194	266	287	256	325	507	602	711	549	315
50%	236	204	182	211	220	232	313	493	577	683	525	297
60%	212	180	169	177	175	194	289	470	553	654	501	278
70%	201	168	148	156	141	177	276	445	530	627	477	258
80%	172	138	134	143	133	154	248	372	481	571	436	225
90%	152	125	112	121	115	141	217	318	390	470	389	186
Long Term												
Full Simulation Period[b]	256	215	278	336	331	334	334	481	569	655	514	305
Water Year Types[c]												
Wet (32%)	297	269	491	582	521	549	428	586	636	697	573	399
Above Normal (16%)	245	215	245	362	479	396	341	513	618	740	571	341
Below Normal (13%)	282	221	188	231	280	246	323	496	612	724	575	306
Dry (24%)	243	183	158	179	150	181	262	433	542	637	463	251
Critical (15%)	180	145	134	134	107	140	253	286	376	442	357	154

Alternative 5

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	404	410	647	689	671	694	491	627	618	752	574	628
20%	365	380	341	486	622	563	404	562	578	722	553	598
30%	328	316	236	381	459	362	368	513	557	705	534	468
40%	284	281	188	233	245	266	334	482	541	660	514	418
50%	269	226	173	201	205	229	327	460	525	648	498	351
60%	244	182	163	178	173	199	304	439	493	634	471	277
70%	220	161	145	153	139	170	281	412	472	601	451	248
80%	183	140	131	137	127	151	258	343	432	548	416	217
90%	155	113	102	120	108	136	233	308	350	463	365	184
Long Term												
Full Simulation Period[b]	273	254	258	317	321	328	348	463	509	628	485	378
Water Year Types[c]												
Wet (32%)	313	320	438	558	512	554	446	585	567	685	538	598
Above Normal (16%)	266	254	259	321	454	368	370	489	542	708	523	419
Below Normal (13%)	307	257	173	186	265	221	334	458	533	675	520	294
Dry (24%)	254	231	153	183	145	183	273	404	505	604	459	247
Critical (15%)	192	149	120	135	110	132	250	270	336	414	337	153

Alternative 5 minus Second Basis of Comparison

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-11	115	-11	-2	-14	-9	4	1	-78	-27	-63	187
20%	27	124	-95	-99	-15	-21	11	-10	-77	-35	-35	228
30%	24	83	-5	-58	13	5	18	-23	-67	-27	-35	134
40%	16	61	-6	-33	-41	10	9	-25	-61	-51	-36	103
50%	33	22	-9	-11	-15	-3	14	-32	-51	-35	-27	55
60%	32	3	-6	2	-2	5	15	-31	-60	-20	-30	-1
70%	20	-6	-3	-3	-2	-7	5	-33	-58	-26	-25	-10
80%	11	2	-3	-5	-6	-3	10	-29	-49	-23	-20	-8
90%	3	-12	-10	-1	-7	-5	16	-10	-40	-7	-24	-2
Long Term												
Full Simulation Period[b]	16	39	-20	-19	-10	-7	14	-19	-59	-28	-30	73
Water Year Types[c]												
Wet (32%)	16	51	-53	-23	-9	5	18	-1	-69	-12	-35	199
Above Normal (16%)	21	39	14	-41	-25	-28	28	-24	-76	-33	-48	78
Below Normal (13%)	25	36	-14	-45	-15	-25	11	-38	-80	-49	-56	-12
Dry (24%)	10	48	-4	5	-5	2	10	-29	-37	-33	-4	-4
Critical (15%)	12	5	-14	1	3	-8	-3	-16	-40	-28	-20	-1

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

B.3. CVP Total Energy Use

Table B-3-1. CVP Total Energy Use, Monthly Energy Use

No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	111	171	154	153	146	149	60	69	128	153	133	106
20%	95	150	149	131	133	138	43	46	103	139	122	105
30%	85	139	142	118	115	109	37	41	88	122	114	103
40%	76	129	134	113	99	98	35	39	78	114	109	96
50%	72	105	129	110	94	75	32	36	65	104	102	87
60%	67	93	123	105	85	65	31	33	58	93	94	76
70%	62	81	115	95	72	61	29	30	44	84	79	68
80%	57	65	96	83	47	46	25	26	34	69	59	58
90%	54	58	74	71	31	22	21	21	21	42	36	45
Long Term												
Full Simulation Period[b]	76	111	121	108	92	86	36	40	71	101	93	82
Water Year Types[c]												
Wet (32%)	81	125	130	124	125	122	50	58	113	132	119	94
Above Normal (16%)	74	120	123	97	91	104	36	40	85	99	108	87
Below Normal (13%)	79	122	132	107	84	76	30	33	61	106	106	92
Dry (24%)	76	103	120	108	77	64	30	30	42	90	65	72
Critical (15%)	65	73	89	85	52	31	21	22	22	51	56	57

Alternative 1

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	137	151	163	173	183	144	83	90	114	161	182	109
20%	121	141	160	167	149	127	81	65	105	156	154	108
30%	117	139	157	164	143	101	80	59	96	145	132	107
40%	96	134	156	162	139	80	75	54	91	140	128	106
50%	74	124	152	160	135	69	69	47	88	131	124	104
60%	67	109	144	158	116	67	59	45	78	119	109	90
70%	57	96	127	151	84	62	49	38	65	98	86	81
80%	46	80	111	124	55	52	36	29	43	85	63	68
90%	34	66	87	81	27	30	22	23	26	43	39	49
Long Term												
Full Simulation Period[b]	85	115	136	149	115	84	60	51	78	119	113	93
Water Year Types[c]												
Wet (32%)	100	132	154	168	139	94	77	69	102	145	150	110
Above Normal (16%)	76	116	136	151	128	94	78	58	100	129	135	117
Below Normal (13%)	92	134	148	158	104	85	61	52	85	146	137	94
Dry (24%)	86	103	124	143	104	83	44	36	55	107	68	75
Critical (15%)	53	78	106	105	79	50	30	26	30	46	63	56

Alternative 1 minus No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	26	-21	9	20	37	-5	23	21	-14	9	49	3
20%	26	-9	11	36	16	-11	38	19	2	17	32	3
30%	33	-1	16	47	28	-7	42	18	8	23	19	4
40%	20	6	21	49	40	-18	40	15	14	27	19	9
50%	3	19	23	50	41	-6	36	12	23	27	22	17
60%	0	16	21	52	30	2	28	12	20	26	15	13
70%	-5	15	12	55	12	1	20	8	20	14	7	13
80%	-12	15	15	42	8	6	11	3	9	16	3	10
90%	-21	8	13	10	-4	8	1	2	5	1	3	4
Long Term												
Full Simulation Period[b]	8	4	15	40	24	-2	24	11	7	18	20	11
Water Year Types[c]												
Wet (32%)	18	7	25	44	15	-28	27	10	-11	12	31	16
Above Normal (16%)	1	-3	13	54	38	-11	42	17	16	30	27	30
Below Normal (13%)	13	12	16	51	20	9	31	18	23	41	32	2
Dry (24%)	9	0	4	35	27	19	13	6	13	17	3	3
Critical (15%)	-12	5	17	19	27	20	10	3	8	-5	7	-1

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Second Basis of Comparison and Alternative 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-3-2. CVP Total Energy Use, Monthly Energy Use

No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	111	171	154	153	146	149	60	69	128	153	133	106
20%	95	150	149	131	133	138	43	46	103	139	122	105
30%	85	139	142	118	115	109	37	41	88	122	114	103
40%	76	129	134	113	99	98	35	39	78	114	109	96
50%	72	105	129	110	94	75	32	36	65	104	102	87
60%	67	93	123	105	85	65	31	33	58	93	94	76
70%	62	81	115	95	72	61	29	30	44	84	79	68
80%	57	65	96	83	47	46	25	26	34	69	59	58
90%	54	58	74	71	31	22	21	21	21	42	36	45
Long Term												
Full Simulation Period[b]	76	111	121	108	92	86	36	40	71	101	93	82
Water Year Types[c]												
Wet (32%)	81	125	130	124	125	122	50	58	113	132	119	94
Above Normal (16%)	74	120	123	97	91	104	36	40	85	99	108	87
Below Normal (13%)	79	122	132	107	84	76	30	33	61	106	106	92
Dry (24%)	76	103	120	108	77	64	30	30	42	90	65	72
Critical (15%)	65	73	89	85	52	31	21	22	22	51	56	57

Alternative 3

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	143	149	161	165	151	147	87	99	142	154	156	139
20%	124	140	157	131	142	139	82	89	122	146	134	112
30%	119	138	154	120	126	100	81	79	106	139	132	107
40%	108	128	143	117	105	78	79	72	100	128	128	106
50%	86	118	140	110	91	72	72	66	91	118	113	105
60%	70	107	131	104	75	64	64	53	80	103	99	95
70%	63	95	122	93	65	62	46	40	59	87	83	85
80%	52	82	102	84	54	51	35	30	41	71	62	63
90%	46	66	73	76	31	24	23	23	24	46	41	45
Long Term												
Full Simulation Period[b]	91	113	129	109	95	85	62	62	85	109	106	97
Water Year Types[c]												
Wet (32%)	101	130	144	128	135	108	83	87	125	139	140	113
Above Normal (16%)	83	113	122	93	96	125	77	74	105	115	121	111
Below Normal (13%)	94	130	144	111	85	78	56	58	86	123	117	126
Dry (24%)	97	104	126	108	75	65	49	44	54	98	75	74
Critical (15%)	64	78	97	85	53	31	30	25	27	43	55	58

Alternative 3 minus No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	31	-23	7	12	5	-2	27	31	14	1	23	33
20%	29	-10	8	0	9	0	39	43	20	7	12	7
30%	34	-1	13	2	11	-9	44	38	19	17	18	4
40%	32	-1	8	4	6	-20	45	33	22	14	19	10
50%	14	13	11	1	-3	-3	39	31	25	14	12	18
60%	3	14	8	-1	-10	-1	33	20	22	10	5	19
70%	1	14	8	-3	-7	1	17	10	14	3	4	17
80%	-5	18	6	2	7	5	10	4	8	2	3	5
90%	-9	8	-2	5	-1	1	2	2	3	4	5	1
Long Term												
Full Simulation Period[b]	14	2	9	1	4	-1	26	22	14	8	13	15
Water Year Types[c]												
Wet (32%)	20	5	14	4	10	-14	33	29	12	7	21	19
Above Normal (16%)	9	-7	-1	-4	6	20	41	34	20	16	13	24
Below Normal (13%)	15	9	12	4	1	2	26	25	25	17	11	34
Dry (24%)	21	0	6	0	-2	2	18	13	12	8	10	2
Critical (15%)	-1	4	8	0	1	0	9	3	4	-8	-1	2

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-3-3. CVP Total Energy Use, Monthly Energy Use

No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	111	171	154	153	146	149	60	69	128	153	133	106
20%	95	150	149	131	133	138	43	46	103	139	122	105
30%	85	139	142	118	115	109	37	41	88	122	114	103
40%	76	129	134	113	99	98	35	39	78	114	109	96
50%	72	105	129	110	94	75	32	36	65	104	102	87
60%	67	93	123	105	85	65	31	33	58	93	94	76
70%	62	81	115	95	72	61	29	30	44	84	79	68
80%	57	65	96	83	47	46	25	26	34	69	59	58
90%	54	58	74	71	31	22	21	21	21	42	36	45
Long Term												
Full Simulation Period[b]	76	111	121	108	92	86	36	40	71	101	93	82
Water Year Types[c]												
Wet (32%)	81	125	130	124	125	122	50	58	113	132	119	94
Above Normal (16%)	74	120	123	97	91	104	36	40	85	99	108	87
Below Normal (13%)	79	122	132	107	84	76	30	33	61	106	106	92
Dry (24%)	76	103	120	108	77	64	30	30	42	90	65	72
Critical (15%)	65	73	89	85	52	31	21	22	22	51	56	57

Alternative 5

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	106	174	154	153	146	153	59	68	128	155	132	106
20%	94	153	151	134	134	138	41	44	103	140	121	105
30%	85	140	142	120	116	109	35	40	86	122	113	102
40%	75	126	135	114	104	99	32	37	77	115	110	95
50%	72	106	128	110	94	75	30	33	65	105	102	90
60%	69	92	123	104	86	65	29	30	57	94	94	76
70%	63	74	115	95	71	61	24	22	46	88	80	70
80%	59	65	92	83	46	48	18	16	32	74	63	58
90%	54	56	68	71	32	22	13	12	24	50	49	47
Long Term												
Full Simulation Period[b]	76	110	121	109	92	86	33	36	71	103	95	82
Water Year Types[c]												
Wet (32%)	81	129	131	125	124	123	50	58	113	132	119	93
Above Normal (16%)	75	112	122	100	90	104	35	40	84	100	107	86
Below Normal (13%)	76	122	132	107	90	77	28	30	62	106	100	96
Dry (24%)	74	101	121	108	77	64	23	21	43	96	71	74
Critical (15%)	69	73	86	88	54	30	13	13	22	56	64	56

Alternative 5 minus No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-5	3	0	0	1	4	-1	-1	0	2	-1	0
20%	-1	3	2	2	1	-1	-1	-2	1	1	-1	0
30%	0	0	0	2	1	0	-2	-1	-1	1	-1	-1
40%	-1	-3	1	1	5	0	-2	-2	-1	1	1	-1
50%	0	1	0	0	0	0	-2	-3	0	1	1	2
60%	3	-2	0	-2	1	0	-2	-3	-1	1	0	0
70%	1	-7	1	0	-1	0	-5	-8	2	4	1	2
80%	1	0	-4	0	-1	2	-6	-10	-2	5	4	0
90%	0	-2	-6	0	1	0	-8	-10	3	8	13	2
Long Term												
Full Simulation Period[b]	0	-1	0	1	1	0	-3	-4	0	2	2	0
Water Year Types[c]												
Wet (32%)	-1	4	1	1	-1	0	0	0	0	0	0	-1
Above Normal (16%)	1	-8	-1	3	0	0	-1	-1	-1	0	-1	-1
Below Normal (13%)	-3	0	0	0	6	1	-2	-4	0	0	-6	4
Dry (24%)	-2	-3	1	-1	0	0	-8	-9	1	6	6	2
Critical (15%)	4	0	-3	3	2	0	-8	-9	0	5	8	-1

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-3-4. CVP Total Energy Use, Monthly Energy Use

Second Basis of Comparison

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	137	151	163	173	183	144	83	90	114	161	182	109
20%	121	141	160	167	149	127	81	65	105	156	154	108
30%	117	139	157	164	143	101	80	59	96	145	132	107
40%	96	134	156	162	139	80	75	54	91	140	128	106
50%	74	124	152	160	135	69	69	47	88	131	124	104
60%	67	109	144	158	116	67	59	45	78	119	109	90
70%	57	96	127	151	84	62	49	38	65	98	86	81
80%	46	80	111	124	55	52	36	29	43	85	63	68
90%	34	66	87	81	27	30	22	23	26	43	39	49
Long Term												
Full Simulation Period[b]	85	115	136	149	115	84	60	51	78	119	113	93
Water Year Types[c]												
Wet (32%)	100	132	154	168	139	94	77	69	102	145	150	110
Above Normal (16%)	76	116	136	151	128	94	78	58	100	129	135	117
Below Normal (13%)	92	134	148	158	104	85	61	52	85	146	137	94
Dry (24%)	86	103	124	143	104	83	44	36	55	107	68	75
Critical (15%)	53	78	106	105	79	50	30	26	30	46	63	56

No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	111	171	154	153	146	149	60	69	128	153	133	106
20%	95	150	149	131	133	138	43	46	103	139	122	105
30%	85	139	142	118	115	109	37	41	88	122	114	103
40%	76	129	134	113	99	98	35	39	78	114	109	96
50%	72	105	129	110	94	75	32	36	65	104	102	87
60%	67	93	123	105	85	65	31	33	58	93	94	76
70%	62	81	115	95	72	61	29	30	44	84	79	68
80%	57	65	96	83	47	46	25	26	34	69	59	58
90%	54	58	74	71	31	22	21	21	21	42	36	45
Long Term												
Full Simulation Period[b]	76	111	121	108	92	86	36	40	71	101	93	82
Water Year Types[c]												
Wet (32%)	81	125	130	124	125	122	50	58	113	132	119	94
Above Normal (16%)	74	120	123	97	91	104	36	40	85	99	108	87
Below Normal (13%)	79	122	132	107	84	76	30	33	61	106	106	92
Dry (24%)	76	103	120	108	77	64	30	30	42	90	65	72
Critical (15%)	65	73	89	85	52	31	21	22	22	51	56	57

No Action Alternative minus Second Basis of Comparison

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-26	21	-9	-20	-37	5	-23	-21	14	-9	-49	-3
20%	-26	9	-11	-36	-16	11	-38	-19	-2	-17	-32	-3
30%	-33	1	-16	-47	-28	7	-42	-18	-8	-23	-19	-4
40%	-20	-6	-21	-49	-40	18	-40	-15	-14	-27	-19	-9
50%	-3	-19	-23	-50	-41	6	-36	-12	-23	-27	-22	-17
60%	0	-16	-21	-52	-30	-2	-28	-12	-20	-26	-15	-13
70%	5	-15	-12	-55	-12	-1	-20	-8	-20	-14	-7	-13
80%	12	-15	-15	-42	-8	-6	-11	-3	-9	-16	-3	-10
90%	21	-8	-13	-10	4	-8	-1	-2	-5	-1	-3	-4
Long Term												
Full Simulation Period[b]	-8	-4	-15	-40	-24	2	-24	-11	-7	-18	-20	-11
Water Year Types[c]												
Wet (32%)	-18	-7	-25	-44	-15	28	-27	-10	11	-12	-31	-16
Above Normal (16%)	-1	3	-13	-54	-38	11	-42	-17	-16	-30	-27	-30
Below Normal (13%)	-13	-12	-16	-51	-20	-9	-31	-18	-23	-41	-32	-2
Dry (24%)	-9	0	-4	-35	-27	-19	-13	-6	-13	-17	-3	-3
Critical (15%)	12	-5	-17	-19	-27	-20	-10	-3	-8	5	-7	1

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-3-5. CVP Total Energy Use, Monthly Energy Use

Second Basis of Comparison

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	137	151	163	173	183	144	83	90	114	161	182	109
20%	121	141	160	167	149	127	81	65	105	156	154	108
30%	117	139	157	164	143	101	80	59	96	145	132	107
40%	96	134	156	162	139	80	75	54	91	140	128	106
50%	74	124	152	160	135	69	69	47	88	131	124	104
60%	67	109	144	158	116	67	59	45	78	119	109	90
70%	57	96	127	151	84	62	49	38	65	98	86	81
80%	46	80	111	124	55	52	36	29	43	85	63	68
90%	34	66	87	81	27	30	22	23	26	43	39	49
Long Term												
Full Simulation Period[b]	85	115	136	149	115	84	60	51	78	119	113	93
Water Year Types[c]												
Wet (32%)	100	132	154	168	139	94	77	69	102	145	150	110
Above Normal (16%)	76	116	136	151	128	94	78	58	100	129	135	117
Below Normal (13%)	92	134	148	158	104	85	61	52	85	146	137	94
Dry (24%)	86	103	124	143	104	83	44	36	55	107	68	75
Critical (15%)	53	78	106	105	79	50	30	26	30	46	63	56

