



MANAGEMENT OF THE CALIFORNIA STATE WATER PROJECT

BULLETIN 132-2019 | DECEMBER 2022



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Cover photo shows an aerial view of the recently completed Lake Oroville service spillway during Phase 2 of the recovery effort at the Butte County site in December 2018.

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Management of the California State Water Project

Covers Calendar Year 2018 Activities



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Gavin Newsom Governor
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Wade Crowfoot Secretary for Natural Resources
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Foreword

Bulletin 132-19, Management of the California State Water Project, continues the Bulletin 132 annual series begun in 1963. Bulletin 132-19 reports water supply planning, construction, financing, management, and operation activities of the State Water Project (SWP). It also discusses water supply and delivery, Delta resources and environmental issues, power resources, recreation, and financial analysis of the SWP.

Appendix B of Bulletin 132 contains data and computations used by the State of California to determine the SWP Contractors' Statements of Charges. Appendix B was previously printed and distributed to SWP Contractors to document and support calculation of contractors' annual charges.

The Bulletin discusses significant events and issues that affected SWP management and operations from January 1, 2018, through December 31, 2018. Appendix B includes data used to document the redetermination of water charges to be paid by SWP water contractors during calendar year 2020; the information is based on established data about the SWP, both known and projected, as of June 2019.

Please note that the water delivery figures listed are accurate at the time of this publication, but small volumes of water may be reclassified over time pursuant to long-term water supply contract provisions. If your research requires more current information than was available at the time of publication, please consult the most recent edition of Bulletin 132, or contact Department of Water Resources staff in the State Water Project Analysis Office.



Karla A. Nemeth
Director

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California Water Commission

The California Water Commission consists of nine members appointed by the Governor and confirmed by the Senate. Seven members are chosen for their expertise related to the control, storage, and beneficial use of water, and two are chosen for their knowledge of the environment. The commission advises the Director of the Department of Water Resources (DWR) on matters within DWR's jurisdiction, approves rules and regulations, and monitors and reports on the construction and operation of the State Water Project (SWP).

The roles and responsibilities of the California Water Commission are defined in the Water Code, Government Code, and Code of Civil Procedure.

The commission's SWP-specific responsibilities are to

- conduct an annual review of the construction and operation of the SWP and report to DWR and the Legislature with any recommendations (Water Code Section 165);
- hold public hearings on all additional facilities proposed to be added to the SWP and name any new facilities (Water Code Sections 161.5 and 166); and
- adopt a resolution of necessity, and give each affected person a venue to be heard, before DWR may commence an eminent domain proceeding (Code of Civil Procedure Section 1245.210).

The California Water Commission's Executive Officer is Joseph Yun, and the Commission members at the time of publication are the following:

Matthew Swanson, Chair

Fern Steiner, Vice-Chair

Samantha Arthur

Daniel Curtin

Kimberly Gallagher

Alexandre Makler

Sandra Matsumoto

Jose Solorio

Joe Yun

Acronyms and Abbreviations

A

af acre-foot/acre-feet
ANSI American National Standards Institute
AWWA American Water Works Association

B

Bay-Delta San Francisco Bay/Sacramento-San Joaquin Delta
Bay-Delta Plan Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary
BiOp biological opinion

C

CAISO California Independent System Operator
California State Parks California Department of Parks and Recreation
C.A.S.T. Catch A Special Thrill
CDPH California Department of Public Health
CEQA California Environmental Quality Act
CESA California Endangered Species Act
cfs cubic feet per second
CVP Central Valley Project
CWC California Water Code
CWF California WaterFix

D

D-1641 Water Right Decision 1641
DCA Design and Construction Authority
Delta Sacramento-San Joaquin Delta
DFW Department of Fish and Wildlife
DO dissolved oxygen
DOE Division of Engineering
DSC Delta Stewardship Council
DSOD Division of Safety of Dams
DSRB Director's Safety Review Board
DSS Dam Safety Services
DWR Department of Water Resources

E

EBRPD East Bay Regional Park District

EC electrical conductivity
EIR environmental impact report
EIS environmental impact statement
EPA U.S. Environmental Protection Agency
ESA Endangered Species Act

F

FERC Federal Energy Regulatory Commission
FRFH Feather River Fish Hatchery
FRP Fish Restoration Program

G

GHG greenhouse gas

L

LADPR Los Angeles County Department of Parks and Recreation
LADWP Los Angeles Department of Water and Power
LiDAR Light Detection and Ranging

M

maf million acre-feet
MeHg methylmercury
MIDS Morrow Island Distribution System
MW megawatt
MWh megawatt hour
MWT McCormack-Williamson Tract

N

NDOI Net Delta Outflow Index
NEPA National Environmental Policy Act
NERC North American Electric Reliability Corporation
NOAA Fisheries National Marine Fisheries Service

O

OMP&R operations, maintenance, power, and replacement
OM&R operations, maintenance, and replacement

P

PAO Public Affairs Office
PG&E Pacific Gas & Electric Company
PVC polyvinyl chloide

R

Reclamation U.S. Bureau of Reclamation
RFWE recreation and fish and wildlife enhancement
RM River Mile

S

Sacramento Valley 40-30-30 Index Sacramento Valley Water Year Hydrologic Classification
San Joaquin Valley 60-20-20 Index San Joaquin Valley Water Year Hydrologic Classification
SBA South Bay Aqueduct
SCE Southern California Edison
SDIP South Delta Improvements Program
SJR San Joaquin 4 Rivers
SJRRP San Joaquin River Restoration Program
SMPA Suisun Marsh Preservation Agreement
SMSCG Suisun Marsh Salinity Control Gates
SMUD Sacramento Municipal Utility District
SRR Sacramento River Region
State Water Board State Water Resources Control Board
Substitute Environmental Document Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan
SWP State Water Project

T

TLR Tulare Lake Region

U

USACE U.S. Army Corps of Engineers
USFWS U.S. Fish and Wildlife Service

W

WECC Western Electricity Coordinating Council
WQCP water quality control plan
WSPP Western Systems Power Pool

State Water Project Contractors

The State Water Project contractors are listed below, followed by shortened forms of their names that are used in Bulletin 132.

| Full Name | Abbreviation |
|--|---------------------|
| Alameda County Flood Control and Water Conservation District, Zone 7 | Alameda-Zone 7 |
| Alameda County Water District | Alameda County |
| Antelope Valley-East Kern Water Agency | AVEK |
| City of Yuba City | Yuba City |
| Coachella Valley Water District | Coachella |
| County of Butte | Butte |
| County of Kings | Kings |
| Crestline-Lake Arrowhead Water Agency | Crestline |
| Desert Water Agency | Desert |
| Dudley Ridge Water District | Dudley Ridge |
| Empire West Side Irrigation District | Empire |
| Kern County Water Agency | Kern |
| Littlerock Creek Irrigation District | Littlerock |
| The Metropolitan Water District of Southern California | Metropolitan |
| Mojave Water Agency | Mojave |
| Napa County Flood Control and Water Conservation District | Napa |
| Oak Flat Water District | Oak Flat |
| Palmdale Water District | Palmdale |
| Plumas County Flood Control and Water Conservation District | Plumas |
| San Bernardino Valley Municipal Water District | San Bernardino |
| San Gabriel Valley Municipal Water District | San Gabriel |
| San Gorgonio Pass Water Agency | San Gorgonio |
| San Luis Obispo County Flood Control and Water Conservation District | San Luis Obispo |
| Santa Barbara County Flood Control and Water Conservation District | Santa Barbara |
| Santa Clara Valley Water District | Santa Clara |
| Santa Clarita Valley Water Agency ¹ | Santa Clarita |
| Solano County Water Agency | Solano |
| Tulare Lake Basin Water Storage District | Tulare |
| Ventura County Watershed Protection District | Ventura |

¹ Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.



State Water Project Highlights

Crafton Hills Reservoir.

The annual Bulletin 132 series began in 1963 and reported the first deliveries of water by the new State Water Project (SWP). Bulletin 132-19, Management of the California State Water Project, continues this series as the fifty-seventh edition. It reports on SWP planning, construction, finance, management, and operations during calendar year 2018. The SWP is operated and maintained by the California Department of Water Resources (DWR).

The SWP is one of the world's largest water, power, and conveyance systems. In the past decade, it has conveyed an annual average of 2.9 million acre-feet (maf) of water. SWP facilities—pumping and power plants; reservoirs, lakes, and storage tanks; canals, tunnels, and pipelines—capture, store, and convey water to public water agencies and local water districts.

Oroville Dam Spillways Reconstruction Project

During 2017, Lake Oroville experienced increased reservoir levels as a result of record rainfall and runoff in the Feather River watershed. On February 7, 2017, the Oroville Dam service spillway chute slab failed. Flows were temporarily halted to inspect and assess the spillway damage.