Alternative 3

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	143	149	161	165	151	147	87	99	142	154	156	139
20%	124	140	157	131	142	139	82	89	122	146	134	112
30%	119	138	154	120	126	100	81	79	106	139	132	107
40%	108	128	143	117	105	78	79	72	100	128	128	106
50%	86	118	140	110	91	72	72	66	91	118	113	105
60%	70	107	131	104	75	64	64	53	80	103	99	95
70%	63	95	122	93	65	62	46	40	59	87	83	85
80%	52	82	102	84	54	51	35	30	41	71	62	63
90%	46	66	73	76	31	24	23	23	24	46	41	45
Long Term												
Full Simulation Period[b]	91	113	129	109	95	85	62	62	85	109	106	97
Water Year Types[c]												
Wet (32%)	101	130	144	128	135	108	83	87	125	139	140	113
Above Normal (16%)	83	113	122	93	96	125	77	74	105	115	121	111
Below Normal (13%)	94	130	144	111	85	78	56	58	86	123	117	126
Dry (24%)	97	104	126	108	75	65	49	44	54	98	75	74
Critical (15%)	64	78	97	85	53	31	30	25	27	43	55	58

Alternative 3 minus Second Basis of Comparison

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	6	-2	-2	-8	-32	3	4	10	28	-7	-26	30
20%	3	-1	-2	-36	-7	11	1	24	18	-10	-21	4
30%	2	0	-3	-44	-17	-1	2	20	10	-6	-1	1
40%	12	-6	-13	-45	-34	-2	4	18	9	-13	0	0
50%	11	-5	-13	-49	-44	3	3	19	3	-13	-10	0
60%	3	-2	-13	-54	-40	-3	5	9	2	-17	-10	6
70%	6	-1	-4	-58	-19	0	-3	2	-6	-11	-4	4
80%	6	2	-9	-40	-1	-1	-1	2	-2	-14	0	-5
90%	12	0	-14	-6	3	-6	1	0	-2	3	3	-4
Long Term												
Full Simulation Period[b]	6	-1	-7	-40	-20	1	2	11	7	-10	-7	4
Water Year Types[c]												
Wet (32%)	1	-1	-10	-40	-5	14	6	18	23	-6	-10	3
Above Normal (16%)	7	-4	-14	-58	-32	31	-2	17	5	-14	-13	-6
Below Normal (13%)	2	-4	-3	-47	-19	-7	-6	7	1	-23	-20	32
Dry (24%)	11	1	2	-35	-29	-18	5	7	-1	-9	7	-1
Critical (15%)	11	0	-9	-19	-26	-20	0	0	-3	-3	-7	2

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-3-6. CVP Total Energy Use, Monthly Energy Use

Second Basis of Comparison

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	137	151	163	173	183	144	83	90	114	161	182	109
20%	121	141	160	167	149	127	81	65	105	156	154	108
30%	117	139	157	164	143	101	80	59	96	145	132	107
40%	96	134	156	162	139	80	75	54	91	140	128	106
50%	74	124	152	160	135	69	69	47	88	131	124	104
60%	67	109	144	158	116	67	59	45	78	119	109	90
70%	57	96	127	151	84	62	49	38	65	98	86	81
80%	46	80	111	124	55	52	36	29	43	85	63	68
90%	34	66	87	81	27	30	22	23	26	43	39	49
Long Term												
Full Simulation Period[b]	85	115	136	149	115	84	60	51	78	119	113	93
Water Year Types[c]												
Wet (32%)	100	132	154	168	139	94	77	69	102	145	150	110
Above Normal (16%)	76	116	136	151	128	94	78	58	100	129	135	117
Below Normal (13%)	92	134	148	158	104	85	61	52	85	146	137	94
Dry (24%)	86	103	124	143	104	83	44	36	55	107	68	75
Critical (15%)	53	78	106	105	79	50	30	26	30	46	63	56

Alternative 5

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	106	174	154	153	146	153	59	68	128	155	132	106
20%	94	153	151	134	134	138	41	44	103	140	121	105
30%	85	140	142	120	116	109	35	40	86	122	113	102
40%	75	126	135	114	104	99	32	37	77	115	110	95
50%	72	106	128	110	94	75	30	33	65	105	102	90
60%	69	92	123	104	86	65	29	30	57	94	94	76
70%	63	74	115	95	71	61	24	22	46	88	80	70
80%	59	65	92	83	46	48	18	16	32	74	63	58
90%	54	56	68	71	32	22	13	12	24	50	49	47
Long Term												
Full Simulation Period[b]	76	110	121	109	92	86	33	36	71	103	95	82
Water Year Types[c]												
Wet (32%)	81	129	131	125	124	123	50	58	113	132	119	93
Above Normal (16%)	75	112	122	100	90	104	35	40	84	100	107	86
Below Normal (13%)	76	122	132	107	90	77	28	30	62	106	100	96
Dry (24%)	74	101	121	108	77	64	23	21	43	96	71	74
Critical (15%)	69	73	86	88	54	30	13	13	22	56	64	56

Alternative 5 minus Second Basis of Comparison

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-31	24	-8	-21	-36	9	-24	-22	13	-7	-50	-3
20%	-27	12	-8	-34	-15	10	-40	-20	-1	-16	-33	-3
30%	-32	1	-15	-45	-27	8	-44	-19	-10	-22	-20	-4
40%	-20	-9	-21	-48	-35	18	-42	-17	-15	-26	-18	-11
50%	-2	-18	-24	-50	-41	6	-39	-15	-22	-26	-22	-15
60%	3	-18	-21	-54	-30	-2	-30	-15	-20	-25	-15	-13
70%	6	-22	-11	-55	-13	-2	-26	-16	-19	-10	-6	-11
80%	13	-16	-19	-42	-9	-4	-17	-13	-11	-11	0	-11
90%	20	-10	-18	-10	5	-8	-9	-11	-2	7	11	-2
Long Term												
Full Simulation Period[b]	-9	-5	-15	-40	-23	2	-28	-15	-6	-15	-18	-10
Water Year Types[c]												
Wet (32%)	-19	-3	-24	-43	-16	29	-27	-11	11	-13	-30	-17
Above Normal (16%)	0	-4	-14	-51	-38	11	-43	-18	-17	-29	-28	-31
Below Normal (13%)	-16	-12	-16	-51	-14	-8	-33	-22	-23	-41	-38	2
Dry (24%)	-11	-2	-2	-35	-27	-19	-21	-15	-12	-11	3	-1
Critical (15%)	16	-5	-20	-16	-25	-20	-17	-12	-8	10	1	0

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

B.4. CVP Net Energy Generation

Table B-4-1. CVP Net Generation, Monthly Net Generation

No Action Alternative

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	324	257	523	556	567	564	449	560	543	664	474	528
20%	283	220	218	372	491	444	355	513	500	624	446	491
30%	249	195	116	257	358	262	325	468	476	596	427	366
40%	216	162	72	147	163	169	304	441	452	558	418	344
50%	200	112	49	104	110	150	285	424	438	537	405	246
60%	154	96	42	71	94	133	270	404	426	508	381	198
70%	134	71	30	50	71	109	248	383	410	480	366	183
80%	119	56	18	37	54	95	225	327	377	450	347	150
90%	86	40	-1	24	36	72	198	262	332	400	302	104
Long Term												
Full Simulation Period[b]	197	145	139	209	230	243	307	420	443	530	393	295
Water Year Types[c]												
Wet (32%)	236	193	311	433	389	435	397	522	455	551	423	504
Above Normal (16%)	193	143	136	223	363	263	334	443	459	608	419	334
Below Normal (13%)	231	137	43	79	181	144	288	422	478	573	423	198
Dry (24%)	178	128	34	74	67	119	233	376	469	518	391	174
Critical (15%)	118	76	34	48	59	104	221	249	323	380	276	89

Alternative 1

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	285	162	524	558	567	562	404	561	600	638	480	291
20%	239	132	272	412	486	482	324	519	577	622	463	256
30%	195	103	114	288	296	288	297	481	531	602	438	227
40%	173	87	72	135	208	188	273	461	517	579	422	217
50%	162	81	43	78	114	155	255	444	488	547	405	205
60%	152	75	33	30	74	132	238	413	469	518	393	189
70%	138	58	24	18	53	108	214	384	454	493	369	179
80%	106	50	12	6	20	86	194	343	407	463	356	155
90%	92	32	-10	-8	-7	65	162	292	363	398	321	98
Long Term												
Full Simulation Period[b]	172	100	142	187	215	251	274	431	491	537	401	213
Water Year Types[c]												
Wet (32%)	197	138	336	414	382	455	351	517	533	552	423	289
Above Normal (16%)	169	99	109	211	351	302	263	456	517	611	436	224
Below Normal (13%)	189	87	40	73	176	161	262	444	527	577	438	212
Dry (24%)	158	80	34	35	46	98	219	397	487	530	395	176
Critical (15%)	126	67	28	30	28	90	223	261	346	395	294	98

Alternative 1 minus No Action Alternative

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-39	-95	2	1	0	-3	-45	2	58	-26	6	-237
20%	-44	-88	55	40	-5	38	-32	6	76	-2	17	-236
30%	-54	-92	-2	31	-61	26	-28	13	55	6	11	-139
40%	-43	-75	0	-11	45	19	-32	20	65	21	4	-126
50%	-38	-31	-6	-27	4	5	-30	20	50	11	0	-42
60%	-3	-22	-9	-40	-20	-1	-32	9	42	10	12	-9
70%	4	-12	-6	-32	-18	-1	-34	1	44	13	3	-4
80%	-13	-6	-6	-31	-34	-9	-32	15	30	13	8	5
90%	6	-8	-10	-32	-43	-7	-35	30	31	-2	19	-6
Long Term												
Full Simulation Period[b]	-25	-44	2	-21	-15	8	-33	10	48	7	8	-82
Water Year Types[c]												
Wet (32%)	-38	-55	25	-20	-7	20	-46	-5	78	1	0	-215
Above Normal (16%)	-24	-44	-28	-11	-12	39	-71	13	58	3	17	-110
Below Normal (13%)	-41	-49	-3	-6	-6	17	-27	22	49	4	15	14
Dry (24%)	-20	-48	0	-39	-21	-21	-14	21	18	12	3	2
Critical (15%)	8	-9	-6	-18	-31	-15	2	12	23	16	17	9

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Second Basis of Comparison and Alternative 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-4-2. CVP Net Generation, Monthly Net Generation

No Action Alternative

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	324	257	523	556	567	564	449	560	543	664	474	528
20%	283	220	218	372	491	444	355	513	500	624	446	491
30%	249	195	116	257	358	262	325	468	476	596	427	366
40%	216	162	72	147	163	169	304	441	452	558	418	344
50%	200	112	49	104	110	150	285	424	438	537	405	246
60%	154	96	42	71	94	133	270	404	426	508	381	198
70%	134	71	30	50	71	109	248	383	410	480	366	183
80%	119	56	18	37	54	95	225	327	377	450	347	150
90%	86	40	-1	24	36	72	198	262	332	400	302	104
Long Term												
Full Simulation Period[b]	197	145	139	209	230	243	307	420	443	530	393	295
Water Year Types[c]												
Wet (32%)	236	193	311	433	389	435	397	522	455	551	423	504
Above Normal (16%)	193	143	136	223	363	263	334	443	459	608	419	334
Below Normal (13%)	231	137	43	79	181	144	288	422	478	573	423	198
Dry (24%)	178	128	34	74	67	119	233	376	469	518	391	174
Critical (15%)	118	76	34	48	59	104	221	249	323	380	276	89

Alternative 3

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	291	182	530	558	606	583	437	534	563	674	481	336
20%	235	125	266	480	511	511	316	479	531	638	465	266
30%	193	104	114	332	334	287	298	459	508	622	441	246
40%	173	91	74	160	183	189	268	439	473	596	424	216
50%	158	77	52	112	122	150	251	392	448	544	409	205
60%	147	66	39	72	84	122	229	374	433	528	387	195
70%	133	60	25	51	71	106	216	348	411	506	374	181
80%	113	52	12	36	56	92	200	316	387	469	362	155
90%	88	31	-6	18	41	71	174	260	340	397	326	104
Long Term												
Full Simulation Period[b]	172	102	150	224	241	250	275	400	457	549	406	217
Water Year Types[c]												
Wet (32%)	197	137	349	456	402	443	347	475	467	572	436	294
Above Normal (16%)	166	109	123	257	381	276	269	408	475	621	429	230
Below Normal (13%)	190	81	42	117	198	167	276	418	493	588	440	221
Dry (24%)	160	81	36	67	71	115	217	372	478	537	396	177
Critical (15%)	125	73	35	45	60	108	223	260	346	402	305	101

Alternative 3 minus No Action Alternative

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-33	-74	7	1	39	19	-13	-25	21	10	7	-192
20%	-48	-95	48	108	20	67	-39	-34	31	14	19	-226
30%	-56	-91	-2	76	-23	25	-27	-9	31	26	14	-120
40%	-43	-71	2	13	20	21	-36	-2	21	37	7	-128
50%	-42	-34	2	7	12	0	-34	-32	11	7	4	-41
60%	-8	-30	-4	1	-11	-11	-41	-30	7	20	6	-3
70%	-2	-11	-5	1	1	-4	-32	-35	1	26	8	-2
80%	-6	-4	-6	-1	1	-3	-26	-11	9	19	14	5
90%	3	-9	-5	-6	5	-1	-23	-3	8	-3	24	0
Long Term												
Full Simulation Period[b]	-25	-43	10	16	10	7	-32	-20	14	19	13	-77
Water Year Types[c]												
Wet (32%)	-39	-56	38	23	13	8	-50	-47	12	22	13	-210
Above Normal (16%)	-27	-34	-13	35	18	13	-65	-35	16	13	10	-104
Below Normal (13%)	-40	-56	-1	38	17	23	-12	-4	15	15	17	23
Dry (24%)	-19	-48	2	-7	4	-4	-16	-3	9	20	4	3
Critical (15%)	7	-4	1	-3	1	4	1	11	24	22	28	13

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-4-3. CVP Net Generation, Monthly Net Generation

No Action Alternative

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	324	257	523	556	567	564	449	560	543	664	474	528
20%	283	220	218	372	491	444	355	513	500	624	446	491
30%	249	195	116	257	358	262	325	468	476	596	427	366
40%	216	162	72	147	163	169	304	441	452	558	418	344
50%	200	112	49	104	110	150	285	424	438	537	405	246
60%	154	96	42	71	94	133	270	404	426	508	381	198
70%	134	71	30	50	71	109	248	383	410	480	366	183
80%	119	56	18	37	54	95	225	327	377	450	347	150
90%	86	40	-1	24	36	72	198	262	332	400	302	104
Long Term												
Full Simulation Period[b]	197	145	139	209	230	243	307	420	443	530	393	295
Water Year Types[c]												
Wet (32%)	236	193	311	433	389	435	397	522	455	551	423	504
Above Normal (16%)	193	143	136	223	363	263	334	443	459	608	419	334
Below Normal (13%)	231	137	43	79	181	144	288	422	478	573	423	198
Dry (24%)	178	128	34	74	67	119	233	376	469	518	391	174
Critical (15%)	118	76	34	48	59	104	221	249	323	380	276	89

Alternative 5

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	323	255	511	557	567	559	451	559	528	654	468	527
20%	285	219	219	356	495	444	360	514	496	620	442	495
30%	233	186	113	253	363	270	330	469	475	589	426	365
40%	217	160	72	146	159	168	310	447	450	551	415	343
50%	194	116	48	104	107	148	294	426	437	531	402	243
60%	158	99	39	72	92	131	274	409	424	509	377	199
70%	134	71	28	52	67	105	254	389	404	485	366	177
80%	110	57	18	38	52	84	237	323	368	425	346	146
90%	84	31	-2	25	35	72	210	288	322	396	304	107
Long Term												
Full Simulation Period[b]	197	144	137	208	229	242	315	427	438	524	390	296
Water Year Types[c]												
Wet (32%)	233	191	307	433	388	431	397	527	454	553	419	506
Above Normal (16%)	190	142	136	221	364	264	335	449	458	608	416	333
Below Normal (13%)	230	135	42	79	175	144	305	428	471	569	420	198
Dry (24%)	179	130	32	75	67	119	250	383	461	508	388	173
Critical (15%)	123	76	34	47	56	102	237	257	314	358	273	97

Alternative 5 minus No Action Alternative

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-1	-1	-12	1	0	-5	1	-1	-14	-9	-6	-1
20%	2	-1	1	-16	4	1	5	1	-5	-4	-4	4
30%	-16	-9	-2	-4	6	8	5	1	-1	-8	-1	-1
40%	1	-2	-1	-1	-3	-1	5	6	-2	-7	-3	-1
50%	-7	4	-2	-1	-3	-2	9	2	-1	-5	-3	-3
60%	3	2	-3	1	-3	-2	4	5	-2	1	-4	1
70%	0	0	-2	1	-4	-4	6	6	-6	5	0	-6
80%	-9	1	0	1	-2	-11	12	-5	-9	-25	-1	-4
90%	-1	-9	-1	1	0	-1	12	26	-10	-4	2	3
Long Term												
Full Simulation Period[b]	0	0	-2	0	-1	-1	9	6	-5	-5	-4	1
Water Year Types[c]												
Wet (32%)	-3	-2	-4	0	0	-3	-1	5	-1	2	-4	2
Above Normal (16%)	-3	-1	0	-2	1	1	0	6	-1	0	-3	-2
Below Normal (13%)	0	-2	-1	-1	-6	0	17	6	-7	-4	-3	0
Dry (24%)	1	2	-2	1	0	0	17	7	-8	-9	-4	-1
Critical (15%)	5	0	0	-1	-3	-2	15	8	-8	-22	-3	8

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-4-4. CVP Net Generation, Monthly Net Generation

Second Basis of Comparison

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	285	162	524	558	567	562	404	561	600	638	480	291
20%	239	132	272	412	486	482	324	519	577	622	463	256
30%	195	103	114	288	296	288	297	481	531	602	438	227
40%	173	87	72	135	208	188	273	461	517	579	422	217
50%	162	81	43	78	114	155	255	444	488	547	405	205
60%	152	75	33	30	74	132	238	413	469	518	393	189
70%	138	58	24	18	53	108	214	384	454	493	369	179
80%	106	50	12	6	20	86	194	343	407	463	356	155
90%	92	32	-10	-8	-7	65	162	292	363	398	321	98
Long Term												
Full Simulation Period[b]	172	100	142	187	215	251	274	431	491	537	401	213
Water Year Types[c]												
Wet (32%)	197	138	336	414	382	455	351	517	533	552	423	289
Above Normal (16%)	169	99	109	211	351	302	263	456	517	611	436	224
Below Normal (13%)	189	87	40	73	176	161	262	444	527	577	438	212
Dry (24%)	158	80	34	35	46	98	219	397	487	530	395	176
Critical (15%)	126	67	28	30	28	90	223	261	346	395	294	98

No Action Alternative

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	324	257	523	556	567	564	449	560	543	664	474	528
20%	283	220	218	372	491	444	355	513	500	624	446	491
30%	249	195	116	257	358	262	325	468	476	596	427	366
40%	216	162	72	147	163	169	304	441	452	558	418	344
50%	200	112	49	104	110	150	285	424	438	537	405	246
60%	154	96	42	71	94	133	270	404	426	508	381	198
70%	134	71	30	50	71	109	248	383	410	480	366	183
80%	119	56	18	37	54	95	225	327	377	450	347	150
90%	86	40	-1	24	36	72	198	262	332	400	302	104
Long Term												
Full Simulation Period[b]	197	145	139	209	230	243	307	420	443	530	393	295
Water Year Types[c]												
Wet (32%)	236	193	311	433	389	435	397	522	455	551	423	504
Above Normal (16%)	193	143	136	223	363	263	334	443	459	608	419	334
Below Normal (13%)	231	137	43	79	181	144	288	422	478	573	423	198
Dry (24%)	178	128	34	74	67	119	233	376	469	518	391	174
Critical (15%)	118	76	34	48	59	104	221	249	323	380	276	89

No Action Alternative minus Second Basis of Comparison

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	39	95	-2	-1	0	3	45	-2	-58	26	-6	237
20%	44	88	-55	-40	5	-38	32	-6	-76	2	-17	236
30%	54	92	2	-31	61	-26	28	-13	-55	-6	-11	139
40%	43	75	0	11	-45	-19	32	-20	-65	-21	-4	126
50%	38	31	6	27	-4	-5	30	-20	-50	-11	0	42
60%	3	22	9	40	20	1	32	-9	-42	-10	-12	9
70%	-4	12	6	32	18	1	34	-1	-44	-13	-3	4
80%	13	6	6	31	34	9	32	-15	-30	-13	-8	-5
90%	-6	8	10	32	43	7	35	-30	-31	2	-19	6
Long Term												
Full Simulation Period[b]	25	44	-2	21	15	-8	33	-10	-48	-7	-8	82
Water Year Types[c]												
Wet (32%)	38	55	-25	20	7	-20	46	5	-78	-1	0	215
Above Normal (16%)	24	44	28	11	12	-39	71	-13	-58	-3	-17	110
Below Normal (13%)	41	49	3	6	6	-17	27	-22	-49	-4	-15	-14
Dry (24%)	20	48	0	39	21	21	14	-21	-18	-12	-3	-2
Critical (15%)	-8	9	6	18	31	15	-2	-12	-23	-16	-17	-9

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-4-5. CVP Net Generation, Monthly Net Generation

Second Basis of Comparison

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	285	162	524	558	567	562	404	561	600	638	480	291
20%	239	132	272	412	486	482	324	519	577	622	463	256
30%	195	103	114	288	296	288	297	481	531	602	438	227
40%	173	87	72	135	208	188	273	461	517	579	422	217
50%	162	81	43	78	114	155	255	444	488	547	405	205
60%	152	75	33	30	74	132	238	413	469	518	393	189
70%	138	58	24	18	53	108	214	384	454	493	369	179
80%	106	50	12	6	20	86	194	343	407	463	356	155
90%	92	32	-10	-8	-7	65	162	292	363	398	321	98
Long Term												
Full Simulation Period[b]	172	100	142	187	215	251	274	431	491	537	401	213
Water Year Types[c]												
Wet (32%)	197	138	336	414	382	455	351	517	533	552	423	289
Above Normal (16%)	169	99	109	211	351	302	263	456	517	611	436	224
Below Normal (13%)	189	87	40	73	176	161	262	444	527	577	438	212
Dry (24%)	158	80	34	35	46	98	219	397	487	530	395	176
Critical (15%)	126	67	28	30	28	90	223	261	346	395	294	98

Alternative 3

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	291	182	530	558	606	583	437	534	563	674	481	336
20%	235	125	266	480	511	511	316	479	531	638	465	266
30%	193	104	114	332	334	287	298	459	508	622	441	246
40%	173	91	74	160	183	189	268	439	473	596	424	216
50%	158	77	52	112	122	150	251	392	448	544	409	205
60%	147	66	39	72	84	122	229	374	433	528	387	195
70%	133	60	25	51	71	106	216	348	411	506	374	181
80%	113	52	12	36	56	92	200	316	387	469	362	155
90%	88	31	-6	18	41	71	174	260	340	397	326	104
Long Term												
Full Simulation Period[b]	172	102	150	224	241	250	275	400	457	549	406	217
Water Year Types[c]												
Wet (32%)	197	137	349	456	402	443	347	475	467	572	436	294
Above Normal (16%)	166	109	123	257	381	276	269	408	475	621	429	230
Below Normal (13%)	190	81	42	117	198	167	276	418	493	588	440	221
Dry (24%)	160	81	36	67	71	115	217	372	478	537	396	177
Critical (15%)	125	73	35	45	60	108	223	260	346	402	305	101

Alternative 3 minus Second Basis of Comparison

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	6	21	6	0	39	22	32	-27	-37	36	1	45
20%	-4	-7	-6	68	26	29	-7	-40	-45	16	2	10
30%	-2	2	0	45	38	-2	1	-22	-23	20	3	19
40%	-1	4	2	24	-25	1	-5	-22	-44	16	3	-1
50%	-4	-3	8	34	8	-5	-5	-52	-39	-4	5	1
60%	-5	-9	6	42	10	-10	-9	-39	-36	10	-6	6
70%	-5	1	1	33	19	-3	2	-36	-44	13	5	3
80%	6	2	-1	30	35	6	6	-26	-21	6	6	0
90%	-4	-1	5	26	48	6	12	-32	-23	-1	6	6
Long Term												
Full Simulation Period[b]	0	2	8	37	25	0	1	-30	-34	12	5	4
Water Year Types[c]												
Wet (32%)	0	0	13	43	20	-12	-4	-42	-66	21	13	5
Above Normal (16%)	-3	10	14	46	30	-26	6	-48	-43	10	-7	6
Below Normal (13%)	1	-6	3	44	22	5	15	-26	-34	11	2	9
Dry (24%)	2	1	2	32	25	17	-2	-24	-9	7	1	1
Critical (15%)	-1	6	7	15	32	19	0	-1	0	6	11	3

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-4-6. CVP Net Generation, Monthly Net Generation

Second Basis of Comparison

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	285	162	524	558	567	562	404	561	600	638	480	291
20%	239	132	272	412	486	482	324	519	577	622	463	256
30%	195	103	114	288	296	288	297	481	531	602	438	227
40%	173	87	72	135	208	188	273	461	517	579	422	217
50%	162	81	43	78	114	155	255	444	488	547	405	205
60%	152	75	33	30	74	132	238	413	469	518	393	189
70%	138	58	24	18	53	108	214	384	454	493	369	179
80%	106	50	12	6	20	86	194	343	407	463	356	155
90%	92	32	-10	-8	-7	65	162	292	363	398	321	98
Long Term												
Full Simulation Period[b]	172	100	142	187	215	251	274	431	491	537	401	213
Water Year Types[c]												
Wet (32%)	197	138	336	414	382	455	351	517	533	552	423	289
Above Normal (16%)	169	99	109	211	351	302	263	456	517	611	436	224
Below Normal (13%)	189	87	40	73	176	161	262	444	527	577	438	212
Dry (24%)	158	80	34	35	46	98	219	397	487	530	395	176
Critical (15%)	126	67	28	30	28	90	223	261	346	395	294	98

Alternative 5

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	323	255	511	557	567	559	451	559	528	654	468	527
20%	285	219	219	356	495	444	360	514	496	620	442	495
30%	233	186	113	253	363	270	330	469	475	589	426	365
40%	217	160	72	146	159	168	310	447	450	551	415	343
50%	194	116	48	104	107	148	294	426	437	531	402	243
60%	158	99	39	72	92	131	274	409	424	509	377	199
70%	134	71	28	52	67	105	254	389	404	485	366	177
80%	110	57	18	38	52	84	237	323	368	425	346	146
90%	84	31	-2	25	35	72	210	288	322	396	304	107
Long Term												
Full Simulation Period[b]	197	144	137	208	229	242	315	427	438	524	390	296
Water Year Types[c]												
Wet (32%)	233	191	307	433	388	431	397	527	454	553	419	506
Above Normal (16%)	190	142	136	221	364	264	335	449	458	608	416	333
Below Normal (13%)	230	135	42	79	175	144	305	428	471	569	420	198
Dry (24%)	179	130	32	75	67	119	250	383	461	508	388	173
Critical (15%)	123	76	34	47	56	102	237	257	314	358	273	97

Alternative 5 minus Second Basis of Comparison

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	38	94	-13	0	-1	-3	47	-2	-72	16	-12	236
20%	46	87	-54	-56	9	-38	37	-5	-81	-2	-21	240
30%	38	83	-1	-35	67	-18	33	-12	-56	-14	-12	137
40%	43	72	-1	11	-48	-20	37	-14	-67	-28	-7	125
50%	32	35	4	26	-6	-7	39	-18	-51	-16	-2	39
60%	6	24	6	42	18	-1	36	-4	-44	-9	-16	10
70%	-4	12	3	33	14	-3	41	5	-51	-8	-3	-2
80%	3	7	6	32	32	-2	44	-20	-39	-38	-10	-9
90%	-8	-1	8	33	43	7	48	-4	-41	-2	-17	8
Long Term												
Full Simulation Period[b]	25	44	-4	21	13	-9	41	-4	-53	-12	-12	83
Water Year Types[c]												
Wet (32%)	35	54	-29	20	7	-23	46	10	-79	1	-4	217
Above Normal (16%)	21	43	27	9	13	-38	72	-7	-59	-3	-20	108
Below Normal (13%)	41	48	2	6	-1	-17	44	-16	-57	-8	-18	-14
Dry (24%)	22	50	-2	40	22	21	31	-14	-26	-22	-7	-2
Critical (15%)	-3	10	6	17	28	12	14	-4	-32	-38	-20	-1

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

B.5. SWP Total Generating Capacity

Table B-5-1. SWP Total Capacity, Monthly Capacity

No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,222	1,091	1,204	1,178	1,332	1,441	1,351	1,367	1,325	1,331	1,293	1,306
20%	1,074	1,027	1,036	1,033	1,201	1,281	1,297	1,310	1,235	1,282	1,275	1,226
30%	1,037	966	990	940	1,097	1,238	1,263	1,278	1,205	1,270	1,244	1,176
40%	983	879	914	861	989	1,143	1,242	1,236	1,184	1,262	1,212	1,115
50%	887	657	871	797	927	999	1,153	1,178	1,163	1,244	1,174	1,064
60%	642	595	627	664	860	932	1,100	1,101	1,146	1,182	1,072	951
70%	499	425	477	521	747	847	930	1,018	1,090	1,065	908	678
80%	374	351	357	294	651	759	840	964	989	927	591	501
90%	247	223	289	210	399	682	727	803	779	541	393	324
Long Term												
Full Simulation Period[b]	764	700	754	734	907	1,016	1,082	1,119	1,089	1,089	995	911
Water Year Types[c]												
Wet (32%)	920	894	1,000	1,060	1,226	1,313	1,315	1,320	1,245	1,294	1,274	1,252
Above Normal (16%)	708	682	792	827	1,030	1,170	1,217	1,218	1,196	1,270	1,226	1,142
Below Normal (13%)	883	791	814	710	924	998	1,105	1,135	1,146	1,171	1,060	905
Dry (24%)	696	573	575	509	706	829	962	1,047	1,056	985	812	694
Critical (15%)	493	430	423	321	406	534	612	681	636	545	384	286

Alternative 1

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,302	1,326	1,345	1,457	1,480	1,513	1,420	1,432	1,380	1,380	1,341	1,305
20%	1,225	1,200	1,244	1,340	1,469	1,484	1,393	1,408	1,355	1,362	1,289	1,276
30%	1,166	1,148	1,151	1,248	1,420	1,468	1,373	1,386	1,340	1,345	1,243	1,226
40%	1,093	1,085	1,098	1,111	1,293	1,444	1,323	1,357	1,304	1,311	1,218	1,153
50%	1,035	957	998	1,025	1,209	1,373	1,312	1,327	1,294	1,284	1,186	1,097
60%	881	603	768	819	1,116	1,263	1,251	1,293	1,270	1,214	1,113	1,048
70%	621	510	547	512	911	1,044	1,127	1,165	1,186	1,139	1,057	976
80%	496	398	466	355	667	851	912	1,026	1,090	1,068	977	689
90%	299	302	338	233	432	720	809	928	954	624	458	410
Long Term												
Full Simulation Period[b]	878	832	878	891	1,086	1,202	1,181	1,224	1,200	1,164	1,071	1,001
Water Year Types[c]												
Wet (32%)	1,055	1,041	1,136	1,264	1,426	1,488	1,383	1,394	1,334	1,345	1,291	1,280
Above Normal (16%)	793	761	907	1,015	1,283	1,436	1,364	1,380	1,338	1,336	1,235	1,170
Below Normal (13%)	990	954	945	934	1,150	1,263	1,252	1,316	1,294	1,244	1,105	1,000
Dry (24%)	786	721	713	621	859	1,006	1,074	1,140	1,167	1,124	1,004	888
Critical (15%)	640	529	504	357	457	602	659	740	727	579	497	402

Alternative 1 minus No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	80	235	140	279	148	72	69	65	55	50	48	-1
20%	151	173	209	307	268	202	96	98	120	80	14	50
30%	130	182	161	308	323	230	110	108	135	74	-1	50
40%	110	206	184	251	304	301	81	121	120	49	6	38
50%	148	299	127	229	282	374	158	148	130	40	12	33
60%	239	8	141	155	256	331	151	192	124	31	41	98
70%	122	85	70	-9	164	197	198	147	96	74	149	298
80%	121	48	109	60	16	92	72	61	101	141	386	187
90%	52	79	48	23	33	38	82	125	175	83	64	86
Long Term												
Full Simulation Period[b]	114	131	124	157	179	186	99	105	111	75	76	90
Water Year Types[c]												
Wet (32%)	134	147	136	204	200	175	68	74	89	52	17	28
Above Normal (16%)	86	79	115	188	253	267	147	161	143	65	9	28
Below Normal (13%)	106	163	131	225	226	265	147	181	147	72	45	95
Dry (24%)	90	148	137	112	153	177	112	93	111	139	192	194
Critical (15%)	147	99	81	36	51	68	47	59	92	34	114	116

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Second Basis of Comparison and Alternative 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-5-2. SWP Total Capacity, Monthly Capacity

No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,222	1,091	1,204	1,178	1,332	1,441	1,351	1,367	1,325	1,331	1,293	1,306
20%	1,074	1,027	1,036	1,033	1,201	1,281	1,297	1,310	1,235	1,282	1,275	1,226
30%	1,037	966	990	940	1,097	1,238	1,263	1,278	1,205	1,270	1,244	1,176
40%	983	879	914	861	989	1,143	1,242	1,236	1,184	1,262	1,212	1,115
50%	887	657	871	797	927	999	1,153	1,178	1,163	1,244	1,174	1,064
60%	642	595	627	664	860	932	1,100	1,101	1,146	1,182	1,072	951
70%	499	425	477	521	747	847	930	1,018	1,090	1,065	908	678
80%	374	351	357	294	651	759	840	964	989	927	591	501
90%	247	223	289	210	399	682	727	803	779	541	393	324
Long Term												
Full Simulation Period[b]	764	700	754	734	907	1,016	1,082	1,119	1,089	1,089	995	911
Water Year Types[c]												
Wet (32%)	920	894	1,000	1,060	1,226	1,313	1,315	1,320	1,245	1,294	1,274	1,252
Above Normal (16%)	708	682	792	827	1,030	1,170	1,217	1,218	1,196	1,270	1,226	1,142
Below Normal (13%)	883	791	814	710	924	998	1,105	1,135	1,146	1,171	1,060	905
Dry (24%)	696	573	575	509	706	829	962	1,047	1,056	985	812	694
Critical (15%)	493	430	423	321	406	534	612	681	636	545	384	286

Alternative 3

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,319	1,361	1,353	1,424	1,478	1,483	1,401	1,435	1,387	1,388	1,348	1,320
20%	1,221	1,188	1,208	1,246	1,420	1,463	1,366	1,395	1,343	1,370	1,309	1,250
30%	1,150	1,128	1,125	1,098	1,297	1,407	1,340	1,365	1,330	1,345	1,242	1,204
40%	1,052	1,057	1,062	1,042	1,180	1,307	1,315	1,342	1,293	1,299	1,214	1,130
50%	988	821	1,003	966	1,096	1,266	1,293	1,301	1,256	1,272	1,162	1,083
60%	827	631	767	767	960	1,075	1,254	1,259	1,211	1,218	1,105	1,016
70%	555	514	545	579	806	919	1,078	1,131	1,163	1,118	1,028	914
80%	427	375	431	309	681	823	929	995	1,033	992	907	609
90%	244	241	345	264	412	676	727	813	793	550	422	352
Long Term												
Full Simulation Period[b]	850	810	859	846	1,022	1,127	1,158	1,201	1,168	1,143	1,041	955
Water Year Types[c]												
Wet (32%)	1,023	1,020	1,119	1,200	1,365	1,444	1,373	1,397	1,341	1,360	1,297	1,267
Above Normal (16%)	764	775	900	909	1,145	1,327	1,312	1,336	1,294	1,318	1,236	1,156
Below Normal (13%)	985	953	950	886	1,094	1,196	1,248	1,294	1,240	1,236	1,110	1,007
Dry (24%)	770	674	660	608	799	885	1,043	1,110	1,129	1,063	921	789
Critical (15%)	579	488	500	372	456	562	636	698	658	529	412	287

Alternative 3 minus No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	97	270	148	246	146	42	50	67	62	57	55	13
20%	147	161	173	213	219	182	69	85	108	88	34	24
30%	114	162	135	157	200	169	77	87	125	75	-2	28
40%	69	178	148	181	191	164	74	106	109	37	2	14
50%	101	164	133	169	169	267	139	123	93	28	-12	19
60%	185	37	140	103	100	143	154	159	65	36	34	65
70%	56	89	68	57	60	71	148	113	73	53	120	236
80%	52	24	73	14	31	64	88	31	44	65	317	108
90%	-4	19	55	54	13	-7	0	10	15	10	28	28
Long Term												
Full Simulation Period[b]	86	110	105	113	115	111	76	82	80	54	46	44
Water Year Types[c]												
Wet (32%)	102	127	119	140	139	132	58	77	96	66	23	15
Above Normal (16%)	56	94	108	81	115	157	95	118	99	48	10	14
Below Normal (13%)	102	162	136	177	170	198	143	159	94	65	50	101
Dry (24%)	75	101	85	99	93	56	81	63	73	79	109	95
Critical (15%)	86	58	77	51	49	29	24	17	23	-17	28	1

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-5-3. SWP Total Capacity, Monthly Capacity

No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,222	1,091	1,204	1,178	1,332	1,441	1,351	1,367	1,325	1,331	1,293	1,306
20%	1,074	1,027	1,036	1,033	1,201	1,281	1,297	1,310	1,235	1,282	1,275	1,226
30%	1,037	966	990	940	1,097	1,238	1,263	1,278	1,205	1,270	1,244	1,176
40%	983	879	914	861	989	1,143	1,242	1,236	1,184	1,262	1,212	1,115
50%	887	657	871	797	927	999	1,153	1,178	1,163	1,244	1,174	1,064
60%	642	595	627	664	860	932	1,100	1,101	1,146	1,182	1,072	951
70%	499	425	477	521	747	847	930	1,018	1,090	1,065	908	678
80%	374	351	357	294	651	759	840	964	989	927	591	501
90%	247	223	289	210	399	682	727	803	779	541	393	324
Long Term												
Full Simulation Period[b]	764	700	754	734	907	1,016	1,082	1,119	1,089	1,089	995	911
Water Year Types[c]												
Wet (32%)	920	894	1,000	1,060	1,226	1,313	1,315	1,320	1,245	1,294	1,274	1,252
Above Normal (16%)	708	682	792	827	1,030	1,170	1,217	1,218	1,196	1,270	1,226	1,142
Below Normal (13%)	883	791	814	710	924	998	1,105	1,135	1,146	1,171	1,060	905
Dry (24%)	696	573	575	509	706	829	962	1,047	1,056	985	812	694
Critical (15%)	493	430	423	321	406	534	612	681	636	545	384	286