On February 11, 2017, water flowed down the Oroville Dam emergency spillway for the first time in the life of the structure when Lake Oroville levels surpassed 901 feet, reaching a record high elevation 902.6 feet on February 12, 2017. The water flow over the emergency spillway resulted in erosive downstream damage. Emergency repairs began immediately and continued throughout 2017. Reconstruction and repairs for the service spillway chute and emergency spillway were completed by the end of 2018.

SWP Allocations

On October 1, 2017, SWP Contractors submitted initial requests for 2018 totaling 4.17 maf. DWR approved delivery of 0.63 maf on November 29, 2017, resulting in initial Table A amounts of 15 percent of SWP Contractor requests. DWR increased the 2018 Table A amounts to 1.46 maf, for a final allocation of 35 percent, on May 21, 2018.

Yearly Activities Summary

2018 Precipitation and Water Storage

Precipitation and Mountain Snowpack in Water Year 2017–2018

Water year 2017–2018 was a below average year for precipitation and mountain snowpack. This was a significant change from last year, which had above average precipitation and mountain snowpack. California received precipitation at 73 percent of average in water year 2017–2018 compared to 164, 105, and 75 percent of average in water years 2016–2017, 2015–2016, and 2014–2015, respectively. Overall, the annual percent of average precipitation followed a decreasing gradient from north to south. Central California experienced the greatest percent of average snowpack, while Southern California experienced the greatest percent of average runoff.

River Runoff

Statewide river runoff totaled 68 percent of average in the 2017–2018 water year. The monthly runoff totals for the Sacramento River Region, the San Joaquin 4 Rivers, the Tulare Lake Region, and the Feather River are shown in Table 7-4. As shown, the water

year runoff totals for these areas ranged from 68 to almost 82 percent of average.

Water Supply Indices

The Sacramento Valley 40-30-30 Index and the San Joaquin Valley 60-20-20 Index were both “below normal,” based on observed data for water year 2017–2018.

Water Year 2017–2018 Statewide Storage Totals

Monthly storage totals for the major Sierra Nevada reservoirs began at 107 percent of average reservoir storage. Storage increased to 116 percent of average in November and subsequently remained in the range of 99 to 111 percent for the remainder of the water year. In September, the 2018 water year ended at 99 percent of average.

2018 Storage Totals in Major SWP Reservoirs

End-of-year storage on December 31, 2018, in major SWP reservoirs and the State’s share of joint-use reservoirs was 2.5 maf or 47 percent of maximum storage, compared to 2.5 maf or 48 percent of maximum storage at the end of 2017. The average end-of-month total storage in major SWP reservoirs for 2018 was 3.0 maf.

Diversions from the Delta

In 2018, the SWP diverted 2,062,595 acre-feet (af) at Banks Pumping Plant. There was 38,657 af of water pumped for the Cross Valley Canal, and 33,122 af was wheeled for the Central Valley Project at Banks Pumping Plant by DWR during 2018.

Maximum daily Sacramento-San Joaquin Delta (Delta) exports occurred on August 8 at 22,515 af. Combined SWP and Central Valley Project monthly Delta exports in 2018 varied from a low of 165,989 af in May, to a high of 626,053 af in August. Delta exports totaled approximately 4.4 maf in 2018.

For more information, see Chapter 7, Water Supply.

2018 Water Deliveries

A total of 3,166,275 af of SWP and non-SWP water was delivered to 29 SWP Contractors and 26 other agencies. The SWP portion totaled 1,990,286 af, and the non-SWP portion totaled 1,074,932 af.

SWP

The 3,166,275 af delivered to SWP Contractors was categorized as follows:

- 980,200 af Table A water
- 116,463 af of transfers and exchanges of Table A water among SWP Contractors
- no delivery under Turn-Back Water Pool Program and Multiyear Water Pool Program water
- 466,636 af of 2018 carryover water
- 2,180 af of Article 21 water
- 113,657 af of water bank recovery
- 9,186 af of backup water delivery
- 2,997 af of settlement water
- 3,159 af of local water
- 17,191 af of permit water
- 237,682 af of other non-SWP programs

Non-SWP

The 1,175,989 af portion delivered to 26 non-SWP agencies was categorized accordingly:

- 879 af of short-term transfer agreements
- 5,655 af of SWP contracted supply
- no delivery under Article 21 transfer
- 996,330 af of regulated delivery of local supply
- 6 af for parks and recreation
- 447 af for fish and wildlife
- 122,529 af for Cross Valley Canal Contractors
- 27,678 af for Kern National Wildlife Refuge
- 1,023 af for annual contracts

For more information, see Chapter 8, Water Contracts and Deliveries.

Power Resources

Energy used at the 29 SWP pumping and generating plants totaled 5.73 million megawatt hours (MWh). To meet SWP energy needs, DWR purchased 2.15 million MWh of energy at a cost of \$67.89 million. This included: (1) 0.80 million MWh of short-term energy from five energy marketers at a cost of \$26.97 million; (2) 0.41 million MWh from four renewable energy electric utilities at a cost of \$17.85 million; and (3) 0.94 million MWh of long-term energy at a cost of \$23.08 million. Additional associated energy costs totaled \$213.57 million, including transmission costs. The total cost of energy-related costs for 2018 was \$281.47 million.

Greenhouse Gas Management

In 2018, DWR reported its calendar year 2017 pump load, generation, energy imports, and sulfur hexafluoride emissions to the California Air Resources Board. DWR's sulfur hexafluoride emissions were below the maximum allowable limit; however, because the allowable limit will be lower in future years, DWR continued to implement plans to further reduce its sulfur hexafluoride emissions. DWR also reported its 2017 greenhouse gas emissions to The Climate Registry.

For more information regarding DWR's management of greenhouse gas emissions, and its efforts to add renewable, greenhouse gas emission-free energy to the SWP's energy portfolio, see Chapter 9, Power Resources.

Hydropower License Planning and Compliance

DWR holds three hydropower licenses and two conduit exemptions issued by the Federal Energy Regulatory

Commission (FERC): Oroville Facilities, FERC Project No. 2100; South SWP Hydropower, FERC Project No. 2426; Pine Flat Transmission Line, FERC Project No. 2876; Alamo Powerplant Project, FERC Project No. 14579; and Mojave Siphon Powerplant Project, FERC Project No. 14580.

South SWP Hydropower

On May 15, 2018, DWR and Los Angeles Department of Water and Power submitted an initial study report for the South SWP Hydropower Project documenting relicensing study progress to date and any variances to the original study plan approved by FERC on June 14, 2017. Stakeholders reviewed and commented on the initial study report with suggestions for study modifications or new studies. On September 7, 2018, upon consideration of all stakeholder requests, FERC approved the final modified DWR and Los Angeles Department of Water and Power study plan for the South SWP Hydropower Project.

Upon completion of the relicensing effort, FERC will issue one new license to DWR and Los Angeles Department of Water and Power as co-licensees for the Warne and Castaic power plants, which will retain the name and number South SWP Hydropower, Project No. 2426, and one new license to DWR for the Devil Canyon Powerplant, to be assigned the name and number Devil Canyon Project, FERC Project No. 14797.

For more information about hydropower relicensing activities, see Chapter 9, Power Resources.

Long-term Purchase Agreements

DWR contracts for the energy output of five hydroelectric plants totaling 30 megawatts owned and operated by The Metropolitan Water District of Southern California. Effective November 1, 2017, through the contract termination date of September 30, 2019, DWR receives renewable energy

State Water Project Power Generation and Consumption in 2018

| Power Generation and Consumption | Megawatt Hours |
|--|-----------------------|
| Energy generation by SWP facilities | 2,551,901 |
| Energy sources and firm purchases under agreements and exchanges | 3,646,255 |
| | |
| Total Energy Available to the SWP | 6,198,156 |
| Energy sales | (471,188) |
| | |
| Net SWP Power Consumption¹ | 5,726,968 |

¹Totals may not sum as expected due to rounding.

credits bundled with energy from four of the five hydroelectric plants.

Financial Analysis

In 2018, DWR continued to pay bondholders as scheduled. The SWP was financially viable and was indirectly paid for by the approximately 27 million water users served by the project. Direct payment was through the 29 SWP Contractors. In 2018, the SWP handled approximately \$1.15 billion in revenues and \$1.15 billion in expenses. The 2018 Income Statement for the State Water Project sidebar presents a summary of the year's revenues and expenses. For detailed information, see Chapter 13, Financial Analysis.

Engineering, Construction, and Real Estate

In 2018, engineering, construction, and real estate work to enhance, expand, repair, and protect the SWP and other facilities within

the State continued. Significant projects included the seismic remediation of Perris Dam, the East Branch Extension Phase II projects, emergency and recovery efforts of Oroville service and emergency spillways, and habitat restoration projects.