Alternative 5

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,193	1,103	1,143	1,240	1,347	1,439	1,337	1,354	1,274	1,303	1,291	1,289
20%	1,082	1,023	1,032	1,039	1,215	1,303	1,285	1,298	1,235	1,285	1,271	1,225
30%	1,039	966	977	949	1,104	1,239	1,253	1,275	1,203	1,268	1,242	1,183
40%	991	880	932	860	990	1,106	1,237	1,239	1,181	1,262	1,215	1,117
50%	922	706	875	805	939	1,020	1,152	1,180	1,167	1,245	1,175	1,071
60%	639	594	677	656	836	937	1,106	1,081	1,139	1,174	1,068	958
70%	492	431	475	534	750	851	982	1,014	1,083	1,055	938	707
80%	370	349	357	293	645	760	830	963	984	919	591	492
90%	227	222	326	200	364	658	722	788	776	526	393	294
Long Term												
Full Simulation Period[b]	761	704	754	740	909	1,016	1,079	1,111	1,085	1,088	993	907
Water Year Types[c]												
Wet (32%)	909	888	999	1,081	1,229	1,310	1,303	1,316	1,241	1,294	1,273	1,249
Above Normal (16%)	692	666	783	816	1,028	1,170	1,211	1,214	1,194	1,272	1,227	1,139
Below Normal (13%)	882	821	798	717	932	1,005	1,108	1,121	1,143	1,180	1,074	912
Dry (24%)	699	589	585	514	708	829	966	1,031	1,046	982	808	697
Critical (15%)	504	434	432	317	401	533	615	684	636	535	369	257

Alternative 5 minus No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-29	12	-61	62	15	-2	-14	-13	-51	-27	-2	-17
20%	8	-4	-3	7	13	22	-12	-13	0	3	-5	-1
30%	3	0	-12	9	7	1	-9	-3	-2	-3	-2	7
40%	9	1	18	0	1	-37	-5	3	-2	0	3	1
50%	35	48	4	8	12	21	-1	1	4	1	1	7
60%	-3	0	50	-8	-24	5	6	-19	-7	-9	-3	7
70%	-7	6	-2	12	3	4	52	-4	-7	-10	30	29
80%	-4	-2	0	-2	-5	1	-10	-1	-4	-8	0	-9
90%	-21	0	37	-10	-35	-25	-5	-15	-3	-15	0	-30
Long Term												
Full Simulation Period[b]	-4	4	0	6	1	0	-3	-7	-4	0	-1	-4
Water Year Types[c]												
Wet (32%)	-11	-5	0	21	3	-3	-13	-4	-4	0	-1	-3
Above Normal (16%)	-16	-16	-9	-12	-2	1	-6	-5	-1	2	1	-4
Below Normal (13%)	-1	30	-17	7	8	8	3	-14	-4	9	14	7
Dry (24%)	4	15	9	5	2	0	4	-16	-10	-2	-3	3
Critical (15%)	11	4	9	-4	-5	-1	3	3	0	-10	-15	-28

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-5-4. SWP Total Capacity, Monthly Capacity

Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,302	1,326	1,345	1,457	1,480	1,513	1,420	1,432	1,380	1,380	1,341	1,305
20%	1,225	1,200	1,244	1,340	1,469	1,484	1,393	1,408	1,355	1,362	1,289	1,276
30%	1,166	1,148	1,151	1,248	1,420	1,468	1,373	1,386	1,340	1,345	1,243	1,226
40%	1,093	1,085	1,098	1,111	1,293	1,444	1,323	1,357	1,304	1,311	1,218	1,153
50%	1,035	957	998	1,025	1,209	1,373	1,312	1,327	1,294	1,284	1,186	1,097
60%	881	603	768	819	1,116	1,263	1,251	1,293	1,270	1,214	1,113	1,048
70%	621	510	547	512	911	1,044	1,127	1,165	1,186	1,139	1,057	976
80%	496	398	466	355	667	851	912	1,026	1,090	1,068	977	689
90%	299	302	338	233	432	720	809	928	954	624	458	410
Long Term												
Full Simulation Period[b]	878	832	878	891	1,086	1,202	1,181	1,224	1,200	1,164	1,071	1,001
Water Year Types[c]												
Wet (32%)	1,055	1,041	1,136	1,264	1,426	1,488	1,383	1,394	1,334	1,345	1,291	1,280
Above Normal (16%)	793	761	907	1,015	1,283	1,436	1,364	1,380	1,338	1,336	1,235	1,170
Below Normal (13%)	990	954	945	934	1,150	1,263	1,252	1,316	1,294	1,244	1,105	1,000
Dry (24%)	786	721	713	621	859	1,006	1,074	1,140	1,167	1,124	1,004	888
Critical (15%)	640	529	504	357	457	602	659	740	727	579	497	402

No Action Alternative

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,222	1,091	1,204	1,178	1,332	1,441	1,351	1,367	1,325	1,331	1,293	1,306
20%	1,074	1,027	1,036	1,033	1,201	1,281	1,297	1,310	1,235	1,282	1,275	1,226
30%	1,037	966	990	940	1,097	1,238	1,263	1,278	1,205	1,270	1,244	1,176
40%	983	879	914	861	989	1,143	1,242	1,236	1,184	1,262	1,212	1,115
50%	887	657	871	797	927	999	1,153	1,178	1,163	1,244	1,174	1,064
60%	642	595	627	664	860	932	1,100	1,101	1,146	1,182	1,072	951
70%	499	425	477	521	747	847	930	1,018	1,090	1,065	908	678
80%	374	351	357	294	651	759	840	964	989	927	591	501
90%	247	223	289	210	399	682	727	803	779	541	393	324
Long Term												
Full Simulation Period[b]	764	700	754	734	907	1,016	1,082	1,119	1,089	1,089	995	911
Water Year Types[c]												
Wet (32%)	920	894	1,000	1,060	1,226	1,313	1,315	1,320	1,245	1,294	1,274	1,252
Above Normal (16%)	708	682	792	827	1,030	1,170	1,217	1,218	1,196	1,270	1,226	1,142
Below Normal (13%)	883	791	814	710	924	998	1,105	1,135	1,146	1,171	1,060	905
Dry (24%)	696	573	575	509	706	829	962	1,047	1,056	985	812	694
Critical (15%)	493	430	423	321	406	534	612	681	636	545	384	286

No Action Alternative minus Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-80	-235	-140	-279	-148	-72	-69	-65	-55	-50	-48	1
20%	-151	-173	-209	-307	-268	-202	-96	-98	-120	-80	-14	-50
30%	-130	-182	-161	-308	-323	-230	-110	-108	-135	-74	1	-50
40%	-110	-206	-184	-251	-304	-301	-81	-121	-120	-49	-6	-38
50%	-148	-299	-127	-229	-282	-374	-158	-148	-130	-40	-12	-33
60%	-239	-8	-141	-155	-256	-331	-151	-192	-124	-31	-41	-98
70%	-122	-85	-70	9	-164	-197	-198	-147	-96	-74	-149	-298
80%	-121	-48	-109	-60	-16	-92	-72	-61	-101	-141	-386	-187
90%	-52	-79	-48	-23	-33	-38	-82	-125	-175	-83	-64	-86
Long Term												
Full Simulation Period[b]	-114	-131	-124	-157	-179	-186	-99	-105	-111	-75	-76	-90
Water Year Types[c]												
Wet (32%)	-134	-147	-136	-204	-200	-175	-68	-74	-89	-52	-17	-28
Above Normal (16%)	-86	-79	-115	-188	-253	-267	-147	-161	-143	-65	-9	-28
Below Normal (13%)	-106	-163	-131	-225	-226	-265	-147	-181	-147	-72	-45	-95
Dry (24%)	-90	-148	-137	-112	-153	-177	-112	-93	-111	-139	-192	-194
Critical (15%)	-147	-99	-81	-36	-51	-68	-47	-59	-92	-34	-114	-116

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-5-5. SWP Total Capacity, Monthly Capacity

Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,302	1,326	1,345	1,457	1,480	1,513	1,420	1,432	1,380	1,380	1,341	1,305
20%	1,225	1,200	1,244	1,340	1,469	1,484	1,393	1,408	1,355	1,362	1,289	1,276
30%	1,166	1,148	1,151	1,248	1,420	1,468	1,373	1,386	1,340	1,345	1,243	1,226
40%	1,093	1,085	1,098	1,111	1,293	1,444	1,323	1,357	1,304	1,311	1,218	1,153
50%	1,035	957	998	1,025	1,209	1,373	1,312	1,327	1,294	1,284	1,186	1,097
60%	881	603	768	819	1,116	1,263	1,251	1,293	1,270	1,214	1,113	1,048
70%	621	510	547	512	911	1,044	1,127	1,165	1,186	1,139	1,057	976
80%	496	398	466	355	667	851	912	1,026	1,090	1,068	977	689
90%	299	302	338	233	432	720	809	928	954	624	458	410
Long Term												
Full Simulation Period[b]	878	832	878	891	1,086	1,202	1,181	1,224	1,200	1,164	1,071	1,001
Water Year Types[c]												
Wet (32%)	1,055	1,041	1,136	1,264	1,426	1,488	1,383	1,394	1,334	1,345	1,291	1,280
Above Normal (16%)	793	761	907	1,015	1,283	1,436	1,364	1,380	1,338	1,336	1,235	1,170
Below Normal (13%)	990	954	945	934	1,150	1,263	1,252	1,316	1,294	1,244	1,105	1,000
Dry (24%)	786	721	713	621	859	1,006	1,074	1,140	1,167	1,124	1,004	888
Critical (15%)	640	529	504	357	457	602	659	740	727	579	497	402

Alternative 3

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,319	1,361	1,353	1,424	1,478	1,483	1,401	1,435	1,387	1,388	1,348	1,320
20%	1,221	1,188	1,208	1,246	1,420	1,463	1,366	1,395	1,343	1,370	1,309	1,250
30%	1,150	1,128	1,125	1,098	1,297	1,407	1,340	1,365	1,330	1,345	1,242	1,204
40%	1,052	1,057	1,062	1,042	1,180	1,307	1,315	1,342	1,293	1,299	1,214	1,130
50%	988	821	1,003	966	1,096	1,266	1,293	1,301	1,256	1,272	1,162	1,083
60%	827	631	767	767	960	1,075	1,254	1,259	1,211	1,218	1,105	1,016
70%	555	514	545	579	806	919	1,078	1,131	1,163	1,118	1,028	914
80%	427	375	431	309	681	823	929	995	1,033	992	907	609
90%	244	241	345	264	412	676	727	813	793	550	422	352
Long Term												
Full Simulation Period[b]	850	810	859	846	1,022	1,127	1,158	1,201	1,168	1,143	1,041	955
Water Year Types[c]												
Wet (32%)	1,023	1,020	1,119	1,200	1,365	1,444	1,373	1,397	1,341	1,360	1,297	1,267
Above Normal (16%)	764	775	900	909	1,145	1,327	1,312	1,336	1,294	1,318	1,236	1,156
Below Normal (13%)	985	953	950	886	1,094	1,196	1,248	1,294	1,240	1,236	1,110	1,007
Dry (24%)	770	674	660	608	799	885	1,043	1,110	1,129	1,063	921	789
Critical (15%)	579	488	500	372	456	562	636	698	658	529	412	287

Alternative 3 minus Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	17	35	8	-33	-2	-30	-19	2	7	8	8	15
20%	-4	-12	-36	-94	-49	-20	-27	-13	-12	8	20	-26
30%	-16	-20	-26	-150	-123	-61	-33	-21	-10	0	-1	-22
40%	-41	-28	-36	-70	-113	-137	-7	-15	-11	-12	-4	-23
50%	-46	-136	5	-60	-113	-107	-19	-25	-38	-12	-24	-14
60%	-53	28	-2	-52	-156	-187	3	-34	-59	4	-8	-33
70%	-66	4	-2	67	-104	-126	-49	-34	-23	-21	-29	-62
80%	-69	-23	-35	-46	15	-28	16	-31	-57	-76	-70	-80
90%	-56	-60	7	32	-20	-45	-82	-115	-160	-73	-36	-58
Long Term												
Full Simulation Period[b]	-28	-21	-19	-44	-64	-75	-23	-22	-31	-21	-30	-46
Water Year Types[c]												
Wet (32%)	-32	-20	-17	-64	-61	-43	-10	3	7	15	6	-13
Above Normal (16%)	-30	15	-7	-106	-138	-109	-52	-43	-44	-17	1	-14
Below Normal (13%)	-4	0	5	-48	-56	-67	-4	-22	-53	-7	5	6
Dry (24%)	-16	-47	-53	-12	-60	-121	-30	-30	-38	-61	-83	-98
Critical (15%)	-61	-41	-4	15	-1	-39	-23	-42	-69	-50	-86	-115

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-5-6. SWP Total Capacity, Monthly Capacity

Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,302	1,326	1,345	1,457	1,480	1,513	1,420	1,432	1,380	1,380	1,341	1,305
20%	1,225	1,200	1,244	1,340	1,469	1,484	1,393	1,408	1,355	1,362	1,289	1,276
30%	1,166	1,148	1,151	1,248	1,420	1,468	1,373	1,386	1,340	1,345	1,243	1,226
40%	1,093	1,085	1,098	1,111	1,293	1,444	1,323	1,357	1,304	1,311	1,218	1,153
50%	1,035	957	998	1,025	1,209	1,373	1,312	1,327	1,294	1,284	1,186	1,097
60%	881	603	768	819	1,116	1,263	1,251	1,293	1,270	1,214	1,113	1,048
70%	621	510	547	512	911	1,044	1,127	1,165	1,186	1,139	1,057	976
80%	496	398	466	355	667	851	912	1,026	1,090	1,068	977	689
90%	299	302	338	233	432	720	809	928	954	624	458	410
Long Term												
Full Simulation Period[b]	878	832	878	891	1,086	1,202	1,181	1,224	1,200	1,164	1,071	1,001
Water Year Types[c]												
Wet (32%)	1,055	1,041	1,136	1,264	1,426	1,488	1,383	1,394	1,334	1,345	1,291	1,280
Above Normal (16%)	793	761	907	1,015	1,283	1,436	1,364	1,380	1,338	1,336	1,235	1,170
Below Normal (13%)	990	954	945	934	1,150	1,263	1,252	1,316	1,294	1,244	1,105	1,000
Dry (24%)	786	721	713	621	859	1,006	1,074	1,140	1,167	1,124	1,004	888
Critical (15%)	640	529	504	357	457	602	659	740	727	579	497	402

Alternative 5

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,193	1,103	1,143	1,240	1,347	1,439	1,337	1,354	1,274	1,303	1,291	1,289
20%	1,082	1,023	1,032	1,039	1,215	1,303	1,285	1,298	1,235	1,285	1,271	1,225
30%	1,039	966	977	949	1,104	1,239	1,253	1,275	1,203	1,268	1,242	1,183
40%	991	880	932	860	990	1,106	1,237	1,239	1,181	1,262	1,215	1,117
50%	922	706	875	805	939	1,020	1,152	1,180	1,167	1,245	1,175	1,071
60%	639	594	677	656	836	937	1,106	1,081	1,139	1,174	1,068	958
70%	492	431	475	534	750	851	982	1,014	1,083	1,055	938	707
80%	370	349	357	293	645	760	830	963	984	919	591	492
90%	227	222	326	200	364	658	722	788	776	526	393	294
Long Term												
Full Simulation Period[b]	761	704	754	740	909	1,016	1,079	1,111	1,085	1,088	993	907
Water Year Types[c]												
Wet (32%)	909	888	999	1,081	1,229	1,310	1,303	1,316	1,241	1,294	1,273	1,249
Above Normal (16%)	692	666	783	816	1,028	1,170	1,211	1,214	1,194	1,272	1,227	1,139
Below Normal (13%)	882	821	798	717	932	1,005	1,108	1,121	1,143	1,180	1,074	912
Dry (24%)	699	589	585	514	708	829	966	1,031	1,046	982	808	697
Critical (15%)	504	434	432	317	401	533	615	684	636	535	369	257

Alternative 5 minus Second Basis of Comparison

	Monthly Capacity (MW)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-109	-223	-201	-217	-134	-74	-84	-78	-105	-77	-49	-15
20%	-143	-177	-212	-301	-254	-181	-108	-111	-120	-77	-19	-51
30%	-127	-182	-174	-299	-316	-229	-119	-111	-138	-77	-1	-43
40%	-101	-205	-165	-251	-304	-338	-85	-118	-122	-49	-3	-36
50%	-113	-251	-123	-221	-270	-354	-159	-147	-126	-38	-11	-26
60%	-241	-9	-91	-164	-280	-325	-145	-212	-131	-40	-44	-91
70%	-129	-79	-72	22	-161	-194	-146	-151	-103	-83	-119	-269
80%	-125	-50	-108	-62	-21	-91	-82	-63	-106	-149	-386	-197
90%	-72	-79	-11	-33	-68	-63	-87	-139	-178	-98	-64	-116
Long Term												
Full Simulation Period[b]	-118	-127	-125	-151	-177	-186	-102	-112	-115	-76	-78	-94
Water Year Types[c]												
Wet (32%)	-146	-152	-137	-183	-197	-178	-81	-78	-92	-51	-18	-31
Above Normal (16%)	-102	-95	-124	-199	-255	-266	-153	-166	-144	-63	-8	-31
Below Normal (13%)	-107	-133	-148	-217	-218	-258	-144	-195	-151	-63	-31	-88
Dry (24%)	-87	-132	-128	-107	-151	-177	-107	-109	-121	-142	-195	-191
Critical (15%)	-136	-95	-73	-40	-56	-69	-44	-56	-91	-44	-128	-144

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

B.6. SWP Total Energy Generation

Table B-6-1. SWP Total Generation, Monthly Generation

No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	501	396	434	660	675	759	602	704	535	712	619	662
20%	429	355	376	261	551	569	419	532	483	691	605	621
30%	408	328	300	190	238	425	361	443	470	677	581	593
40%	388	311	282	171	169	299	337	411	439	662	553	534
50%	340	285	270	139	131	161	315	380	413	645	518	486
60%	302	255	246	94	110	114	247	329	398	579	481	374
70%	228	199	200	59	72	88	185	272	382	497	374	304
80%	197	158	156	44	55	63	126	247	344	407	295	256
90%	124	85	87	36	45	47	99	207	277	231	195	170
Long Term												
Full Simulation Period[b]	321	272	275	208	245	298	313	408	414	556	458	438
Water Year Types[c]												
Wet (32%)	378	342	347	414	506	592	521	622	487	647	551	630
Above Normal (16%)	290	261	276	172	217	370	331	410	443	697	606	556
Below Normal (13%)	383	295	294	141	138	156	260	343	417	633	516	388
Dry (24%)	294	223	226	96	92	81	183	300	402	483	366	313
Critical (15%)	220	191	182	52	60	72	108	184	243	256	199	145

Alternative 1

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	483	422	475	810	779	852	601	673	636	740	638	505
20%	467	401	396	393	640	698	442	603	591	719	590	481
30%	450	379	355	319	468	596	379	542	557	680	554	470
40%	433	356	338	237	298	492	351	453	533	643	510	434
50%	401	338	303	208	239	330	325	410	496	591	488	402
60%	372	315	285	191	201	281	298	363	458	538	452	387
70%	307	227	261	95	168	165	235	324	421	477	428	362
80%	262	193	197	51	95	125	137	267	384	432	401	328
90%	157	155	151	39	39	51	117	223	356	368	299	244
Long Term												
Full Simulation Period[b]	360	311	325	285	336	409	335	441	489	565	479	395
Water Year Types[c]												
Wet (32%)	405	371	422	542	611	716	517	608	524	638	524	442
Above Normal (16%)	323	265	309	250	370	572	384	486	566	712	588	479
Below Normal (13%)	408	340	305	227	272	291	313	460	558	629	509	418
Dry (24%)	346	291	284	127	147	164	210	327	466	498	456	377
Critical (15%)	281	235	222	80	79	85	117	207	304	300	275	210

Alternative 1 minus No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-18	26	40	150	104	93	-1	-31	101	27	18	-158
20%	38	46	20	132	89	130	23	72	108	28	-15	-140
30%	43	51	55	129	230	171	18	99	87	3	-27	-123
40%	45	46	55	66	129	194	14	42	94	-19	-43	-100
50%	61	53	33	69	108	169	10	30	83	-55	-30	-84
60%	71	60	38	97	91	167	50	34	60	-41	-29	13
70%	79	28	62	36	96	77	49	52	39	-20	54	58
80%	65	35	41	6	40	63	11	20	40	25	106	72
90%	33	70	64	4	-6	4	18	16	78	137	104	74
Long Term												
Full Simulation Period[b]	39	39	50	76	92	112	22	33	75	9	21	-43
Water Year Types[c]												
Wet (32%)	27	29	74	129	105	124	-4	-14	37	-9	-27	-189
Above Normal (16%)	33	4	33	78	152	201	53	76	123	15	-18	-77
Below Normal (13%)	25	45	11	86	134	135	53	116	141	-4	-7	30
Dry (24%)	52	69	58	31	55	83	27	27	64	15	90	63
Critical (15%)	61	44	40	28	19	13	8	23	60	44	76	66

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Second Basis of Comparison and Alternative 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-6-2. SWP Total Generation, Monthly Generation

No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	501	396	434	660	675	759	602	704	535	712	619	662
20%	429	355	376	261	551	569	419	532	483	691	605	621
30%	408	328	300	190	238	425	361	443	470	677	581	593
40%	388	311	282	171	169	299	337	411	439	662	553	534
50%	340	285	270	139	131	161	315	380	413	645	518	486
60%	302	255	246	94	110	114	247	329	398	579	481	374
70%	228	199	200	59	72	88	185	272	382	497	374	304
80%	197	158	156	44	55	63	126	247	344	407	295	256
90%	124	85	87	36	45	47	99	207	277	231	195	170
Long Term												
Full Simulation Period[b]	321	272	275	208	245	298	313	408	414	556	458	438
Water Year Types[c]												
Wet (32%)	378	342	347	414	506	592	521	622	487	647	551	630
Above Normal (16%)	290	261	276	172	217	370	331	410	443	697	606	556
Below Normal (13%)	383	295	294	141	138	156	260	343	417	633	516	388
Dry (24%)	294	223	226	96	92	81	183	300	402	483	366	313
Critical (15%)	220	191	182	52	60	72	108	184	243	256	199	145

Alternative 3

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	484	425	486	779	741	795	601	682	597	727	623	493
20%	461	400	385	335	617	641	425	578	567	714	592	474
30%	434	382	356	238	357	550	395	499	534	698	570	448
40%	401	354	317	207	268	435	343	454	513	678	539	408
50%	384	333	295	189	187	293	328	419	496	656	509	391
60%	346	301	280	166	156	196	313	382	475	615	470	375
70%	275	261	257	79	120	114	242	346	448	520	416	344
80%	209	187	189	44	69	88	131	247	381	424	363	286
90%	129	91	131	35	46	49	111	216	295	264	217	176
Long Term												
Full Simulation Period[b]	339	305	313	258	303	367	333	437	476	571	468	368
Water Year Types[c]												
Wet (32%)	398	375	421	507	583	682	514	616	543	659	534	428
Above Normal (16%)	305	284	310	191	284	497	363	463	532	717	596	467
Below Normal (13%)	397	336	306	198	244	263	330	451	503	664	552	383
Dry (24%)	312	266	246	121	119	99	212	332	460	505	411	348
Critical (15%)	244	213	203	76	79	85	114	184	271	251	205	148

Alternative 3 minus No Action Alternative

	Monthly Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-17	29	52	119	66	36	-1	-21	62	15	4	-169
20%	32	45	9	74	65	72	5	46	84	22	-13	-148
30%	26	54	56	48	120	126	34	56	64	21	-11	-145
40%	13	44	34	36	99	136	7	42	74	16	-14	-126
50%	43	47	25	51	56	131	13	39	83	11	-9	-95
60%	44	46	34	72	46	82	66	53	77	36	-11	1
70%	47	62	57	20	47	27	56	74	66	23	42	40
80%	12	29	33	-1	14	25	5	1	37	17	67	30
90%	5	6	44	-1	1	2	12	9	17	33	21	6
Long Term												
Full Simulation Period[b]	18	34	38	50	58	69	20	29	62	16	10	-70
Water Year Types[c]												
Wet (32%)	19	33	73	93	76	89	-7	-6	57	12	-17	-203
Above Normal (16%)	15	23	35	20	67	127	32	53	90	20	-10	-89
Below Normal (13%)	15	41	12	57	106	106	70	108	86	31	36	-5
Dry (24%)	18	43	20	25	27	18	29	31	58	22	45	35
Critical (15%)	24	22	21	24	19	12	5	0	28	-5	6	3

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-6-3. SWP Total Generation, Monthly Generation

No Action Alternative

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	501	396	434	660	675	759	602	704	535	712	619	662
20%	429	355	376	261	551	569	419	532	483	691	605	621
30%	408	328	300	190	238	425	361	443	470	677	581	593
40%	388	311	282	171	169	299	337	411	439	662	553	534
50%	340	285	270	139	131	161	315	380	413	645	518	486
60%	302	255	246	94	110	114	247	329	398	579	481	374
70%	228	199	200	59	72	88	185	272	382	497	374	304
80%	197	158	156	44	55	63	126	247	344	407	295	256
90%	124	85	87	36	45	47	99	207	277	231	195	170
Long Term												
Full Simulation Period[b]	321	272	275	208	245	298	313	408	414	556	458	438
Water Year Types[c]												
Wet (32%)	378	342	347	414	506	592	521	622	487	647	551	630
Above Normal (16%)	290	261	276	172	217	370	331	410	443	697	606	556
Below Normal (13%)	383	295	294	141	138	156	260	343	417	633	516	388
Dry (24%)	294	223	226	96	92	81	183	300	402	483	366	313
Critical (15%)	220	191	182	52	60	72	108	184	243	256	199	145

Alternative 5

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	475	413	406	652	685	727	587	692	517	714	622	651
20%	435	357	365	284	538	573	414	532	484	699	607	622
30%	410	329	300	190	221	448	362	434	464	681	589	590
40%	391	314	278	177	184	301	333	406	435	663	561	535
50%	331	291	267	130	153	168	311	380	412	651	535	491
60%	303	252	254	87	93	116	256	308	400	589	468	391
70%	222	205	218	58	72	89	192	266	376	486	380	302
80%	190	171	163	44	54	62	132	244	353	411	307	254
90%	120	90	96	36	44	47	103	202	259	234	197	159
Long Term												
Full Simulation Period[b]	317	275	274	211	244	297	312	401	409	557	462	436
Water Year Types[c]												
Wet (32%)	372	339	344	426	507	590	510	618	479	645	554	624
Above Normal (16%)	280	264	276	162	215	368	326	404	440	698	607	557
Below Normal (13%)	369	316	281	142	141	160	265	328	412	639	534	393
Dry (24%)	298	227	227	96	93	81	194	288	398	490	370	313
Critical (15%)	219	192	189	51	54	73	108	183	239	249	196	140

Alternative 5 minus No Action Alternative

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-26	17	-28	-8	11	-32	-15	-11	-18	2	3	-12
20%	6	1	-11	23	-13	4	-5	0	0	8	2	1
30%	2	1	0	0	-17	23	1	-9	-6	4	8	-4
40%	3	4	-4	6	14	2	-4	-5	-5	1	8	1
50%	-9	5	-3	-9	22	6	-4	0	-2	5	18	5
60%	1	-3	7	-7	-17	2	9	-21	2	10	-13	17
70%	-6	6	18	-1	-1	1	6	-6	-5	-11	6	-3
80%	-7	13	7	0	-1	-1	6	-3	9	4	11	-2
90%	-4	6	9	0	-2	0	3	-5	-18	4	1	-11
Long Term												
Full Simulation Period[b]	-4	4	-2	3	0	-1	-1	-8	-5	1	4	-2
Water Year Types[c]												
Wet (32%)	-6	-2	-3	13	1	-2	-11	-5	-8	-1	3	-7
Above Normal (16%)	-9	3	0	-9	-2	-3	-5	-6	-2	1	1	1
Below Normal (13%)	-14	21	-13	1	2	3	5	-16	-5	6	18	5
Dry (24%)	4	5	1	1	1	0	10	-12	-4	7	3	0
Critical (15%)	0	1	8	-1	-6	1	-1	-1	-5	-7	-3	-5

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-6-4. SWP Total Generation, Monthly Generation

Second Basis of Comparison

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	483	422	475	810	779	852	601	673	636	740	638	505
20%	467	401	396	393	640	698	442	603	591	719	590	481
30%	450	379	355	319	468	596	379	542	557	680	554	470
40%	433	356	338	237	298	492	351	453	533	643	510	434
50%	401	338	303	208	239	330	325	410	496	591	488	402
60%	372	315	285	191	201	281	298	363	458	538	452	387
70%	307	227	261	95	168	165	235	324	421	477	428	362
80%	262	193	197	51	95	125	137	267	384	432	401	328
90%	157	155	151	39	39	51	117	223	356	368	299	244
Long Term												
Full Simulation Period[b]	360	311	325	285	336	409	335	441	489	565	479	395
Water Year Types[c]												
Wet (32%)	405	371	422	542	611	716	517	608	524	638	524	442
Above Normal (16%)	323	265	309	250	370	572	384	486	566	712	588	479
Below Normal (13%)	408	340	305	227	272	291	313	460	558	629	509	418
Dry (24%)	346	291	284	127	147	164	210	327	466	498	456	377
Critical (15%)	281	235	222	80	79	85	117	207	304	300	275	210

No Action Alternative

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	501	396	434	660	675	759	602	704	535	712	619	662
20%	429	355	376	261	551	569	419	532	483	691	605	621
30%	408	328	300	190	238	425	361	443	470	677	581	593
40%	388	311	282	171	169	299	337	411	439	662	553	534
50%	340	285	270	139	131	161	315	380	413	645	518	486
60%	302	255	246	94	110	114	247	329	398	579	481	374
70%	228	199	200	59	72	88	185	272	382	497	374	304
80%	197	158	156	44	55	63	126	247	344	407	295	256
90%	124	85	87	36	45	47	99	207	277	231	195	170
Long Term												
Full Simulation Period[b]	321	272	275	208	245	298	313	408	414	556	458	438
Water Year Types[c]												
Wet (32%)	378	342	347	414	506	592	521	622	487	647	551	630
Above Normal (16%)	290	261	276	172	217	370	331	410	443	697	606	556
Below Normal (13%)	383	295	294	141	138	156	260	343	417	633	516	388
Dry (24%)	294	223	226	96	92	81	183	300	402	483	366	313
Critical (15%)	220	191	182	52	60	72	108	184	243	256	199	145

No Action Alternative minus Second Basis of Comparison

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	18	-26	-40	-150	-104	-93	1	31	-101	-27	-18	158
20%	-38	-46	-20	-132	-89	-130	-23	-72	-108	-28	15	140
30%	-43	-51	-55	-129	-230	-171	-18	-99	-87	-3	27	123
40%	-45	-46	-55	-66	-129	-194	-14	-42	-94	19	43	100
50%	-61	-53	-33	-69	-108	-169	-10	-30	-83	55	30	84
60%	-71	-60	-38	-97	-91	-167	-50	-34	-60	41	29	-13
70%	-79	-28	-62	-36	-96	-77	-49	-52	-39	20	-54	-58
80%	-65	-35	-41	-6	-40	-63	-11	-20	-40	-25	-106	-72
90%	-33	-70	-64	-4	6	-4	-18	-16	-78	-137	-104	-74
Long Term												
Full Simulation Period[b]	-39	-39	-50	-76	-92	-112	-22	-33	-75	-9	-21	43
Water Year Types[c]												
Wet (32%)	-27	-29	-74	-129	-105	-124	4	14	-37	9	27	189
Above Normal (16%)	-33	-4	-33	-78	-152	-201	-53	-76	-123	-15	18	77
Below Normal (13%)	-25	-45	-11	-86	-134	-135	-53	-116	-141	4	7	-30
Dry (24%)	-52	-69	-58	-31	-55	-83	-27	-27	-64	-15	-90	-63
Critical (15%)	-61	-44	-40	-28	-19	-13	-8	-23	-60	-44	-76	-66

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-6-5. SWP Total Generation, Monthly Generation

Second Basis of Comparison

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	483	422	475	810	779	852	601	673	636	740	638	505
20%	467	401	396	393	640	698	442	603	591	719	590	481
30%	450	379	355	319	468	596	379	542	557	680	554	470
40%	433	356	338	237	298	492	351	453	533	643	510	434
50%	401	338	303	208	239	330	325	410	496	591	488	402
60%	372	315	285	191	201	281	298	363	458	538	452	387
70%	307	227	261	95	168	165	235	324	421	477	428	362
80%	262	193	197	51	95	125	137	267	384	432	401	328
90%	157	155	151	39	39	51	117	223	356	368	299	244
Long Term												
Full Simulation Period[b]	360	311	325	285	336	409	335	441	489	565	479	395
Water Year Types[c]												
Wet (32%)	405	371	422	542	611	716	517	608	524	638	524	442
Above Normal (16%)	323	265	309	250	370	572	384	486	566	712	588	479
Below Normal (13%)	408	340	305	227	272	291	313	460	558	629	509	418
Dry (24%)	346	291	284	127	147	164	210	327	466	498	456	377
Critical (15%)	281	235	222	80	79	85	117	207	304	300	275	210

Alternative 3

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	484	425	486	779	741	795	601	682	597	727	623	493
20%	461	400	385	335	617	641	425	578	567	714	592	474
30%	434	382	356	238	357	550	395	499	534	698	570	448
40%	401	354	317	207	268	435	343	454	513	678	539	408
50%	384	333	295	189	187	293	328	419	496	656	509	391
60%	346	301	280	166	156	196	313	382	475	615	470	375
70%	275	261	257	79	120	114	242	346	448	520	416	344
80%	209	187	189	44	69	88	131	247	381	424	363	286
90%	129	91	131	35	46	49	111	216	295	264	217	176
Long Term												
Full Simulation Period[b]	339	305	313	258	303	367	333	437	476	571	468	368
Water Year Types[c]												
Wet (32%)	398	375	421	507	583	682	514	616	543	659	534	428
Above Normal (16%)	305	284	310	191	284	497	363	463	532	717	596	467
Below Normal (13%)	397	336	306	198	244	263	330	451	503	664	552	383
Dry (24%)	312	266	246	121	119	99	212	332	460	505	411	348
Critical (15%)	244	213	203	76	79	85	114	184	271	251	205	148

Alternative 3 minus Second Basis of Comparison

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	2	3	12	-31	-38	-57	0	10	-40	-13	-15	-12
20%	-6	-2	-11	-59	-24	-58	-18	-25	-24	-6	2	-7
30%	-16	3	0	-82	-110	-46	16	-43	-22	19	16	-22
40%	-32	-2	-21	-29	-30	-58	-7	1	-20	35	28	-26
50%	-18	-6	-8	-18	-52	-37	3	8	0	66	21	-12
60%	-26	-14	-4	-25	-45	-85	16	19	16	77	18	-12
70%	-32	35	-4	-16	-49	-50	7	22	27	43	-13	-18
80%	-52	-7	-8	-7	-26	-38	-6	-20	-2	-8	-39	-42
90%	-28	-64	-20	-4	7	-2	-6	-7	-61	-104	-83	-68
Long Term												
Full Simulation Period[b]	-20	-5	-12	-26	-33	-43	-2	-4	-12	7	-11	-27
Water Year Types[c]												
Wet (32%)	-7	4	-1	-35	-28	-35	-3	8	20	21	10	-14
Above Normal (16%)	-18	19	2	-59	-85	-75	-21	-23	-33	5	8	-12
Below Normal (13%)	-11	-4	1	-29	-28	-29	17	-8	-54	35	43	-35
Dry (24%)	-34	-26	-38	-5	-29	-66	2	5	-6	7	-45	-29
Critical (15%)	-37	-21	-20	-4	0	-1	-3	-23	-32	-49	-70	-63

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-6-6. SWP Total Generation, Monthly Generation

Second Basis of Comparison

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	483	422	475	810	779	852	601	673	636	740	638	505
20%	467	401	396	393	640	698	442	603	591	719	590	481
30%	450	379	355	319	468	596	379	542	557	680	554	470
40%	433	356	338	237	298	492	351	453	533	643	510	434
50%	401	338	303	208	239	330	325	410	496	591	488	402
60%	372	315	285	191	201	281	298	363	458	538	452	387
70%	307	227	261	95	168	165	235	324	421	477	428	362
80%	262	193	197	51	95	125	137	267	384	432	401	328
90%	157	155	151	39	39	51	117	223	356	368	299	244
Long Term												
Full Simulation Period[b]	360	311	325	285	336	409	335	441	489	565	479	395
Water Year Types[c]												
Wet (32%)	405	371	422	542	611	716	517	608	524	638	524	442
Above Normal (16%)	323	265	309	250	370	572	384	486	566	712	588	479
Below Normal (13%)	408	340	305	227	272	291	313	460	558	629	509	418
Dry (24%)	346	291	284	127	147	164	210	327	466	498	456	377
Critical (15%)	281	235	222	80	79	85	117	207	304	300	275	210

Alternative 5

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	475	413	406	652	685	727	587	692	517	714	622	651
20%	435	357	365	284	538	573	414	532	484	699	607	622
30%	410	329	300	190	221	448	362	434	464	681	589	590
40%	391	314	278	177	184	301	333	406	435	663	561	535
50%	331	291	267	130	153	168	311	380	412	651	535	491
60%	303	252	254	87	93	116	256	308	400	589	468	391
70%	222	205	218	58	72	89	192	266	376	486	380	302
80%	190	171	163	44	54	62	132	244	353	411	307	254
90%	120	90	96	36	44	47	103	202	259	234	197	159
Long Term												
Full Simulation Period[b]	317	275	274	211	244	297	312	401	409	557	462	436
Water Year Types[c]												
Wet (32%)	372	339	344	426	507	590	510	618	479	645	554	624
Above Normal (16%)	280	264	276	162	215	368	326	404	440	698	607	557
Below Normal (13%)	369	316	281	142	141	160	265	328	412	639	534	393
Dry (24%)	298	227	227	96	93	81	194	288	398	490	370	313
Critical (15%)	219	192	189	51	54	73	108	183	239	249	196	140