DWR worked on 35 construction contracts in various SWP construction divisions in 2018. Contract projects included pipeline repair, control system upgrades, fire systems modernization, equipment refurbishments and upgrades, seismic upgrades of bridges, maintenance facility improvements at dam and reservoir sites, and the addition of new pumping units.

For more information, see Chapter 11, Engineering, Construction, and Real Estate.

Delta Resources and Environmental Issues

Invasive Species

During 2018, DWR removed all the red sesbania plants (*Sesbania punicea*) along the Thermalito Power Canal, Thermalito Forebay, and Thermalito Diversion Pool as part of an annual maintenance effort, which started in 2007. These areas are the upstream extent of the red sesbania population on the Feather River and are considered a high priority management area.

In 2018, DWR and two collaborating water agencies, Santa Clara Valley Water District and The Metropolitan Water District of Southern California, sampled for veligers at 16 locations in the SWP (see Bulletin 132-10). In addition, DWR staff are trained in quagga and zebra mussel identification and are instructed to look for mussels during regular field work and during routine facility maintenance activities. Mussel inspections also occurred when facilities were dewatered for maintenance and inspection purposes.

California WaterFix

On January 23, 2018, the California WaterFix addendum to the final environmental impact report (EIR) was released. This addendum was prepared summarizing the California WaterFix project modifications associated with refinements to the transmission line corridors proposed by the Sacramento Municipal Utility District (SMUD).

On July 17, 2018, DWR published the *California WaterFix Draft Supplemental EIR/Environmental Impact Statement* (EIS) evaluating the proposed changes to the conveyance facilities in compliance with the California Environmental Quality Act. On September 21, 2018, the U.S. Bureau of Reclamation issued the *California WaterFix Draft Supplemental EIR/EIS* for public review under the National Environmental Policy Act.

This document evaluates proposed changes to conveyance facilities previously evaluated in the December 2016 *Bay Delta Conservation Plan/California WaterFix Final EIR/EIS*.

Reclamation's issuance of the California WaterFix Draft Supplemental EIR/EIS was the same exact document as was issued by DWR with the addition of a transmittal document that relates the proposed changes to the alternatives previously analyzed in the 2016 final EIR/EIS. The public comment period for the draft supplemental EIR/EIS closed on November 5, 2018.

Fish Salvage Release Sites

During 2018, two new fish release sites, Little Baja and Manzo Ranch, approximately a half-mile apart, were completed on Sherman Island.

San Joaquin River Restoration Program

The 2018 water year was classified as Normal-Dry, as defined by the program's hydrograph; 157,600 af of water was released from Friant Dam to support fish and their habitat in the San Joaquin River. This marked the second straight year restoration flows were continuously released, connecting Friant Dam flows to the Delta. However, flow constraints due to seepage restrictions continue to limit flows below Sack Dam on the San Joaquin River (River Mile 182) and almost 125,000 af of unreleased restoration flows were sold back to federal water contractors for mostly irrigation uses.

In 2018, the San Joaquin River Restoration Program continued to release adult spring-run Chinook salmon broodstock: 120 males and 59 females were released into Reach 1 of the restoration area to assess spawning activity. A total of 42 redds were observed in 2018, the most redds in the river in more than 60 years. Natural returners of spring-run salmon were not actively monitored in 2018 due to the difficulty of monitoring from high flows in the river.

2018 Income Statement for the State Water Project

| Revenues | Thousands of Dollars |
|---|-----------------------------|
| Water Contract Payments | 1,211,879 |
| Revenue Bond Cover Adjustments | (54,379) |
| Rate Management Adjustments | (40,479) |
| Other Revenues | 35,237 |
| Total Operating Revenues | 1,152,258 |
| | |
| Expenses | |
| Project Operations, Maintenance, Power, and Replacement | 764,072 |
| Deposits to Reserves | 118,109 |
| Water Bond Principal | 158,070 |
| Water Bond Interest | 112,007 |
| Total Operating Expenses and Debt Service | 1,152,258 |
| Net System Revenues | 0 |

However, no natural returners were detected from the limited sampling with camera monitoring and carcass surveys.

More information is available on the San Joaquin River Restoration Program's website.

Recreation

The Oroville Dam spillway incident affected recreation use in the Lake Oroville State Recreation Area. To compensate for the loss of some recreation facilities, DWR improved other recreation facilities.

In 2018, SWP facilities supported an estimated 4.7 million recreation days of use (Table 12-1), up five percent from 2017's

4.5 million recreation days and the fourth highest on record. (The SWP supported the highest attendance at 4,818,900 in 2000.) Most of the SWP recreation use was concentrated at the major reservoirs, with approximately 42 percent of the recreation attendance occurring in the Southern Field Division, 36 percent occurring in the Oroville Field Division, and the remaining 22 percent distributed between the remaining three field divisions.

Lake Perris State Recreation Area

The Perris Dam Seismic Remediation Project, the first of the three Perris Dam seismic retrofit projects, was officially completed in April 2018. DWR began a controlled refilling

of the reservoir to its originally intended water levels that spring.

SWP Milestones through the Decades

50 Years Ago—1968

The official dedication ceremony of Oroville Dam and Lake Oroville was held, and electric power generation began at Oroville Dam.

Banks Pumping Plant was completed. With seven units, its pumping capacity was 6,400 cubic feet per second.

The construction of Del Valle Dam was completed in June 1968, and the dam was ready to control flooding of the Feather River and Alameda Creek at the end of 1968.

40 Years Ago—1978

The Kern River Intertie, was used to divert floodwaters into the California Aqueduct for the first time.

In January 1978, the joint conference committee adopted its final conference report and recommended 107 additional amendments to Senate Bill 346.

30 Years Ago—1988

Oroville Dam, the tallest and one of the largest earthen dams in the United States, celebrated the 20th anniversary of its dedication.

After more than two years of planning and negotiating, DWR purchased 19,900 acres of property adjacent to the Kern River, establishing the Kern Water Bank and the SWP groundwater recharge program.

20 Years Ago—1998

Water year 1997–98 was the fourth wet year in a row for Northern California. A strong El Niño in the eastern tropical Pacific Ocean

produced above-average precipitation in California.

In April 1998, the Oroville Relicensing Steering Committee was formed to help coordinate DWR's increasing preparatory activities for relicensing the Oroville Facilities.

The electric power utility industry was deregulated. DWR joined the deregulation realm and adapted to changes in markets, prices, and purchasing.

10 Years Ago—2008

In June 2008, Executive statewide Order S-06-08 was issued declaring a Statewide drought, which directed State agencies and departments to take immediate action to address the dry conditions.

DWR began geologic work examining the feasibility of enlarging Crafton Hills Reservoir. The proposed enlargement would increase the reservoir's storage capacity from 85 af to about 225 af.

In August 2008, DWR released the Draft Environmental Impact Report for the *State Water Project East Branch Extension Phase II*.



Chapter 1

The State Water Project

San Luis Reservoir.

This chapter primarily provides background on the State Water Project (SWP), including brief descriptions of SWP facilities, planning, construction, power operations, financing, contracting agencies, water deliveries, and the project's many uses and functions. It also provides a glimpse of California history, with a look at the processes and decisions that went into the creation of the largest State-built water project in the country.

Chapters 2 through 14 provide more detail on significant events and specific topics related to the management of the SWP in calendar year 2018. At the end of the Bulletin, Appendix B presents data and computations used to determine the SWP Contractors' Statements of Charges for 2020.

Information in this chapter was contributed by the Division of Operations and Maintenance and the State Water Project Analysis Office.

California's diverse geography contains both the highest and lowest elevations in the coterminous United States, with a resulting diversity of climate that ranges from desert to alpine to subtropical. In a typical year, some areas receive as little as two inches of rain, while others receive more than 100 inches. This diversity of geography and climate creates an intricate and constantly changing pattern of water supplies, which, in turn, creates enormous challenges in managing this vital resource.

The State Water Project

Like present-day Californians, the earliest settlers faced the problem of how best to conserve, control, and deliver water. Remains of aqueducts, canals, and dams are still found near some of California's original missions. The first recorded aqueduct, built in 1770 to serve the San Diego mission, was six miles long. In the early twentieth century, several cities, including San Francisco and Los Angeles, built aqueducts to convey water from the Sierra Nevada to other parts of the state.

In 1951, after many years of discussion and study, the Legislature authorized construction of a water storage and supply system to capture and store rainfall and snowmelt runoff in Northern California and deliver it to areas of need throughout the state. Eight years later, the Legislature passed the Burns-Porter Act, which provided the mechanism for obtaining funds necessary to construct the initial State Water Project (SWP) facilities. In 1960, California voters approved the issuance of \$1.75 billion in general obligation bonds, as authorized in the act, thereby securing funds to build the SWP. In 1962, the first water was delivered through a portion of the South Bay Aqueduct to two SWP Contractors in Alameda County.