Alternative 5 minus Second Basis of Comparison

Statistic	Monthly Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-8	-9	-68	-158	-94	-125	-14	19	-120	-25	-16	146
20%	-32	-45	-31	-110	-102	-126	-28	-71	-108	-20	17	141
30%	-40	-50	-55	-129	-247	-148	-17	-108	-92	1	35	119
40%	-42	-42	-59	-60	-114	-191	-18	-47	-99	20	51	101
50%	-70	-48	-35	-78	-86	-162	-14	-30	-85	60	47	88
60%	-69	-63	-31	-104	-108	-166	-41	-55	-58	51	16	4
70%	-85	-22	-44	-37	-97	-76	-43	-58	-45	9	-49	-60
80%	-72	-22	-33	-6	-41	-63	-5	-23	-30	-21	-95	-74
90%	-37	-65	-55	-3	5	-4	-14	-21	-97	-133	-102	-85
Long Term												
Full Simulation Period[b]	-43	-35	-52	-74	-92	-112	-23	-41	-80	-8	-17	41
Water Year Types[c]												
Wet (32%)	-33	-31	-77	-116	-104	-126	-7	10	-45	8	30	182
Above Normal (16%)	-42	-1	-33	-87	-154	-204	-58	-82	-125	-14	19	78
Below Normal (13%)	-39	-24	-24	-85	-132	-132	-48	-132	-146	11	26	-25
Dry (24%)	-48	-64	-57	-30	-55	-83	-16	-39	-68	-8	-86	-63
Critical (15%)	-62	-43	-33	-29	-25	-12	-9	-24	-65	-51	-79	-70

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

B.7. SWP Total Energy Use

Table B-7-1. SWP Total Energy Use, Monthly Energy Use

No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,039	953	1,062	785	833	1,001	844	1,019	986	1,124	1,133	1,126
20%	968	879	934	516	639	831	746	883	856	1,062	1,112	1,099
30%	917	836	869	453	501	741	699	814	798	1,017	1,078	1,067
40%	871	769	806	365	405	499	636	769	763	991	1,054	1,003
50%	812	716	759	312	321	304	516	681	736	965	1,038	971
60%	744	587	680	165	290	232	413	495	697	926	991	943
70%	595	497	550	139	166	199	223	416	579	803	804	780
80%	497	443	413	128	129	160	151	403	549	681	641	669
90%	298	270	309	102	82	123	107	285	384	400	402	379
Long Term												
Full Simulation Period[b]	738	657	705	359	397	474	486	644	701	874	900	868
Water Year Types[c]												
Wet (32%)	858	796	802	552	638	810	737	877	866	1,036	1,081	1,048
Above Normal (16%)	693	660	718	366	432	568	595	735	776	993	1,073	1,031
Below Normal (13%)	835	715	806	333	364	398	465	607	704	962	993	943
Dry (24%)	676	556	628	239	224	223	320	507	619	785	765	775
Critical (15%)	541	471	515	156	155	133	121	300	394	463	461	384

Alternative 1

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,148	1,119	1,145	1,102	1,006	1,103	990	1,106	1,055	1,146	1,146	1,140
20%	1,133	1,091	1,078	1,036	976	1,101	956	1,082	1,008	1,131	1,130	1,135
30%	1,101	1,061	1,052	885	954	1,091	908	1,048	981	1,122	1,120	1,124
40%	1,030	999	971	696	921	1,041	848	977	926	1,049	1,029	1,064
50%	983	947	906	628	757	1,012	786	908	863	988	1,011	1,030
60%	890	867	868	474	619	833	715	838	794	945	976	985
70%	740	636	759	320	498	623	418	530	672	861	950	948
80%	599	536	632	279	318	318	239	423	582	765	875	845
90%	488	486	491	181	233	195	147	396	565	704	742	712
Long Term												
Full Simulation Period[b]	871	840	864	625	678	781	652	801	820	951	975	966
Water Year Types[c]												
Wet (32%)	987	969	966	901	936	1,078	902	1,006	946	1,064	1,075	1,079
Above Normal (16%)	793	746	867	710	824	1,045	910	1,039	973	1,094	1,102	1,103
Below Normal (13%)	981	941	914	698	681	824	700	888	893	1,032	1,034	1,035
Dry (24%)	827	807	815	400	489	540	437	590	702	875	932	934
Critical (15%)	679	627	676	248	271	216	145	371	510	600	640	564

Alternative 1 minus No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	108	167	83	317	173	102	146	87	70	22	13	14
20%	165	211	144	520	337	270	210	199	152	69	18	36
30%	183	225	183	432	453	350	209	234	183	105	41	57
40%	158	229	165	331	516	542	212	208	163	57	-25	60
50%	170	231	147	316	436	708	270	227	127	23	-27	59
60%	147	280	188	309	330	601	302	343	97	19	-15	42
70%	145	138	209	181	331	424	194	114	92	58	146	168
80%	102	93	219	151	189	158	88	20	33	84	234	176
90%	190	215	183	79	150	72	40	111	181	304	340	332
Long Term												
Full Simulation Period[b]	134	183	159	267	281	307	166	157	119	76	75	99
Water Year Types[c]												
Wet (32%)	130	172	164	348	298	268	165	129	79	28	-5	31
Above Normal (16%)	100	86	149	344	393	477	315	304	197	102	29	71
Below Normal (13%)	145	226	108	365	317	426	234	282	188	69	41	92
Dry (24%)	151	251	187	161	265	317	117	83	83	90	166	159
Critical (15%)	139	157	160	92	116	83	24	70	116	137	179	180

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Second Basis of Comparison and Alternative 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-7-2. SWP Total Energy Use, Monthly Energy Use

No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,039	953	1,062	785	833	1,001	844	1,019	986	1,124	1,133	1,126
20%	968	879	934	516	639	831	746	883	856	1,062	1,112	1,099
30%	917	836	869	453	501	741	699	814	798	1,017	1,078	1,067
40%	871	769	806	365	405	499	636	769	763	991	1,054	1,003
50%	812	716	759	312	321	304	516	681	736	965	1,038	971
60%	744	587	680	165	290	232	413	495	697	926	991	943
70%	595	497	550	139	166	199	223	416	579	803	804	780
80%	497	443	413	128	129	160	151	403	549	681	641	669
90%	298	270	309	102	82	123	107	285	384	400	402	379
Long Term												
Full Simulation Period[b]	738	657	705	359	397	474	486	644	701	874	900	868
Water Year Types[c]												
Wet (32%)	858	796	802	552	638	810	737	877	866	1,036	1,081	1,048
Above Normal (16%)	693	660	718	366	432	568	595	735	776	993	1,073	1,031
Below Normal (13%)	835	715	806	333	364	398	465	607	704	962	993	943
Dry (24%)	676	556	628	239	224	223	320	507	619	785	765	775
Critical (15%)	541	471	515	156	155	133	121	300	394	463	461	384

Alternative 3

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,138	1,105	1,067	983	981	1,101	942	1,098	1,018	1,137	1,130	1,135
20%	1,091	1,087	1,029	857	895	1,093	910	1,047	970	1,124	1,118	1,126
30%	1,052	1,047	986	585	804	995	873	999	920	1,101	1,089	1,096
40%	1,026	1,006	956	513	633	871	845	952	891	1,063	1,066	1,065
50%	974	932	887	470	513	780	774	882	834	1,018	1,049	1,030
60%	883	856	830	416	438	520	727	831	796	981	1,018	983
70%	700	700	694	170	338	276	423	542	705	926	992	925
80%	523	518	581	134	160	199	196	423	590	741	760	764
90%	282	333	376	111	108	142	136	323	438	426	454	425
Long Term												
Full Simulation Period[b]	831	817	798	482	541	653	643	780	785	926	940	919
Water Year Types[c]												
Wet (32%)	975	971	902	754	855	1,037	896	1,014	948	1,084	1,091	1,087
Above Normal (16%)	756	797	844	444	603	863	838	966	894	1,063	1,086	1,074
Below Normal (13%)	961	921	891	499	529	719	730	879	837	1,026	1,056	993
Dry (24%)	764	733	706	308	299	281	444	587	696	859	865	877
Critical (15%)	592	551	593	212	207	156	135	300	415	456	475	393

Alternative 3 minus No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	99	152	5	197	148	100	98	79	32	14	-3	10
20%	123	208	95	341	257	262	164	165	114	62	6	27
30%	135	211	117	133	303	254	175	186	121	84	10	29
40%	154	236	150	148	228	372	209	184	128	71	12	62
50%	162	216	128	159	192	476	258	201	98	53	10	59
60%	139	268	149	251	148	288	314	336	100	55	27	41
70%	105	202	144	30	172	77	200	126	126	123	189	145
80%	26	75	168	5	31	39	45	20	41	60	119	95
90%	-16	62	67	9	26	19	28	38	53	26	52	45
Long Term												
Full Simulation Period[b]	93	159	94	124	144	179	157	136	84	52	40	52
Water Year Types[c]												
Wet (32%)	117	175	101	201	217	227	159	137	81	48	11	39
Above Normal (16%)	63	136	127	78	172	295	243	232	119	70	13	42
Below Normal (13%)	126	206	85	166	165	322	265	273	133	63	63	49
Dry (24%)	88	177	78	70	75	58	124	79	77	74	100	101
Critical (15%)	51	80	77	56	52	23	14	-1	21	-8	14	10

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-7-3. SWP Total Energy Use, Monthly Energy Use

No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,039	953	1,062	785	833	1,001	844	1,019	986	1,124	1,133	1,126
20%	968	879	934	516	639	831	746	883	856	1,062	1,112	1,099
30%	917	836	869	453	501	741	699	814	798	1,017	1,078	1,067
40%	871	769	806	365	405	499	636	769	763	991	1,054	1,003
50%	812	716	759	312	321	304	516	681	736	965	1,038	971
60%	744	587	680	165	290	232	413	495	697	926	991	943
70%	595	497	550	139	166	199	223	416	579	803	804	780
80%	497	443	413	128	129	160	151	403	549	681	641	669
90%	298	270	309	102	82	123	107	285	384	400	402	379
Long Term												
Full Simulation Period[b]	738	657	705	359	397	474	486	644	701	874	900	868
Water Year Types[c]												
Wet (32%)	858	796	802	552	638	810	737	877	866	1,036	1,081	1,048
Above Normal (16%)	693	660	718	366	432	568	595	735	776	993	1,073	1,031
Below Normal (13%)	835	715	806	333	364	398	465	607	704	962	993	943
Dry (24%)	676	556	628	239	224	223	320	507	619	785	765	775
Critical (15%)	541	471	515	156	155	133	121	300	394	463	461	384

Alternative 5

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	995	932	982	856	881	1,018	786	943	905	1,082	1,137	1,112
20%	950	869	887	518	621	830	726	846	833	1,043	1,101	1,081
30%	910	847	840	461	541	702	681	809	789	1,024	1,075	1,049
40%	875	787	795	390	425	519	626	769	765	990	1,052	1,005
50%	828	723	768	279	341	316	484	638	731	974	1,036	980
60%	750	654	708	168	218	237	423	518	704	926	1,000	915
70%	590	518	542	140	172	197	270	399	579	839	809	782
80%	449	457	433	130	133	155	118	380	545	700	637	655
90%	317	265	315	102	80	123	91	261	351	405	381	395
Long Term												
Full Simulation Period[b]	726	668	696	366	396	473	468	622	690	869	900	861
Water Year Types[c]												
Wet (32%)	845	802	792	588	638	799	703	857	847	1,023	1,074	1,035
Above Normal (16%)	665	651	714	342	436	572	579	719	772	994	1,074	1,033
Below Normal (13%)	796	770	767	334	372	407	456	572	697	970	1,017	952
Dry (24%)	683	568	621	240	225	224	313	482	612	788	769	772
Critical (15%)	543	472	529	152	136	132	105	285	385	445	446	365

Alternative 5 minus No Action Alternative

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-44	-21	-80	71	48	17	-58	-76	-81	-42	4	-14
20%	-18	-11	-47	1	-17	-1	-20	-37	-23	-19	-11	-18
30%	-7	11	-30	9	40	-39	-17	-5	-9	7	-4	-18
40%	4	17	-11	25	20	19	-10	1	2	-2	-2	2
50%	15	6	9	-33	20	12	-32	-43	-5	9	-3	9
60%	6	66	28	3	-72	4	10	23	7	0	9	-28
70%	-5	21	-8	0	5	-2	47	-17	0	35	6	2
80%	-48	15	20	1	5	-5	-33	-23	-4	19	-4	-13
90%	19	-5	6	0	-2	0	-16	-24	-33	5	-21	15
Long Term												
Full Simulation Period[b]	-12	11	-9	8	-1	-1	-19	-22	-11	-5	0	-6
Water Year Types[c]												
Wet (32%)	-13	6	-9	36	0	-10	-34	-20	-20	-13	-7	-13
Above Normal (16%)	-27	-9	-4	-24	4	3	-16	-16	-4	1	1	1
Below Normal (13%)	-39	55	-39	1	8	9	-9	-34	-7	8	25	8
Dry (24%)	7	12	-7	2	1	1	-7	-25	-7	3	3	-3
Critical (15%)	2	1	13	-3	-19	0	-16	-15	-9	-19	-15	-19

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-7-4. SWP Total Energy Use, Monthly Energy Use

Second Basis of Comparison

Statistic	Monthly Energy Use (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,148	1,119	1,145	1,102	1,006	1,103	990	1,106	1,055	1,146	1,146	1,140
20%	1,133	1,091	1,078	1,036	976	1,101	956	1,082	1,008	1,131	1,130	1,135
30%	1,101	1,061	1,052	885	954	1,091	908	1,048	981	1,122	1,120	1,124
40%	1,030	999	971	696	921	1,041	848	977	926	1,049	1,029	1,064
50%	983	947	906	628	757	1,012	786	908	863	988	1,011	1,030
60%	890	867	868	474	619	833	715	838	794	945	976	985
70%	740	636	759	320	498	623	418	530	672	861	950	948
80%	599	536	632	279	318	318	239	423	582	765	875	845
90%	488	486	491	181	233	195	147	396	565	704	742	712
Long Term												
Full Simulation Period[b]	871	840	864	625	678	781	652	801	820	951	975	966
Water Year Types[c]												
Wet (32%)	987	969	966	901	936	1,078	902	1,006	946	1,064	1,075	1,079
Above Normal (16%)	793	746	867	710	824	1,045	910	1,039	973	1,094	1,102	1,103
Below Normal (13%)	981	941	914	698	681	824	700	888	893	1,032	1,034	1,035
Dry (24%)	827	807	815	400	489	540	437	590	702	875	932	934
Critical (15%)	679	627	676	248	271	216	145	371	510	600	640	564

No Action Alternative

Statistic	Monthly Energy Use (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,039	953	1,062	785	833	1,001	844	1,019	986	1,124	1,133	1,126
20%	968	879	934	516	639	831	746	883	856	1,062	1,112	1,099
30%	917	836	869	453	501	741	699	814	798	1,017	1,078	1,067
40%	871	769	806	365	405	499	636	769	763	991	1,054	1,003
50%	812	716	759	312	321	304	516	681	736	965	1,038	971
60%	744	587	680	165	290	232	413	495	697	926	991	943
70%	595	497	550	139	166	199	223	416	579	803	804	780
80%	497	443	413	128	129	160	151	403	549	681	641	669
90%	298	270	309	102	82	123	107	285	384	400	402	379
Long Term												
Full Simulation Period[b]	738	657	705	359	397	474	486	644	701	874	900	868
Water Year Types[c]												
Wet (32%)	858	796	802	552	638	810	737	877	866	1,036	1,081	1,048
Above Normal (16%)	693	660	718	366	432	568	595	735	776	993	1,073	1,031
Below Normal (13%)	835	715	806	333	364	398	465	607	704	962	993	943
Dry (24%)	676	556	628	239	224	223	320	507	619	785	765	775
Critical (15%)	541	471	515	156	155	133	121	300	394	463	461	384

No Action Alternative minus Second Basis of Comparison

Statistic	Monthly Energy Use (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-108	-167	-83	-317	-173	-102	-146	-87	-70	-22	-13	-14
20%	-165	-211	-144	-520	-337	-270	-210	-199	-152	-69	-18	-36
30%	-183	-225	-183	-432	-453	-350	-209	-234	-183	-105	-41	-57
40%	-158	-229	-165	-331	-516	-542	-212	-208	-163	-57	25	-60
50%	-170	-231	-147	-316	-436	-708	-270	-227	-127	-23	27	-59
60%	-147	-280	-188	-309	-330	-601	-302	-343	-97	-19	15	-42
70%	-145	-138	-209	-181	-331	-424	-194	-114	-92	-58	-146	-168
80%	-102	-93	-219	-151	-189	-158	-88	-20	-33	-84	-234	-176
90%	-190	-215	-183	-79	-150	-72	-40	-111	-181	-304	-340	-332
Long Term												
Full Simulation Period[b]	-134	-183	-159	-267	-281	-307	-166	-157	-119	-76	-75	-99
Water Year Types[c]												
Wet (32%)	-130	-172	-164	-348	-298	-268	-165	-129	-79	-28	5	-31
Above Normal (16%)	-100	-86	-149	-344	-393	-477	-315	-304	-197	-102	-29	-71
Below Normal (13%)	-145	-226	-108	-365	-317	-426	-234	-282	-188	-69	-41	-92
Dry (24%)	-151	-251	-187	-161	-265	-317	-117	-83	-83	-90	-166	-159
Critical (15%)	-139	-157	-160	-92	-116	-83	-24	-70	-116	-137	-179	-180

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-7-5. SWP Total Energy Use, Monthly Energy Use

Second Basis of Comparison

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,148	1,119	1,145	1,102	1,006	1,103	990	1,106	1,055	1,146	1,146	1,140
20%	1,133	1,091	1,078	1,036	976	1,101	956	1,082	1,008	1,131	1,130	1,135
30%	1,101	1,061	1,052	885	954	1,091	908	1,048	981	1,122	1,120	1,124
40%	1,030	999	971	696	921	1,041	848	977	926	1,049	1,029	1,064
50%	983	947	906	628	757	1,012	786	908	863	988	1,011	1,030
60%	890	867	868	474	619	833	715	838	794	945	976	985
70%	740	636	759	320	498	623	418	530	672	861	950	948
80%	599	536	632	279	318	318	239	423	582	765	875	845
90%	488	486	491	181	233	195	147	396	565	704	742	712
Long Term												
Full Simulation Period[b]	871	840	864	625	678	781	652	801	820	951	975	966
Water Year Types[c]												
Wet (32%)	987	969	966	901	936	1,078	902	1,006	946	1,064	1,075	1,079
Above Normal (16%)	793	746	867	710	824	1,045	910	1,039	973	1,094	1,102	1,103
Below Normal (13%)	981	941	914	698	681	824	700	888	893	1,032	1,034	1,035
Dry (24%)	827	807	815	400	489	540	437	590	702	875	932	934
Critical (15%)	679	627	676	248	271	216	145	371	510	600	640	564

Alternative 3

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,138	1,105	1,067	983	981	1,101	942	1,098	1,018	1,137	1,130	1,135
20%	1,091	1,087	1,029	857	895	1,093	910	1,047	970	1,124	1,118	1,126
30%	1,052	1,047	986	585	804	995	873	999	920	1,101	1,089	1,096
40%	1,026	1,006	956	513	633	871	845	952	891	1,063	1,066	1,065
50%	974	932	887	470	513	780	774	882	834	1,018	1,049	1,030
60%	883	856	830	416	438	520	727	831	796	981	1,018	983
70%	700	700	694	170	338	276	423	542	705	926	992	925
80%	523	518	581	134	160	199	196	423	590	741	760	764
90%	282	333	376	111	108	142	136	323	438	426	454	425
Long Term												
Full Simulation Period[b]	831	817	798	482	541	653	643	780	785	926	940	919
Water Year Types[c]												
Wet (32%)	975	971	902	754	855	1,037	896	1,014	948	1,084	1,091	1,087
Above Normal (16%)	756	797	844	444	603	863	838	966	894	1,063	1,086	1,074
Below Normal (13%)	961	921	891	499	529	719	730	879	837	1,026	1,056	993
Dry (24%)	764	733	706	308	299	281	444	587	696	859	865	877
Critical (15%)	592	551	593	212	207	156	135	300	415	456	475	393

Alternative 3 minus Second Basis of Comparison

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-10	-14	-78	-120	-26	-2	-48	-9	-38	-9	-16	-4
20%	-42	-4	-50	-179	-80	-8	-46	-35	-38	-7	-12	-9
30%	-48	-14	-67	-299	-150	-95	-35	-48	-61	-21	-31	-28
40%	-4	7	-15	-183	-288	-170	-3	-25	-35	14	37	2
50%	-8	-15	-20	-157	-244	-233	-11	-26	-29	30	37	0
60%	-7	-11	-38	-58	-182	-313	12	-7	3	35	42	-2
70%	-40	64	-65	-151	-159	-347	5	12	33	65	43	-23
80%	-77	-18	-51	-145	-157	-119	-43	0	8	-24	-115	-81
90%	-206	-153	-115	-70	-124	-53	-11	-73	-127	-277	-289	-287
Long Term												
Full Simulation Period[b]	-41	-23	-66	-143	-137	-128	-9	-21	-35	-24	-35	-47
Water Year Types[c]												
Wet (32%)	-12	3	-64	-147	-81	-41	-7	8	2	21	16	7
Above Normal (16%)	-37	51	-23	-266	-221	-182	-72	-72	-79	-31	-16	-29
Below Normal (13%)	-20	-20	-23	-199	-152	-104	30	-9	-56	-6	22	-43
Dry (24%)	-63	-74	-109	-91	-190	-259	7	-4	-6	-16	-66	-57
Critical (15%)	-88	-77	-83	-36	-64	-60	-10	-71	-95	-145	-165	-171

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-7-6. SWP Total Energy Use, Monthly Energy Use

Second Basis of Comparison

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	1,148	1,119	1,145	1,102	1,006	1,103	990	1,106	1,055	1,146	1,146	1,140
20%	1,133	1,091	1,078	1,036	976	1,101	956	1,082	1,008	1,131	1,130	1,135
30%	1,101	1,061	1,052	885	954	1,091	908	1,048	981	1,122	1,120	1,124
40%	1,030	999	971	696	921	1,041	848	977	926	1,049	1,029	1,064
50%	983	947	906	628	757	1,012	786	908	863	988	1,011	1,030
60%	890	867	868	474	619	833	715	838	794	945	976	985
70%	740	636	759	320	498	623	418	530	672	861	950	948
80%	599	536	632	279	318	318	239	423	582	765	875	845
90%	488	486	491	181	233	195	147	396	565	704	742	712
Long Term												
Full Simulation Period[b]	871	840	864	625	678	781	652	801	820	951	975	966
Water Year Types[c]												
Wet (32%)	987	969	966	901	936	1,078	902	1,006	946	1,064	1,075	1,079
Above Normal (16%)	793	746	867	710	824	1,045	910	1,039	973	1,094	1,102	1,103
Below Normal (13%)	981	941	914	698	681	824	700	888	893	1,032	1,034	1,035
Dry (24%)	827	807	815	400	489	540	437	590	702	875	932	934
Critical (15%)	679	627	676	248	271	216	145	371	510	600	640	564

Alternative 5

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	995	932	982	856	881	1,018	786	943	905	1,082	1,137	1,112
20%	950	869	887	518	621	830	726	846	833	1,043	1,101	1,081
30%	910	847	840	461	541	702	681	809	789	1,024	1,075	1,049
40%	875	787	795	390	425	519	626	769	765	990	1,052	1,005
50%	828	723	768	279	341	316	484	638	731	974	1,036	980
60%	750	654	708	168	218	237	423	518	704	926	1,000	915
70%	590	518	542	140	172	197	270	399	579	839	809	782
80%	449	457	433	130	133	155	118	380	545	700	637	655
90%	317	265	315	102	80	123	91	261	351	405	381	395
Long Term												
Full Simulation Period[b]	726	668	696	366	396	473	468	622	690	869	900	861
Water Year Types[c]												
Wet (32%)	845	802	792	588	638	799	703	857	847	1,023	1,074	1,035
Above Normal (16%)	665	651	714	342	436	572	579	719	772	994	1,074	1,033
Below Normal (13%)	796	770	767	334	372	407	456	572	697	970	1,017	952
Dry (24%)	683	568	621	240	225	224	313	482	612	788	769	772
Critical (15%)	543	472	529	152	136	132	105	285	385	445	446	365

Alternative 5 minus Second Basis of Comparison

	Monthly Energy Use (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-153	-187	-163	-246	-126	-85	-204	-164	-151	-64	-9	-28
20%	-182	-222	-191	-519	-355	-270	-230	-237	-175	-88	-29	-54
30%	-190	-214	-213	-424	-413	-389	-227	-239	-192	-98	-45	-75
40%	-155	-212	-175	-306	-496	-523	-222	-208	-160	-59	22	-58
50%	-155	-224	-139	-349	-416	-696	-302	-269	-131	-14	25	-49
60%	-140	-213	-160	-306	-402	-597	-292	-320	-90	-19	24	-70
70%	-150	-117	-217	-181	-326	-426	-147	-131	-92	-22	-140	-165
80%	-150	-79	-200	-149	-184	-163	-121	-44	-37	-65	-238	-190
90%	-171	-220	-177	-79	-152	-72	-55	-135	-214	-298	-362	-317
Long Term												
Full Simulation Period[b]	-145	-172	-168	-259	-282	-308	-184	-179	-130	-81	-75	-105
Water Year Types[c]												
Wet (32%)	-143	-167	-174	-312	-298	-278	-199	-149	-99	-41	-2	-44
Above Normal (16%)	-127	-95	-153	-368	-388	-473	-331	-320	-201	-100	-27	-70
Below Normal (13%)	-185	-172	-146	-364	-309	-416	-244	-316	-195	-62	-16	-84
Dry (24%)	-144	-239	-194	-159	-264	-315	-124	-108	-90	-87	-163	-162
Critical (15%)	-137	-155	-147	-95	-135	-84	-40	-86	-125	-155	-194	-199

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

B.8. SWP Net Energy Generation

Table B-8-1. SWP Net Generation, Monthly Net Generation

No Action Alternative

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-174	-168	-177	-9	6	-11	8	-82	-120	-197	-242	-253
20%	-291	-247	-254	-55	-36	-53	-34	-109	-183	-235	-325	-333
30%	-352	-294	-338	-67	-68	-82	-58	-145	-217	-252	-402	-392
40%	-400	-345	-422	-88	-103	-104	-86	-166	-254	-281	-435	-413
50%	-450	-382	-463	-115	-134	-131	-133	-193	-284	-297	-474	-437
60%	-476	-451	-498	-187	-180	-157	-222	-254	-311	-321	-494	-454
70%	-506	-497	-535	-221	-221	-193	-293	-333	-343	-360	-514	-496
80%	-540	-541	-592	-260	-292	-353	-341	-394	-377	-405	-539	-523
90%	-591	-561	-620	-312	-367	-452	-387	-420	-448	-456	-577	-618
Long Term												
Full Simulation Period[b]	-417	-386	-430	-150	-152	-176	-173	-235	-287	-318	-442	-430
Water Year Types[c]												
Wet (32%)	-479	-454	-454	-138	-132	-217	-216	-255	-380	-389	-530	-417
Above Normal (16%)	-403	-400	-442	-194	-214	-198	-264	-325	-333	-296	-467	-476
Below Normal (13%)	-453	-420	-512	-191	-225	-241	-205	-263	-287	-330	-477	-555
Dry (24%)	-381	-333	-402	-143	-132	-142	-137	-207	-217	-302	-399	-462
Critical (15%)	-321	-280	-333	-104	-95	-60	-13	-117	-151	-207	-263	-239

Alternative 1

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-326	-290	-313	-118	-84	-102	-35	-139	-185	-301	-403	-450
20%	-347	-349	-388	-161	-139	-162	-79	-167	-220	-315	-447	-496
30%	-414	-427	-450	-230	-244	-224	-142	-201	-238	-341	-484	-529
40%	-498	-521	-513	-252	-284	-311	-259	-304	-267	-367	-500	-569
50%	-571	-587	-579	-274	-336	-392	-339	-374	-315	-382	-509	-603
60%	-602	-632	-616	-354	-376	-445	-409	-415	-361	-399	-516	-615
70%	-630	-663	-640	-443	-452	-510	-486	-471	-399	-414	-533	-635
80%	-664	-686	-685	-503	-525	-550	-537	-529	-433	-430	-554	-661
90%	-680	-711	-738	-695	-603	-655	-572	-572	-526	-458	-584	-690
Long Term												
Full Simulation Period[b]	-512	-530	-539	-341	-341	-372	-317	-360	-331	-386	-496	-572
Water Year Types[c]												
Wet (32%)	-582	-598	-544	-358	-325	-362	-385	-398	-422	-426	-551	-638
Above Normal (16%)	-470	-481	-558	-460	-455	-473	-526	-553	-407	-382	-514	-624
Below Normal (13%)	-573	-601	-609	-470	-409	-532	-387	-429	-335	-403	-525	-617
Dry (24%)	-481	-516	-531	-273	-341	-375	-227	-263	-236	-378	-476	-557
Critical (15%)	-398	-393	-453	-168	-192	-131	-28	-164	-207	-300	-366	-354

Alternative 1 minus No Action Alternative

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-151	-122	-136	-109	-90	-90	-42	-57	-64	-104	-160	-197
20%	-56	-102	-134	-106	-103	-110	-46	-58	-36	-80	-122	-163
30%	-63	-134	-112	-163	-176	-141	-84	-57	-21	-89	-82	-137
40%	-97	-176	-91	-165	-181	-207	-173	-138	-13	-86	-65	-156
50%	-121	-205	-116	-159	-202	-261	-206	-181	-31	-85	-35	-166
60%	-127	-181	-118	-167	-196	-288	-187	-161	-49	-78	-22	-161
70%	-124	-166	-105	-222	-231	-317	-193	-138	-56	-54	-18	-139
80%	-124	-145	-93	-243	-233	-197	-196	-135	-56	-25	-15	-137
90%	-89	-151	-118	-383	-236	-203	-185	-152	-78	-2	-7	-71
Long Term												
Full Simulation Period[b]	-95	-144	-109	-190	-189	-195	-144	-124	-44	-67	-54	-142
Water Year Types[c]												
Wet (32%)	-103	-143	-90	-220	-193	-144	-169	-143	-42	-37	-21	-220
Above Normal (16%)	-67	-82	-116	-265	-240	-275	-261	-228	-74	-87	-47	-149
Below Normal (13%)	-120	-181	-97	-279	-183	-291	-182	-165	-48	-74	-48	-62
Dry (24%)	-99	-183	-130	-130	-210	-233	-90	-56	-19	-76	-77	-95
Critical (15%)	-77	-113	-120	-64	-97	-70	-16	-48	-56	-93	-103	-115

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Second Basis of Comparison and Alternative 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-8-2. SWP Net Generation, Monthly Net Generation

No Action Alternative

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-174	-168	-177	-9	6	-11	8	-82	-120	-197	-242	-253
20%	-291	-247	-254	-55	-36	-53	-34	-109	-183	-235	-325	-333
30%	-352	-294	-338	-67	-68	-82	-58	-145	-217	-252	-402	-392
40%	-400	-345	-422	-88	-103	-104	-86	-166	-254	-281	-435	-413
50%	-450	-382	-463	-115	-134	-131	-133	-193	-284	-297	-474	-437
60%	-476	-451	-498	-187	-180	-157	-222	-254	-311	-321	-494	-454
70%	-506	-497	-535	-221	-221	-193	-293	-333	-343	-360	-514	-496
80%	-540	-541	-592	-260	-292	-353	-341	-394	-377	-405	-539	-523
90%	-591	-561	-620	-312	-367	-452	-387	-420	-448	-456	-577	-618
Long Term												
Full Simulation Period[b]	-417	-386	-430	-150	-152	-176	-173	-235	-287	-318	-442	-430
Water Year Types[c]												
Wet (32%)	-479	-454	-454	-138	-132	-217	-216	-255	-380	-389	-530	-417
Above Normal (16%)	-403	-400	-442	-194	-214	-198	-264	-325	-333	-296	-467	-476
Below Normal (13%)	-453	-420	-512	-191	-225	-241	-205	-263	-287	-330	-477	-555
Dry (24%)	-381	-333	-402	-143	-132	-142	-137	-207	-217	-302	-399	-462
Critical (15%)	-321	-280	-333	-104	-95	-60	-13	-117	-151	-207	-263	-239

Alternative 3

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-171	-220	-216	-62	-33	-52	-26	-98	-147	-201	-261	-257
20%	-302	-317	-305	-74	-72	-84	-65	-142	-203	-265	-385	-465
30%	-425	-427	-414	-100	-116	-142	-129	-186	-229	-308	-458	-532
40%	-524	-540	-480	-132	-174	-176	-262	-286	-282	-333	-487	-582
50%	-566	-574	-539	-211	-230	-256	-353	-372	-307	-362	-504	-605
60%	-589	-627	-590	-246	-273	-354	-419	-423	-327	-387	-515	-628
70%	-628	-655	-620	-285	-323	-411	-463	-453	-357	-404	-544	-646
80%	-661	-680	-643	-316	-391	-481	-509	-501	-422	-431	-561	-666
90%	-675	-703	-678	-475	-492	-540	-555	-578	-506	-453	-583	-702
Long Term												
Full Simulation Period[b]	-491	-512	-485	-224	-238	-287	-310	-342	-309	-355	-472	-552
Water Year Types[c]												
Wet (32%)	-577	-596	-482	-246	-272	-355	-382	-398	-405	-426	-557	-659
Above Normal (16%)	-451	-512	-534	-253	-319	-366	-474	-503	-362	-346	-490	-607
Below Normal (13%)	-564	-585	-585	-301	-285	-457	-400	-428	-334	-362	-504	-609
Dry (24%)	-452	-467	-460	-187	-180	-182	-232	-255	-236	-354	-454	-529
Critical (15%)	-348	-337	-390	-136	-128	-71	-22	-116	-144	-205	-271	-246

Alternative 3 minus No Action Alternative

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	3	-52	-39	-52	-39	-41	-34	-16	-27	-3	-18	-4
20%	-11	-70	-51	-18	-37	-31	-31	-33	-20	-31	-60	-132
30%	-73	-133	-76	-33	-48	-60	-71	-41	-12	-57	-56	-140
40%	-124	-195	-58	-45	-71	-72	-176	-120	-29	-52	-52	-169
50%	-115	-191	-76	-96	-95	-125	-220	-179	-23	-65	-30	-167
60%	-113	-176	-92	-59	-93	-196	-197	-169	-15	-66	-22	-175
70%	-122	-158	-85	-63	-102	-218	-170	-120	-14	-44	-30	-150
80%	-120	-139	-51	-56	-99	-128	-168	-108	-45	-27	-23	-142
90%	-83	-142	-57	-164	-126	-88	-168	-158	-58	3	-6	-84
Long Term												
Full Simulation Period[b]	-75	-126	-56	-74	-86	-111	-136	-107	-22	-36	-31	-122
Water Year Types[c]												
Wet (32%)	-98	-142	-27	-108	-140	-138	-165	-143	-25	-37	-27	-241
Above Normal (16%)	-48	-113	-92	-58	-105	-168	-210	-179	-29	-50	-22	-131
Below Normal (13%)	-111	-165	-73	-110	-60	-216	-195	-165	-47	-32	-27	-54
Dry (24%)	-71	-134	-58	-44	-49	-40	-95	-48	-19	-52	-56	-67
Critical (15%)	-27	-57	-56	-32	-33	-11	-9	1	7	2	-8	-7

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-8-3. SWP Net Generation, Monthly Net Generation

No Action Alternative

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-174	-168	-177	-9	6	-11	8	-82	-120	-197	-242	-253
20%	-291	-247	-254	-55	-36	-53	-34	-109	-183	-235	-325	-333
30%	-352	-294	-338	-67	-68	-82	-58	-145	-217	-252	-402	-392
40%	-400	-345	-422	-88	-103	-104	-86	-166	-254	-281	-435	-413
50%	-450	-382	-463	-115	-134	-131	-133	-193	-284	-297	-474	-437
60%	-476	-451	-498	-187	-180	-157	-222	-254	-311	-321	-494	-454
70%	-506	-497	-535	-221	-221	-193	-293	-333	-343	-360	-514	-496
80%	-540	-541	-592	-260	-292	-353	-341	-394	-377	-405	-539	-523
90%	-591	-561	-620	-312	-367	-452	-387	-420	-448	-456	-577	-618
Long Term												
Full Simulation Period[b]	-417	-386	-430	-150	-152	-176	-173	-235	-287	-318	-442	-430
Water Year Types[c]												
Wet (32%)	-479	-454	-454	-138	-132	-217	-216	-255	-380	-389	-530	-417
Above Normal (16%)	-403	-400	-442	-194	-214	-198	-264	-325	-333	-296	-467	-476
Below Normal (13%)	-453	-420	-512	-191	-225	-241	-205	-263	-287	-330	-477	-555
Dry (24%)	-381	-333	-402	-143	-132	-142	-137	-207	-217	-302	-399	-462
Critical (15%)	-321	-280	-333	-104	-95	-60	-13	-117	-151	-207	-263	-239

Alternative 5

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-181	-165	-196	-39	6	-25	23	-69	-136	-190	-220	-247
20%	-264	-265	-252	-62	-32	-58	-4	-105	-186	-230	-326	-339
30%	-356	-315	-322	-72	-66	-85	-39	-129	-209	-247	-413	-379
40%	-406	-351	-411	-89	-103	-101	-60	-150	-256	-280	-447	-401
50%	-442	-407	-464	-113	-120	-122	-124	-178	-289	-299	-472	-424
60%	-469	-454	-507	-178	-162	-156	-193	-234	-305	-321	-490	-459
70%	-496	-502	-529	-214	-238	-189	-277	-306	-330	-363	-515	-492
80%	-534	-532	-573	-263	-301	-349	-330	-374	-368	-393	-525	-554
90%	-583	-552	-611	-303	-364	-449	-371	-419	-431	-425	-554	-599
Long Term												
Full Simulation Period[b]	-409	-393	-423	-155	-152	-176	-156	-221	-281	-312	-438	-426
Water Year Types[c]												
Wet (32%)	-472	-462	-448	-162	-131	-210	-194	-239	-368	-377	-520	-411
Above Normal (16%)	-385	-387	-438	-179	-221	-204	-253	-315	-331	-296	-468	-476
Below Normal (13%)	-427	-453	-487	-192	-231	-247	-191	-245	-286	-331	-483	-558
Dry (24%)	-384	-341	-395	-144	-132	-143	-119	-194	-213	-298	-399	-459
Critical (15%)	-324	-281	-339	-102	-81	-59	3	-102	-147	-196	-250	-226