Today, the SWP, built, operated, and managed by the Department of Water Resources (DWR), is the largest State-built, multipurpose, user-financed water project in the country. It was designed and built to deliver water, control flooding, generate power, provide recreational opportunities,

and enhance habitat for fish and wildlife. SWP water irrigates about 750,000 acres of farmland, mainly in the southern San Joaquin Valley. Approximately 27 million of California's estimated 39 million residents benefit from SWP water.

The water stored and delivered by the SWP originates as rainfall and snowmelt runoff in Northern and Central California's watersheds, where most of the state's precipitation occurs. The amounts of precipitation and snowpack, as well as the rate and amount of water from rainfall and snowmelt runoff, are used to determine how much water the SWP can deliver in any given year.

Since 1968, DWR has monitored and recorded annual precipitation and runoff for each water year, which begins on October 1 and ends on the following September 30.

Project Facilities

The SWP depends on a complex system of dams, reservoirs, power plants, pumping plants, canals, pipelines, and aqueducts to deliver water. Although initial water transportation facilities were essentially completed in 1973, other facilities have since been built, and still others are either under construction or are planned to be built, as needed.

The SWP facilities include 30 dams (29 of which impound water), 21 reservoirs, 30 pumping and generating plants, and approximately 700 miles of aqueducts and

pipelines. Figure 1-1 shows the names and locations of primary SWP storage and water delivery facilities.

Project Design

Water from rainfall and snowmelt runoff is stored in SWP conservation facilities and delivered via SWP transportation facilities to water agencies and districts in the Upper Feather River, North Bay, South Bay, San Joaquin, Central Coastal, and Southern California areas.

Three small reservoirs—Antelope Lake, Lake Davis, and Frenchman Lake—are the northernmost SWP facilities. Situated on Feather River tributaries in Plumas County, these lakes are used primarily for recreation. They also provide water to the City of Portola and local agencies that have water rights agreements with DWR.

Downstream from these lakes lies Lake Oroville, which conserves water from the Feather River watershed. Created by Oroville Dam, the tallest earthfill dam in the Western Hemisphere, Lake Oroville is the project's largest storage facility with a capacity of approximately 3.5 million acre-feet (af).

Releases from Lake Oroville flow down the Feather River into the Sacramento River, which drains the northern portion of California's great Central Valley. The Sacramento and San Joaquin rivers flow into the Sacramento-San Joaquin Delta (Delta), comprising 738,000 acres of land interlaced with channels that receive runoff from 40 percent of the state's land area. The SWP, federal Central Valley Project, and local agencies all divert water from the Delta.

From the northern Delta, Barker Slough Pumping Plant diverts water for delivery to Napa and Solano counties through the North Bay Aqueduct, which was completed in 1988. Near Byron, in the southern Delta, the SWP diverts water into Clifton Court Forebay for

delivery south of the Delta. Banks Pumping Plant lifts water from Clifton Court Forebay into the California Aqueduct, which flows to Bethany Reservoir. From Bethany Reservoir, the South Bay Pumping Plant lifts water into the South Bay Aqueduct to supply Alameda and Santa Clara counties. The South Bay Aqueduct provided initial deliveries in 1962 and has been fully operational since 1965.

Most of the water delivered to Bethany Reservoir from Banks Pumping Plant flows into the California Aqueduct. This 443-mile-long main aqueduct conveys water to the agricultural lands of the San Joaquin Valley and to the urban regions of Southern California.

The California Aqueduct winds along the west side of the San Joaquin Valley. It transports water to O'Neill Forebay, Gianelli Pumping-Generating Plant, and San Luis Reservoir. San Luis Reservoir has a storage capacity of more than 2 million af and is jointly owned by DWR and the Bureau of Reclamation. DWR's share of gross storage in the reservoir is 1,062,183 af. Generally, water is pumped into San Luis Reservoir from late fall through early spring, where it is temporarily stored for release back to the California Aqueduct to meet summertime demands of SWP and Central Valley Project water contractors.

SWP water not stored in San Luis Reservoir and water released from San Luis flows south through the San Luis Canal, a portion of the California Aqueduct jointly owned by DWR and the Bureau of Reclamation.

As the water flows through the San Joaquin Valley, numerous turnouts convey it to farmlands within the service areas of the SWP and Central Valley Project. Along its journey, this water is lifted more than 1,000 feet by four pumping plants—Dos Amigos, Buena Vista, Teerink, and Chrisman—before reaching the foot of the Tehachapi Mountains.



Figure 1-1 Names and Locations of Primary SWP Storage and Water Delivery Facilities, December 31, 2018

In the southern San Joaquin Valley, near Kettleman City, Phase I of the Coastal Branch Aqueduct serves agricultural areas west of the California Aqueduct. In August 1997, completion of Phase II extended the Coastal Branch Aqueduct to serve municipal and industrial water users in San Luis Obispo and Santa Barbara counties.

The remaining water conveyed by the California Aqueduct is delivered to Southern California, home to roughly two-thirds of California's population. Before it can be delivered, the water must first cross the Tehachapi Mountains. Fourteen 80,000-horsepower pumps at Edmonston Pumping Plant, situated at the foot of the mountains, raise the water 1,926 feet—the highest single lift of any pumping plant in the world. The water enters 8.5 miles of tunnels and siphons as it flows into Antelope Valley, where the California Aqueduct divides into the East Branch and the West Branch.

The East Branch carries water through Alamo Powerplant, Pearblossom Pumping Plant, and Mojave Siphon Powerplant into Silverwood Lake in the San Bernardino Mountains. From Silverwood Lake, water flows through the San Bernardino Tunnel to Devil Canyon Powerplant. Water continues down the East Branch through the Santa Ana Pipeline to Lake Perris, the southernmost SWP reservoir.

The East Branch Extension is a nearly 33-mile pipeline linking parts of service areas for San Bernardino Valley Municipal Water District and San Gorgonio Pass Water Agency to the California Aqueduct. The East Branch Extension, Phase I, carries water from Devil Canyon Powerplant Afterbay to Cherry Valley, bringing water to Yucaipa, Calimesa, Beaumont, Banning, and other communities. Phase II expands deliveries in these service areas and includes two new SWP facilities, Citrus Reservoir and Citrus Pump Station.

Water in the West Branch flows through Oso Pumping Plant, Quail Lake, Peace Valley Pipeline, and Warne Powerplant into Pyramid Lake in Los Angeles County. From there it flows through the Angeles Tunnel, Castaic Powerplant, Elderberry Forebay, and into Castaic Lake, terminus of the West Branch. Castaic Powerplant is operated by the Los Angeles Department of Water and Power.

The energy needed to operate the SWP, the largest single user of electrical power in California, comes from a combination of its own hydroelectric generating plants and power purchased from and exchanged with other utilities. The project's eight hydroelectric power plants, including four pumping-generating plants, produce enough electricity in a normal year to supply about two-thirds of the SWP's necessary operating power.

Tables 1-1 through 1-5 present statistical information about primary storage facilities, primary dams, pumping plants, power plants, and aqueducts.

Methods of Financing

Project facilities have been constructed with several general types of financing: general obligation bonds and tideland oil revenues (under the Burns-Porter Act, which was approved by the Legislature in 1959, and the bond issue approved by voters in 1960); revenue bonds; and capital resources revenues. Repayment of these funds, and the operation, maintenance, power, and replacement costs associated with water supply, are paid by the 29 SWP Contractors that have contracts with DWR for the delivery of SWP water.

For more information on financing, see Chapter 13, Financial Analysis.

Table 1-1 Physical Characteristics of Primary Storage Facilities

| Facility | Gross Capacity (acre-feet) | Surface Area (acres) | Shoreline (miles) |
|---------------------------------|-----------------------------------|-----------------------------|--------------------------|
| Antelope Lake | 22,600 | 930 | 15 |
| Frenchman Lake | 55,500 | 1,580 | 21 |
| Lake Davis | 84,400 | 4,030 | 32 |
| Lake Oroville | 3,537,600 | 15,810 | 167 |
| Thermalito Diversion Pool | 13,400 | 320 | 10 |
| Thermalito Forebay | 11,800 | 630 | 10 |
| Thermalito Afterbay | 57,000 | 4,300 | 26 |
| Clifton Court Forebay | 31,300 | 2,180 | 8 |
| Bethany Reservoir | 5,100 | 180 | 6 |
| Lake Del Valle | 77,100 | 1,060 | 16 |
| San Luis Reservoir ¹ | 2,027,800 | 12,520 | 65 |
| O'Neill Forebay ² | 56,400 | 2,700 | 12 |
| Los Banos Reservoir | 34,600 | 620 | 12 |
| Little Panoche Reservoir | 5,600 | 190 | 6 |
| Quail Lake | 7,600 | 290 | 3 |
| Pyramid Lake | 171,200 | 1,300 | 21 |
| Elderberry Forebay | 32,500 | 500 | 7 |
| Castaic Lake | 323,700 | 2,240 | 29 |
| Silverwood Lake | 75,000 | 980 | 13 |
| Lake Perris | 131,500 | 2,320 | 10 |
| Crafton Hills Reservoir | 307 | 13 | 0 |
| Citrus Reservoir | 560 | 17 | 0 |

¹ DWR's share of storage in San Luis Reservoir, jointly owned with the Bureau of Reclamation, is 1,062,183 acre-feet.