Alternative 5 minus No Action Alternative

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-7	3	-19	-30	0	-13	15	12	-16	8	23	7
20%	26	-18	2	-7	4	-5	29	5	-3	4	-1	-5
30%	-4	-21	16	-4	2	-3	18	15	8	4	-11	13
40%	-6	-7	11	-1	0	2	26	15	-3	1	-12	12
50%	9	-25	-2	2	15	9	8	15	-5	-1	2	13
60%	7	-3	-8	9	19	1	29	20	6	0	4	-5
70%	10	-5	6	7	-17	3	16	27	13	-3	0	4
80%	6	8	19	-3	-9	4	11	20	9	12	14	-31
90%	8	9	9	9	2	3	15	1	17	31	24	20
Long Term												
Full Simulation Period[b]	7	-7	7	-5	0	1	17	14	6	6	4	4
Water Year Types[c]												
Wet (32%)	7	-8	6	-24	1	8	23	15	12	12	10	6
Above Normal (16%)	18	12	4	15	-6	-6	11	10	2	0	-1	0
Below Normal (13%)	25	-33	26	0	-5	-6	14	19	2	-1	-6	-3
Dry (24%)	-3	-7	7	-1	-1	-1	18	13	4	4	0	3
Critical (15%)	-3	-1	-6	2	14	1	16	15	4	11	12	14

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-8-4. SWP Net Generation, Monthly Net Generation

Second Basis of Comparison

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-326	-290	-313	-118	-84	-102	-35	-139	-185	-301	-403	-450
20%	-347	-349	-388	-161	-139	-162	-79	-167	-220	-315	-447	-496
30%	-414	-427	-450	-230	-244	-224	-142	-201	-238	-341	-484	-529
40%	-498	-521	-513	-252	-284	-311	-259	-304	-267	-367	-500	-569
50%	-571	-587	-579	-274	-336	-392	-339	-374	-315	-382	-509	-603
60%	-602	-632	-616	-354	-376	-445	-409	-415	-361	-399	-516	-615
70%	-630	-663	-640	-443	-452	-510	-486	-471	-399	-414	-533	-635
80%	-664	-686	-685	-503	-525	-550	-537	-529	-433	-430	-554	-661
90%	-680	-711	-738	-695	-603	-655	-572	-572	-526	-458	-584	-690
Long Term												
Full Simulation Period[b]	-512	-530	-539	-341	-341	-372	-317	-360	-331	-386	-496	-572
Water Year Types[c]												
Wet (32%)	-582	-598	-544	-358	-325	-362	-385	-398	-422	-426	-551	-638
Above Normal (16%)	-470	-481	-558	-460	-455	-473	-526	-553	-407	-382	-514	-624
Below Normal (13%)	-573	-601	-609	-470	-409	-532	-387	-429	-335	-403	-525	-617
Dry (24%)	-481	-516	-531	-273	-341	-375	-227	-263	-236	-378	-476	-557
Critical (15%)	-398	-393	-453	-168	-192	-131	-28	-164	-207	-300	-366	-354

No Action Alternative

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-174	-168	-177	-9	6	-11	8	-82	-120	-197	-242	-253
20%	-291	-247	-254	-55	-36	-53	-34	-109	-183	-235	-325	-333
30%	-352	-294	-338	-67	-68	-82	-58	-145	-217	-252	-402	-392
40%	-400	-345	-422	-88	-103	-104	-86	-166	-254	-281	-435	-413
50%	-450	-382	-463	-115	-134	-131	-133	-193	-284	-297	-474	-437
60%	-476	-451	-498	-187	-180	-157	-222	-254	-311	-321	-494	-454
70%	-506	-497	-535	-221	-221	-193	-293	-333	-343	-360	-514	-496
80%	-540	-541	-592	-260	-292	-353	-341	-394	-377	-405	-539	-523
90%	-591	-561	-620	-312	-367	-452	-387	-420	-448	-456	-577	-618
Long Term												
Full Simulation Period[b]	-417	-386	-430	-150	-152	-176	-173	-235	-287	-318	-442	-430
Water Year Types[c]												
Wet (32%)	-479	-454	-454	-138	-132	-217	-216	-255	-380	-389	-530	-417
Above Normal (16%)	-403	-400	-442	-194	-214	-198	-264	-325	-333	-296	-467	-476
Below Normal (13%)	-453	-420	-512	-191	-225	-241	-205	-263	-287	-330	-477	-555
Dry (24%)	-381	-333	-402	-143	-132	-142	-137	-207	-217	-302	-399	-462
Critical (15%)	-321	-280	-333	-104	-95	-60	-13	-117	-151	-207	-263	-239

No Action Alternative minus Second Basis of Comparison

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	151	122	136	109	90	90	42	57	64	104	160	197
20%	56	102	134	106	103	110	46	58	36	80	122	163
30%	63	134	112	163	176	141	84	57	21	89	82	137
40%	97	176	91	165	181	207	173	138	13	86	65	156
50%	121	205	116	159	202	261	206	181	31	85	35	166
60%	127	181	118	167	196	288	187	161	49	78	22	161
70%	124	166	105	222	231	317	193	138	56	54	18	139
80%	124	145	93	243	233	197	196	135	56	25	15	137
90%	89	151	118	383	236	203	185	152	78	2	7	71
Long Term												
Full Simulation Period[b]	95	144	109	190	189	195	144	124	44	67	54	142
Water Year Types[c]												
Wet (32%)	103	143	90	220	193	144	169	143	42	37	21	220
Above Normal (16%)	67	82	116	265	240	275	261	228	74	87	47	149
Below Normal (13%)	120	181	97	279	183	291	182	165	48	74	48	62
Dry (24%)	99	183	130	130	210	233	90	56	19	76	77	95
Critical (15%)	77	113	120	64	97	70	16	48	56	93	103	115

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-8-5. SWP Net Generation, Monthly Net Generation

Second Basis of Comparison

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-326	-290	-313	-118	-84	-102	-35	-139	-185	-301	-403	-450
20%	-347	-349	-388	-161	-139	-162	-79	-167	-220	-315	-447	-496
30%	-414	-427	-450	-230	-244	-224	-142	-201	-238	-341	-484	-529
40%	-498	-521	-513	-252	-284	-311	-259	-304	-267	-367	-500	-569
50%	-571	-587	-579	-274	-336	-392	-339	-374	-315	-382	-509	-603
60%	-602	-632	-616	-354	-376	-445	-409	-415	-361	-399	-516	-615
70%	-630	-663	-640	-443	-452	-510	-486	-471	-399	-414	-533	-635
80%	-664	-686	-685	-503	-525	-550	-537	-529	-433	-430	-554	-661
90%	-680	-711	-738	-695	-603	-655	-572	-572	-526	-458	-584	-690
Long Term												
Full Simulation Period[b]	-512	-530	-539	-341	-341	-372	-317	-360	-331	-386	-496	-572
Water Year Types[c]												
Wet (32%)	-582	-598	-544	-358	-325	-362	-385	-398	-422	-426	-551	-638
Above Normal (16%)	-470	-481	-558	-460	-455	-473	-526	-553	-407	-382	-514	-624
Below Normal (13%)	-573	-601	-609	-470	-409	-532	-387	-429	-335	-403	-525	-617
Dry (24%)	-481	-516	-531	-273	-341	-375	-227	-263	-236	-378	-476	-557
Critical (15%)	-398	-393	-453	-168	-192	-131	-28	-164	-207	-300	-366	-354

Alternative 3

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-171	-220	-216	-62	-33	-52	-26	-98	-147	-201	-261	-257
20%	-302	-317	-305	-74	-72	-84	-65	-142	-203	-265	-385	-465
30%	-425	-427	-414	-100	-116	-142	-129	-186	-229	-308	-458	-532
40%	-524	-540	-480	-132	-174	-176	-262	-286	-282	-333	-487	-582
50%	-566	-574	-539	-211	-230	-256	-353	-372	-307	-362	-504	-605
60%	-589	-627	-590	-246	-273	-354	-419	-423	-327	-387	-515	-628
70%	-628	-655	-620	-285	-323	-411	-463	-453	-357	-404	-544	-646
80%	-661	-680	-643	-316	-391	-481	-509	-501	-422	-431	-561	-666
90%	-675	-703	-678	-475	-492	-540	-555	-578	-506	-453	-583	-702
Long Term												
Full Simulation Period[b]	-491	-512	-485	-224	-238	-287	-310	-342	-309	-355	-472	-552
Water Year Types[c]												
Wet (32%)	-577	-596	-482	-246	-272	-355	-382	-398	-405	-426	-557	-659
Above Normal (16%)	-451	-512	-534	-253	-319	-366	-474	-503	-362	-346	-490	-607
Below Normal (13%)	-564	-585	-585	-301	-285	-457	-400	-428	-334	-362	-504	-609
Dry (24%)	-452	-467	-460	-187	-180	-182	-232	-255	-236	-354	-454	-529
Critical (15%)	-348	-337	-390	-136	-128	-71	-22	-116	-144	-205	-271	-246

Alternative 3 minus Second Basis of Comparison

Statistic	Monthly Net Generation (GWh)											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	154	70	97	57	51	50	9	41	37	100	142	193
20%	45	32	83	88	67	78	14	25	16	50	62	31
30%	-10	0	36	130	127	81	13	16	9	33	26	-3
40%	-26	-20	33	120	110	135	-3	18	-16	34	13	-13
50%	6	13	40	63	107	136	-14	2	8	20	5	-2
60%	14	5	26	108	103	91	-10	-8	34	12	0	-13
70%	2	8	20	159	128	99	23	18	42	10	-11	-11
80%	4	6	42	187	134	69	28	27	11	-1	-7	-5
90%	6	9	61	219	110	115	17	-6	20	5	2	-12
Long Term												
Full Simulation Period[b]	20	18	54	117	103	85	7	17	22	31	24	20
Water Year Types[c]												
Wet (32%)	5	2	63	112	53	6	4	0	17	0	-6	-21
Above Normal (16%)	19	-31	24	207	136	107	51	49	45	36	24	17
Below Normal (13%)	9	16	24	170	123	75	-13	1	1	41	21	8
Dry (24%)	29	49	71	86	161	193	-5	8	0	23	21	29
Critical (15%)	51	56	63	32	64	59	7	49	63	95	95	108

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Table B-8-6. SWP Net Generation, Monthly Net Generation

Second Basis of Comparison

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-326	-290	-313	-118	-84	-102	-35	-139	-185	-301	-403	-450
20%	-347	-349	-388	-161	-139	-162	-79	-167	-220	-315	-447	-496
30%	-414	-427	-450	-230	-244	-224	-142	-201	-238	-341	-484	-529
40%	-498	-521	-513	-252	-284	-311	-259	-304	-267	-367	-500	-569
50%	-571	-587	-579	-274	-336	-392	-339	-374	-315	-382	-509	-603
60%	-602	-632	-616	-354	-376	-445	-409	-415	-361	-399	-516	-615
70%	-630	-663	-640	-443	-452	-510	-486	-471	-399	-414	-533	-635
80%	-664	-686	-685	-503	-525	-550	-537	-529	-433	-430	-554	-661
90%	-680	-711	-738	-695	-603	-655	-572	-572	-526	-458	-584	-690
Long Term												
Full Simulation Period[b]	-512	-530	-539	-341	-341	-372	-317	-360	-331	-386	-496	-572
Water Year Types[c]												
Wet (32%)	-582	-598	-544	-358	-325	-362	-385	-398	-422	-426	-551	-638
Above Normal (16%)	-470	-481	-558	-460	-455	-473	-526	-553	-407	-382	-514	-624
Below Normal (13%)	-573	-601	-609	-470	-409	-532	-387	-429	-335	-403	-525	-617
Dry (24%)	-481	-516	-531	-273	-341	-375	-227	-263	-236	-378	-476	-557
Critical (15%)	-398	-393	-453	-168	-192	-131	-28	-164	-207	-300	-366	-354

Alternative 5

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	-181	-165	-196	-39	6	-25	23	-69	-136	-190	-220	-247
20%	-264	-265	-252	-62	-32	-58	-4	-105	-186	-230	-326	-339
30%	-356	-315	-322	-72	-66	-85	-39	-129	-209	-247	-413	-379
40%	-406	-351	-411	-89	-103	-101	-60	-150	-256	-280	-447	-401
50%	-442	-407	-464	-113	-120	-122	-124	-178	-289	-299	-472	-424
60%	-469	-454	-507	-178	-162	-156	-193	-234	-305	-321	-490	-459
70%	-496	-502	-529	-214	-238	-189	-277	-306	-330	-363	-515	-492
80%	-534	-532	-573	-263	-301	-349	-330	-374	-368	-393	-525	-554
90%	-583	-552	-611	-303	-364	-449	-371	-419	-431	-425	-554	-599
Long Term												
Full Simulation Period[b]	-409	-393	-423	-155	-152	-176	-156	-221	-281	-312	-438	-426
Water Year Types[c]												
Wet (32%)	-472	-462	-448	-162	-131	-210	-194	-239	-368	-377	-520	-411
Above Normal (16%)	-385	-387	-438	-179	-221	-204	-253	-315	-331	-296	-468	-476
Below Normal (13%)	-427	-453	-487	-192	-231	-247	-191	-245	-286	-331	-483	-558
Dry (24%)	-384	-341	-395	-144	-132	-143	-119	-194	-213	-298	-399	-459
Critical (15%)	-324	-281	-339	-102	-81	-59	3	-102	-147	-196	-250	-226

Alternative 5 minus Second Basis of Comparison

	Monthly Net Generation (GWh)											
Statistic	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Probability of Exceedance[a]												
10%	144	125	117	79	90	77	57	70	48	111	183	204
20%	82	84	136	99	107	105	75	62	33	85	122	158
30%	59	112	128	158	178	138	103	72	29	94	71	150
40%	92	169	101	164	181	209	199	153	10	86	53	168
50%	130	180	115	161	217	270	214	196	26	83	37	178
60%	134	178	109	176	214	289	216	181	56	78	26	156
70%	133	161	111	229	214	320	209	165	69	51	18	143
80%	130	154	112	240	223	200	207	155	65	37	29	106
90%	97	159	127	392	238	206	200	153	95	33	31	91
Long Term												
Full Simulation Period[b]	102	137	116	185	190	196	161	139	50	74	58	146
Water Year Types[c]												
Wet (32%)	110	136	96	196	194	152	192	159	54	49	31	226
Above Normal (16%)	85	94	120	280	234	269	272	238	76	87	46	148
Below Normal (13%)	145	148	122	279	178	285	196	184	49	72	42	59
Dry (24%)	96	175	137	129	209	232	108	69	23	79	77	99
Critical (15%)	75	112	114	66	110	71	32	62	60	104	115	128

a Exceedance probability is defined as the probability a given value will be exceeded in any one year.

b Based on the 82-year simulation period.

c As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999); projected to Year 2030.

Notes: 1) All alternatives are simulated with projected hydrology and sea level at Year 2030 conditions. 2) Model results for Alternatives 1, 4, and Second Basis of Comparison are the same, therefore Alternative 1 and 4 results are not presented. Qualitative differences, if applicable, are discussed in the text. 3) Model results for Alternative 2 and No Action Alternative are the same, therefore Alternative 2 results are not presented. Qualitative differences, if applicable, are discussed in the text.

Appendix 9A

Special-Status Aquatic Species

Table 9A.1 presents a list special-status aquatic species that occur within the study area and could be affected by changes under Alternatives 1 through 5 as compared to the No Action Alternative and Second Basis of Comparison.

Special status aquatic species that occur or may occur within areas potentially affected by actions that could occur under Alternatives 1 through 5 related to the Central Valley Project and State Water Project operations or ecosystem restoration activities. Impact potential is based on the likelihood of operational changes or restoration actions to impact suitable habitat occurring in defined area of analysis.

The area of analysis for operational changes includes open water areas of reservoirs, rivers, and creeks; adjacent riparian vegetation; wetlands supported by these waterbodies; and potential restoration areas in Yolo Bypass and Suisun Marsh. Aquatic species are presented in alphabetical order based on scientific name.

Table 9A.1 Special-Status Aquatic Species

Species or Population	Federal Status	State Status	Occurrence within Area of Analysis
River Lamprey	None	None	Feather River, American River, Sacramento River, Delta and Suisun Marsh, Stanislaus River, San Joaquin River
Pacific Lamprey	None	None	Trinity River, Klamath River, Clear Creek , Feather River, Sacramento River, American River, Delta, Stanislaus River, San Joaquin River
Green Sturgeon Southern DPS	Threatened	Species of Special Concern	Trinity River, Klamath River, Feather River , Sacramento River, Delta and Suisun Marsh
White Sturgeon	None	None	Trinity River, Klamath River, Feather River, Sacramento River, American River, San Joaquin River, Delta and Suisun Marsh
Eulachon Southern DPS	Threatened	None	Klamath River
Coho Salmon Southern Oregon/ Northern California Coast ESU	Threatened	Threatened	Trinity River, Klamath River

Species or Population	Federal Status	State Status	Occurrence within Area of Analysis
Spring-run Chinook Salmon Upper Klamath-Trinity River ESU	Candidate	Species of Special Concern	Trinity River, Klamath River
Fall-/Late-Fall-run Chinook Salmon Central Valley ESU	None	Species of Special Concern	Clear Creek, Feather River, Sacramento River, American River, Stanislaus River, San Joaquin River, Delta and Suisun Marsh
Winter-run Chinook Salmon Sacramento River ESU	Endangered	Endangered	Sacramento River, Delta and Suisun Marsh
Spring-run Chinook Salmon Central Valley ESU	Threatened	Threatened	Clear Creek, Sacramento River, Feather River, American River, Delta and Suisun Marsh
Steelhead (winter- and summer-run) Klamath Mountains Province DPS	None	Species of Special Concern	Trinity River, Klamath River
Steelhead Central Valley DPS	Threatened	None	Clear Creek, Feather River, Sacramento River, American River, Stanislaus River, San Joaquin River, Delta and Suisun Marsh
Steelhead Central California Coast DPS	Threatened	None	San Francisco Bay region
Delta Smelt	Threatened	Endangered	Delta and Suisun Marsh
Longfin Smelt Bay Delta DPS	Candidate	Threatened	Delta and Suisun Marsh
Sacramento Splittail	None	Species of Special Concern	Feather River, American River, Sacramento River, Delta and Suisun Marsh, San Joaquin River
Hardhead	None	Species of Special Concern	Clear Creek, Feather River, Sacramento River, American River, Delta, Stanislaus River, San Joaquin River
Sacramento-San Joaquin Roach	None	Species of Special Concern	Clear Creek, Feather River, American River, Sacramento River, Delta, Stanislaus River, San Joaquin River

Species or Population	Federal Status	State Status	Occurrence within Area of Analysis
Striped Bass	None	None	Feather River, American River, Sacramento River, Delta and Suisun Marsh, Stanislaus River, San Joaquin River
American Shad	None	None	Trinity River, Feather River, American River, Sacramento River, Delta and Suisun Marsh, Stanislaus River, San Joaquin River
Black Bass (largemouth, smallmouth, spotted)	None	None	Trinity River, Feather River, American River, Sacramento River, Delta and Suisun Marsh, Stanislaus River, San Joaquin River
Killer Whale Southern Resident DPS	Endangered	None	Pacific Coast

Notes:
DPS = distinct population segment
ESU = evolutionarily significant unit

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