² DWR's share of storage in O'Neill Forebay is 29,500 acre-feet.

SWP Contractors

From 1963 through 1967, 32 agencies or districts signed Water Supply Contracts with DWR. However, in 1965, the City of West Covina was annexed to The Metropolitan Water District of Southern California, and in 1981, Hacienda Water District was assigned to Tulare Lake Basin Water Storage District. On January 1, 1992, Castaic Lake Water Agency assumed all rights and obligations granted to Devil's Den Water District in accordance with its Water Supply Contract; Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018. Therefore, only 29 SWP

Contractors have contracts with DWR as of December 31, 2018.

The contracts are in effect for the longest of the following periods:

- the project repayment period, which extends to December 31, 2035;
- 75 years from the effective date of the contract; or
- the period ending with the latest maturity date of any bond used to finance the construction costs of project facilities.

The contracts initially provided for a combined maximum annual Table A amount of 4,230,000 af of the water supply. As a result of contract amendments in the 1980s

Table 1-2 Physical Characteristics of Primary Dams

| Facility | Crest Elevation (feet) | Structural Height (feet) | Crest Length (feet) | Structural Volume (thousand cubic yards) |
|-------------------------------------|-----------------------------------|---|--------------------------------|---|
| Antelope | 5,025 | 120 | 1,320 | 380 |
| Frenchman | 5,607 | 139 | 720 | 537 |
| Grizzly Valley | 5,785 | 132 | 800 | 253 |
| Oroville | 922 | 770 | 6,920 | 80,000 |
| Thermalito Diversion | 233 | 143 | 1,300 | 154 |
| Thermalito Forebay | 231 | 91 | 15,900 | 1,840 |
| Thermalito Afterbay | 142 | 39 | 42,000 | 5,020 |
| Clifton Court Forebay | 14 | 30 | 36,500 | 2,440 |
| Bethany | 250 | 121 | 3,940 | 1,400 |
| Del Valle | 773 | 235 | 880 | 4,150 |
| Sisk | 544 | 385 | 18,600 | 77,664 |
| O'Neill Forebay | 233 | 88 | 14,300 | 2,877 |
| Los Banos Detention | 384 | 167 | 1,370 | 2,100 |
| Little Panoche Detention | 676 | 152 | 1,440 | 1,210 |
| Pyramid | 2,606 | 400 | 1,090 | 6,860 |
| Elderberry Forebay | 1,550 | 200 | 1,990 | 6,000 |
| Castaic | 1,535 | 425 | 4,900 | 46,000 |
| Cedar Springs | 3,378 | 249 | 2,230 | 7,600 |
| Perris | 1,600 | 128 | 11,600 | 20,000 |
| Crafton Hills | 2,932 | 95 | 500 | 144 |
| Crafton Hills Reservoir Enlargement | 2,932 | 95 | 565 | 152 |

and the Monterey Amendment, the current combined maximum annual Table A amount by 2016 totals 4,172,786 af (see Appendix B, Table B-4 for details).

Figure 1-2 (located at the end of the chapter) shows the name and location of each SWP Contractor and the first year of SWP delivery service for each. Table 1-6 (also at the end of the chapter) presents information about each SWP Contractor.

For more information about existing SWP Water Supply Contracts and annual water deliveries, see Chapter 8, Water Contracts and Deliveries.

Future Planning and Construction

The planning, design, and construction of SWP facilities were based on studies and analyses that projected SWP Contractors' annual water delivery needs. To meet these projected needs, water conservation reservoirs, storage facilities, and delivery facilities were planned to be constructed in stages as demands for water increased. Lake Oroville and San Luis Reservoir were the first SWP conservation reservoir facilities constructed. Additional facilities were scheduled to meet increased demands. It was anticipated that population growth in delivery service areas and water supply areas

Table 1-3 Pumping Plant Characteristics

| Facility | Number of Units | Normal Static Head (feet) | Total Flow at Design Head (cubic feet per second) | Total Motor Rating (horsepower) |
|---------------------------|----------------------|------------------------------|---|------------------------------------|
| Hyatt | 3 (p-g) ¹ | 500–625 | 5,610 | 519,000 |
| Robie Thermalito | 3 (p-g) ¹ | 85–102 | 9,120 | 120,000 |
| Barker Slough | 9 | 95–120 | 228 | 4,800 |
| Cordelia | 11 | 138 | | |
| Banks | 11 | 236–252 | 10,670 | 333,000 |
| South Bay | 9 | 566 | 330 | 27,750 |
| Del Valle | 4 | 0–38 | 120 | 1,000 |
| Gianelli | 8 (p-g) ¹ | 99–327 | 11,000 | 504,000 |
| Dos Amigos | 6 | 107–125 | 15,450 | 240,000 |
| Las Perillas | 6 | 55 | 461 | 4,050 |
| Badger Hill | 6 | 151 | 454 | 11,750 |
| Devil's Den ² | 6 | 521 | 134 | 10,500 |
| Bluestone ² | 6 | 484 | 134 | 10,500 |
| Polonio Pass ² | 6 | 533 | 134 | 10,500 |
| Buena Vista ² | 10 | 205 | 5,405 | 144,500 |
| Teerink ² | 9 | 233 | 5,445 | 150,000 |
| Chrisman ² | 9 | 518 | 4,995 | 330,000 |
| Edmonston ² | 14 | 1,926 | 4,480 | 1,120,000 |
| Oso | 8 | 231 | 3,252 | 93,800 |
| Pearblossom | 9 | 540 | 2,575 | 203,200 |
| Greenspot | 5 | 382 | 70 | 5,400 |
| Citrus | 8 | 665 | 160 | 18,000 |
| Crafton Hills | 7 | 613 | 135 | 13,500 |
| Cherry Valley | 4 | 75 | 52 | 1,000 |

¹ The term p-g indicates pumping-generating units.² These plants have one unit in reserve.

of origin would influence the final schedule for SWP facilities.

Demands for SWP water are expected to increase as California's population continues to grow and as the effects of climate change affect the State's water resources. Increasingly, issues such as escalating costs, environmental concerns, and increased non-SWP demand for limited water supplies have become important factors affecting the planning and construction of new facilities.

In response to changes brought about by population growth, environmental concerns, climate change, differences in local water use, local water conservation programs, conjunctive-use programs, and other factors, DWR continues to plan, design, and construct transportation and power-producing facilities for the SWP.

Because of changes in water management policy, DWR continues to reassess plans for additional facilities that will incorporate increased environmental safeguards, while also increasing SWP delivery yield.

Table 1-4 Power Plant Characteristics, by Facility

| Hydroelectric Facility | Number of Units | Normal Static Head (feet) | Total Flow at Design Head (cubic feet per second) | Net Dependable Capacity (megawatts) | Nameplate Capacity (megawatts) |
|-------------------------------|------------------------|----------------------------------|--|--|---------------------------------------|
| Hyatt | 6 (3 p-g) ¹ | 410–676 | 16,950 | 645 | 645 |
| Thermalito Diversion Dam | 1 | 63–77 | 615 | 3 | 3 |
| Robie Thermalito | 4 (3 p-g) ¹ | 85–102 | 17,400 | 114 | 114 |
| Gianelli (total) | 8 p-g ¹ | 99–327 | 16,960 | 363 | 424 |
| Warne | 2 | 719–739 | 1,600 | 67 | 74 |
| Castaic ² | 7 (6 p-g) ¹ | 900–1,050 | 20,820 | 1,128 | 1,254 |
| Alamo | 1 | 115–141 | 1,740 | 15 | 17 |
| Mojave Siphon | 3 | 81–136 | 2,880 | 29 | 30 |
| Devil Canyon | 4 | 1,406 | 2,940 | 235 | 276 |

¹ The term p-g indicates pumping-generating units.² Castaic Pumping-Generating Plant is owned and operated by the Los Angeles Department of Water and Power.**Table 1-5 Total Miles of Aqueducts**

| Facility | Channel and Reservoir | Canal and Siphon | Pipeline and Discharge Line | Tunnel | Total |
|---|------------------------------|-------------------------|------------------------------------|---------------|--------------|
| Grizzly Valley Pipeline | 0.0 | 0.0 | 6.0 | 0.0 | 6.0 |
| Thermalito Power Canal and Tail Channel | 1.5 | 1.9 | 0.0 | 0.0 | 3.4 |
| North Bay Aqueduct | 0.0 | 0.0 | 27.6 | 0.0 | 27.6 |
| South Bay Aqueduct (including Del Valle Branch) | 0.3 | 10.7 | 31.9 | 1.7 | 44.6 |
| <i>Subtotal</i> | 1.8 | 12.6 | 65.5 | 1.7 | 81.6 |
| California Aqueduct | | | | | |
| Clifton Court Forebay to O'Neill Forebay | 4.5 | 61.9 | 0.3 | 0.0 | 66.7 |
| O'Neill Forebay to Kettleman City | 4.1 | 101.4 | 0.2 | 0.0 | 105.7 |
| Kettleman City to Edmonston Pumping Plant | 0.0 | 120.1 | 0.9 | 0.0 | 121.0 |
| Edmonston Pumping Plant to Tehachapi Afterbay | 0.0 | 0.2 | 1.9 | 7.9 | 10.0 |
| Tehachapi Afterbay to Lake Perris | 4.0 | 97.8 | 34.3 | 3.9 | 140.0 |
| <i>Subtotal</i> | 12.6 | 381.4 | 37.6 | 11.8 | 443.4 |
| California Aqueduct Branches | | | | | |
| Coastal Branch | 0.0 | 14.1 | 98.7 | 2.7 | 115.5 |
| West Branch | 9.7 | 9.3 | 5.8 | 7.1 | 31.9 |
| East Branch Extension | | | | | |
| Devil Canyon Powerplant to Greenspot Pump Station | 0.0 | 0.0 | 16.2 | 0.0 | 16.2 |
| Greenspot Pump Station to Noble Creek Terminus | 0.0 | 0.0 | 16.4 | 0.0 | 16.4 |
| <i>Subtotal</i> | 9.7 | 23.4 | 137.1 | 9.8 | 180.0 |
| Total | 24.1 | 417.4 | 240.2 | 23.3 | 705.0 |

Developing these involves plans involves the time-consuming process of finding technically suitable projects and satisfying many complex and dynamic environmental procedures, laws, and regulations.

For more information about current SWP planning and construction, see Chapter 11, Engineering, Construction, and Real Estate. Information about prior construction activities can be found in previous issues of Bulletin 132.

Climate Change

Climate change has potentially serious effects on water resources. Temperature increases may affect water demand and aquatic ecosystems. Projected increases in air temperature may lead to changes in the amount, timing, and form of precipitation—rain or snow; the volume and timing of runoff; the water quality in the Delta due to sea-level rise; and the amount of irrigation water needed due to modified evapotranspiration rates.

The ability of the SWP and Central Valley Project to meet the water demands of their customers and the environment depends on the accumulation of mountain snowpack and subsequent spring and summer snowmelt runoff. A warming climate may reduce this natural water storage mechanism.

To address these concerns, DWR and the Bureau of Reclamation are coordinating with federal, State, and local agencies and nongovernmental organizations to provide qualitative and quantitative assessments of the potential risks and effects of climate change on California's water resources. This multiagency coordination effort will also update decision makers on climate change impacts, the ability of existing facilities to accommodate these impacts, and available mitigation measures.

For more information on climate change, see Chapter 3, Environmental Programs.

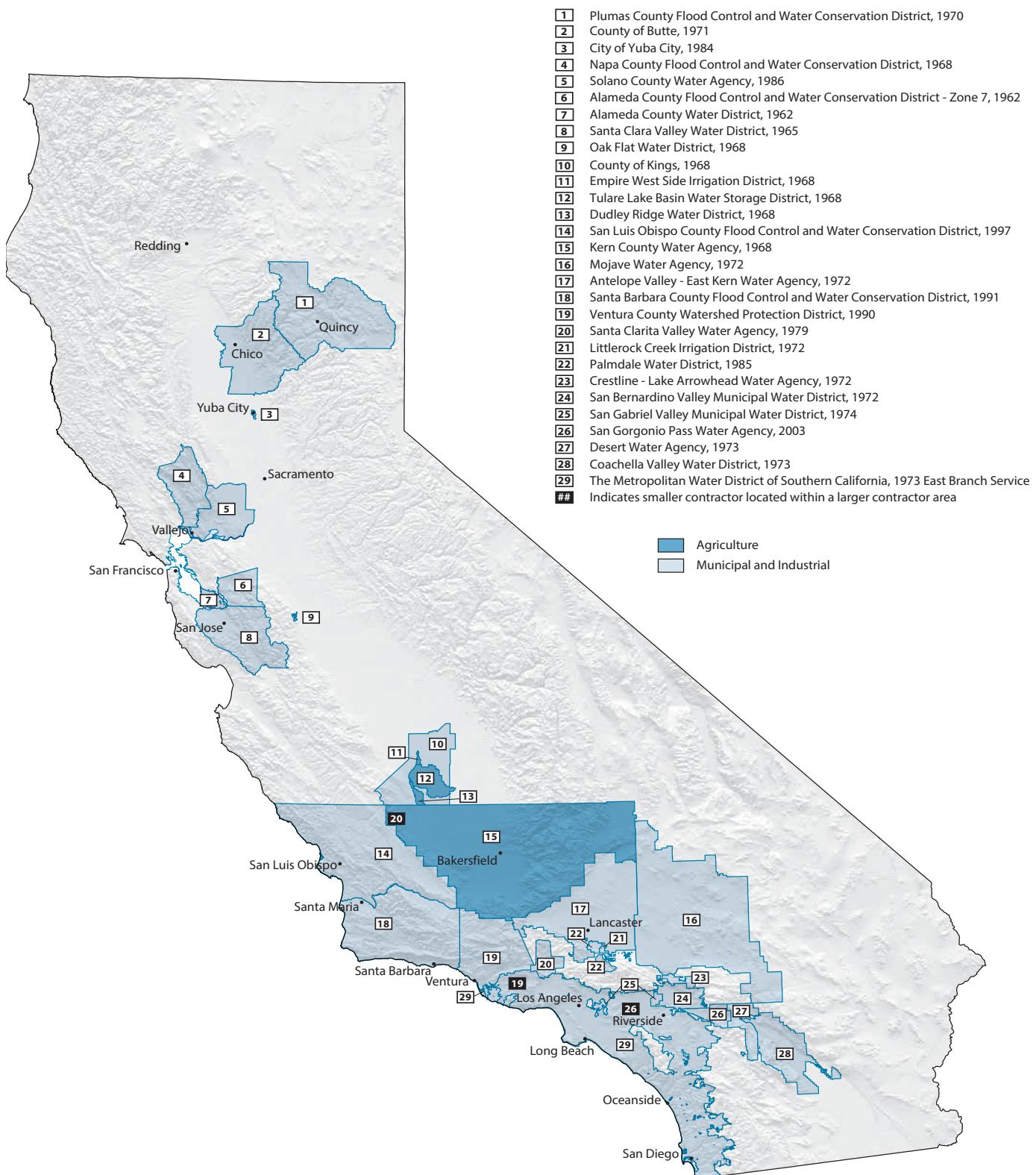


Figure 1-2 Names, Locations, and First Year of Service of SWP Contractors, December 31, 2018

Table 1-6 SWP Contractors, by Area, as of December 31, 2018

| Contractor | Cumulative Deliveries (acre-feet)¹ | Annual Table A (acre-feet) | Payments (in dollars)³ | Gross Area (acres) | Assessed Valuation (in dollars)² | Estimated Population |
|--|--|-----------------------------------|--|-------------------------------|--|-----------------------------|
| Upper Feather River Area | | | | | | |
| City of Yuba City | 52,968 | 9,600 | 10,081,039 | 10,133 | 4,713,051,974 | 71,070 |
| County of Butte | 125,180 | 27,500 | 15,375,128 | 1,049,280 | 22,349,533,559 | 227,621 |
| Plumas County Flood Control and WCD | 13,495 | 2,700 | 3,114,751 | 1,676,056 ^a | 2,401,991,425 | 19,517 |
| Subtotal | 191,643 | 39,800 | 28,570,918 | 2,735,469 | 29,464,576,958 | 318,208 |
| North Bay Area | | | | | | |
| Napa County Flood Control and WCD | 376,825 | 29,025 | 158,201,152 | 510,010 | 37,426,336,858 | 139,099 |
| Solano County Water Agency | 957,613 | 47,756 | 211,195,701 | 581,760 | 52,336,931,797 | 445,458 |
| Subtotal | 1,334,438 | 76,781 | 369,396,853 | 1,091,770 | 89,763,268,655 | 584,557 |
| South Bay Area | | | | | | |
| Alameda County Flood Control and WCD-Zone 7 | 1,798,639 | 80,619 | 446,207,870 | 275,900 | 61,116,475,735 | 261,261 |
| Alameda County Water District | 1,414,376 | 42,000 | 171,104,954 | 66,943 | 72,179,061,738 | 356,000 |
| Santa Clara Valley Water District | 4,565,289 | 100,000 | 523,237,974 | 835,098 | 445,800,903,298 | 1,938,153 |
| Subtotal | 7,778,304 | 222,619 | 1,140,550,798 | 1,177,941 | 579,096,440,771 | 2,555,414 |
| San Joaquin Valley Area | | | | | | |
| County of Kings | 174,693 | 9,305 | 14,321,816 | 893,300 | 9,125,193,927 | 149,942 |
| Dudley Ridge Water District | 2,523,846 | 45,350 | 119,946,334 | 37,600 | 141,772,718 | 36 |
| Empire West Side Irrigation District | 128,570 | 3,000 | 6,079,476 | 7,500 | b | 12 |
| Kern County Water Agency | 39,974,016 | 982,730 | 2,700,282,758 | 5,224,000 | 91,300,000,000 | 893,119 |
| Oak Flat Water District | 221,202 | 5,700 | 10,117,377 | 4,500 | b | 10 |
| Tulare Lake Basin Water Storage District | 5,096,417 | 87,471 | 228,721,573 | 189,519 | 194,000,000 | 23 |
| Santa Clarita Valley Water Agency ⁴ | 409,606 | | | 8,700 ^c | 4,532,936 | 0 |
| Subtotal | 48,528,350 | 1,133,556 | 3,079,469,337 | 6,365,119 | 100,765,499,581 | 1,043,142 |
| Central Coastal Area | | | | | | |
| San Luis Obispo County Flood Control and WCD | 91,441 | 25,000 | 122,256,900 | 2,122,240 | 45,457,307,011 | 279,083 |
| Santa Barbara County Flood Control and WCD | 474,971 | 45,486 | 829,437,218 | 193,391 | 35,807,064,847 | 377,338 |
| Subtotal | 566,412 | 70,486 | 951,694,118 | 2,315,631 | 81,264,371,858 | 656,421 |
| Southern California Area | | | | | | |
| Antelope Valley-East Kern Water Agency | 2,334,938 | 144,844 | 700,566,399 | 1,525,120 | 27,976,622,749 | 401,610 |
| Coachella Valley Water District | 1,716,446 | 138,350 | 749,117,090 | 639,857 | 61,209,789,634 | 290,000 |
| Crestline-Lake Arrowhead Water Agency | 67,708 | 5,800 | 35,910,946 | 54,900 | 2,755,274,108 | 29,000 |
| Desert Water Agency | 1,383,445 | 55,750 | 393,156,882 | 208,000 | 15,088,220,829 | 64,000 |
| Little Rock Creek Irrigation District | 21,066 | 2,300 | 8,742,679 | 10,355 | 414,200,000 | 2,900 |
| The Metropolitan WD of Southern California | 39,979,392 | 1,911,500 | 13,654,132,124 | 3,316,072 ^d | 2,901,129,926,343 | 18,963,000 |
| Mojave Water Agency | 500,898 | 85,800 | 401,999,081 | 3,136,000 | 35,761,893,294 | 480,941 |
| Palmdale Water District | 305,721 | 21,300 | 111,203,098 | 119,680 | 1,414,494,581 | 114,533 |
| San Bernardino Valley Municipal Water District | 1,158,875 | 102,600 | 883,682,999 | 225,577 | 48,717,699,229 | 661,546 |
| San Gabriel Valley Municipal Water District | 488,560 | 28,800 | 213,221,059 | 18,297 | 16,850,589,307 | 197,636 |
| San Gorgonio Pass Water Agency | 96,621 | 17,300 | 246,269,797 | 140,800 | 9,382,528,227 | 91,260 |
| Santa Clarita Valley Water Agency ⁴ | 1,261,545 | 95,200 | 464,052,571 | 125,057 ^c | 43,409,583,907 | 282,460 |
| Ventura County Watershed Protection District | 94,156 | 20,000 | 86,912,502 | 308,252 | 50,463,927,012 | 472,776 |
| Subtotal | 49,409,371 | 2,629,544 | 17,948,967,227 | 9,827,967 | 3,214,574,749,220 | 22,051,662 |
| Total | 107,808,518 | 4,172,786 | 23,518,649,251 | 23,513,897^e | 4,094,928,907,043 | 27,209,404 |

¹ All water delivered to SWP Contractors, including carryover, Article 21, surplus, unscheduled, exchange, permit, purchased, local, and non-SWP water.² Statutes of 1978, Chapter 1207, added Section 135 to the Revenue and Taxation Code, requiring assessment at 100 percent of full value for the 1981–1982 fiscal year and fiscal years thereafter.³ Includes all payments pursuant to the repayment provisions of the Water Supply Contracts. Transportation and Conservation Replacement Accounting System payments are also included in this table.⁴ Castaic Lake Water Agency's SWP Water Supply Contact was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.^a Total of all Plumas County Flood Control and Water Conservation District, including Last Chance Creek Water District.^b Assessed valuation not available on an agency area breakdown.^c Santa Clarita Valley Water Agency (Southern California Area) includes land in the San Joaquin Valley Area formerly known as Devil's Den Water District.^d Acreage for Metropolitan includes Calleguas Municipal Water District, which is common to Metropolitan and Ventura County Watershed Protection District.^e Includes duplicate values. Portions of some contractors' gross acreage fall within two contractors' geographic areas and are included in each contractor's total.

WD = Water District; WCD = Water Conservation District.

Dudley, Empire, Oak Flat, and Tulare are agricultural contractors. Kern is an agricultural and a municipal and industrial contractor.



Chapter 2

Delta Resources

Snow geese (*Chen caerulescens*) in a field on Twitchell Island.

Significant Events in 2018

Two new fish release sites, Little Baja and Manzo Ranch, approximately a half-mile apart, were completed in 2018 on Sherman Island. This will allow more time between releases at each site.

The Delta Flood Emergency Management Plan was completed in December 2018. The plan supports the emergency preparedness efforts of the Department of Water Resources (DWR) in the Sacramento San-Joaquin Delta (Delta), describes DWR actions during a flood emergency response, and helps DWR flood emergency managers in making critical decisions during recovery.

Information for this chapter was contributed by the Division of Integrated Regional Water Management, the Bay-Delta Office, the Division of Flood Management, and the Division of Operations and Maintenance.

The Sacramento-San Joaquin Delta (Delta) and Suisun Marsh encompass about 840,000 acres of tidal influenced land at the confluence of the Sacramento and San Joaquin rivers (see Figure 2-1). Collectively, the Delta and Suisun Marsh are part of the largest estuary on the West Coast of the United States. The Delta is a major source of water for millions of Californians. Since the 1950s, the Department of Water Resources (DWR) and other State and federal agencies have developed and implemented numerous programs to manage the Delta.

Delta Water Management Programs

Future water deliveries to millions of Californians throughout the state will be affected by many factors, including two significant changes: Delta pumping restrictions and climate change. Ongoing planning activities and regulatory actions continue to influence DWR activities in the Delta. These include the California WaterFix and California EcoRestore, the Delta Stewardship Council's (DSC) *Delta Plan*, the State Water Resources Control Board's water rights decisions, and federal biological opinions (BiOps).

California WaterFix

In April 2015, the Governor announced a major change for the project known as the Bay Delta Conservation Plan. A new preferred alternative (Alternative 4A) would not complete the Bay Delta Conservation Plan as a Natural Community Conservation Plan, but instead construct water conveyance facilities through an initiative called California WaterFix. A parallel effort called California EcoRestore proposes to implement habitat restoration actions in the Delta. California WaterFix is being developed in compliance with the federal Endangered Species Act.

For more information regarding California WaterFix, see Chapter 3, Environmental Programs.

Delta Plan

The *Delta Plan*, adopted by the DSC in May 2013 in compliance with the Delta Reform Act of 2009, is a comprehensive, long-term management plan for the Delta. For more information, see the sidebar, Delta Stewardship Council. Additional information about the *Delta Plan* is also available on the DSC's website.

State Water Project Delta Compliance Program

The State Water Project (SWP) and Central Valley Project (CVP) obtained take authorization for the federal Endangered Species Act and California Endangered Species Act listed fish species for coordinated operations in the Delta through a U.S. Fish and Wildlife Service BiOp for delta smelt (*Hypomesus transpacificus*) in December 2008; a Department of Fish and Wildlife (DFW) incidental take permit for longfin smelt (*Spirinchus thaleichthys*) in February 2009; and a National Marine Fisheries Service (NOAA Fisheries) BiOp for steelhead (*Oncorhynchus mykiss*), Chinook salmon (*Oncorhynchus tshawytscha*), and green sturgeon (*Acipenser medirostris*) in June 2009. Some of the requirements in these documents were implemented immediately, while others needed development of studies and projects before being implemented.

In 2018, efforts continued under the SWP Delta Compliance Program to develop and

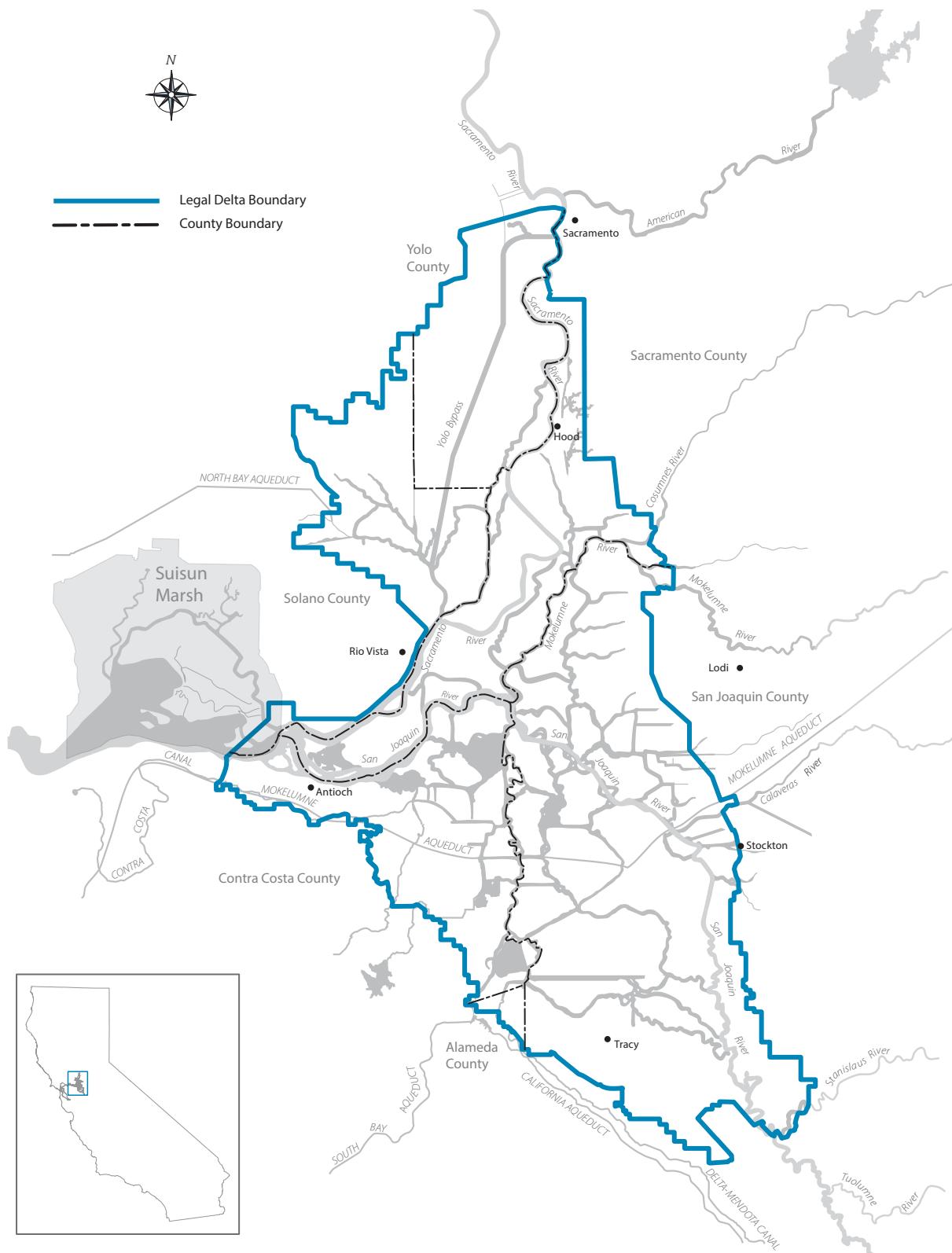


Figure 2-1 The Sacramento-San Joaquin Delta

Delta Stewardship Council

Created by the Legislature under the Sacramento-San Joaquin Delta Reform Act of 2009 (Delta Reform Act), the Delta Stewardship Council (DSC) is an independent agency of the State of California composed of members who represent different parts of the State and offer diverse expertise in fields such as agriculture, science, the environment, and public service. Of the seven members, four are appointed by the Governor, one each is appointed by the Senate and by the Assembly, and the seventh is the Chair of the Delta Protection Commission. The council is the successor to the California Bay-Delta Authority and assumes all of its administrative rights, abilities, obligations, and duties.

The *Delta Plan* was adopted by the DSC on May 16, 2013. It became effective with legally enforceable regulations on September 1, 2013. The *Delta Plan* is a comprehensive, long-term management plan for the Sacramento-San Joaquin Delta. It establishes a set of integrated policies, strategies, and actions to guide State and local agencies to help achieve the coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. It will also guide protection and enhancement of the unique resources, culture, and values of the Delta as an evolving place (California Water Code Section 85054). The plan was amended in September 2016.

The Delta Reform Act specifies eight policy objectives that are “inherent” in the coequal goals (see California Water Code Section 85020). It also specifies a statewide policy to reduce reliance on the Delta in meeting the State’s future water supply needs through improved regional water self-reliance (California Water Code Section 85021) and identifies specific subjects and strategies that must be included in the *Delta Plan* (see generally, California Water Code Sections 85301–85309).

The Delta Reform Act also established the Delta Science Program and Delta Independent Science Board (ISB) to provide the scientific support and oversight the DSC needs to make decisions based on sound science. The Delta Science Program replaces the CALFED Bay-Delta Program Science Program, and the Delta ISB replaces the CALFED Bay-Delta Program ISB.

The Delta Science Program will develop scientific information and synthesis on issues critical to managing the Bay-Delta system. That body of knowledge must be unbiased, relevant, authoritative, integrated across State and federal agencies, and communicated to Bay-Delta decision makers, agency managers, stakeholders, the scientific community, and the public. The *Delta Science Plan*, released by the DSC in December 2013 and updated in 2016, provides a guide for organizing, conducting, and integrating science in the Delta. A Science Action Agenda will be a key component of implementing the *Delta Science Plan*.

The Delta ISB is a standing board of nationally and internationally prominent scientists with appropriate expertise to evaluate the broad range of scientific programs that support adaptive management of the Delta. The Delta ISB will provide oversight of the scientific research, monitoring, and assessment programs that support adaptive management of the Delta through periodic review of each of those programs. The overall objective of Delta ISB oversight is to ensure that the science supporting Bay-Delta programs, the application of that science, and the technical aspects of the Bay-Delta programs are optimally developed and implemented.

implement studies and construct projects to address regulatory requirements under the U.S. Fish and Wildlife Service and NOAA Fisheries BiOps and the DFW incidental take permit.

Predation, Release, and Efficiency Program

The predation, release, and efficiency program includes improving existing fish salvage release sites, developing additional fish salvage release sites, assessing predation reduction alternatives, continuing the associated predation study for Clifton Court Forebay, and evaluating the screening efficiency of the Skinner Fish Facility to comply with the requirements under the BiOps and incidental take permit. The requirements include the following:

- reduce prescreen loss of federal Endangered Species Act-protected Chinook salmon and steelhead in the Clifton Court Forebay to no more than 40 percent (Prescreen loss is the loss of fish as they move across the forebay that presumably results from predation by fish and birds.)
- reduce predation by 50 percent at the fish release sites
- implement fish release site studies to develop methods to reduce predation following release of salvaged fish
- identify salvage deficiencies and recommend actions to improve salvage efficiency in order to meet a required efficiency goal of 75 percent for salmonids

Fish Science Building

The addition of the Fish Science Building at the Skinner Fish Facility was essential to improve DWR's ability to conduct fish studies to meet regulatory requirements for operation of the SWP. The existing collection, handling, transport, and release building was too small and lacked the necessary equipment to hold and rear fish to carry

out various studies and projects. The Fish Science Building includes a small laboratory, fish rearing tanks, an office, and an area to store study gear and equipment. In 2018, the building continued to provide critical support for numerous fishery studies related to the BiOps.

Fish Salvage Release Sites

The predation reduction strategy for the release sites includes designing and constructing the Curtis Landing fish release site with minimal in-water structure to reduce predation and improve survival of released salvaged fish. In addition, two new fish release sites, Little Baja and Manzo Ranch, approximately a half-mile apart, were completed in 2018 on Sherman Island. This will allow more time between releases at each site. Coordinated interagency use will occur at a total of six release sites.

Construction of the major components of the Curtis Landing fish release site was completed in 2014, and the facility became fully operational in 2015. Design of Little Baja and Manzo Ranch was completed in 2014, all permits were obtained, and construction was initiated in fall 2015 and completed in 2018. The construction of the new fish release sites included a fish release system, as well as levee improvements and county road realignment by the local reclamation district.

DWR performed operational testing of both fish release facilities. Because of levee work-related delays, DWR removed and replaced work to accommodate the reclamation district's remediation work at both sites. Both fish release facilities were again fully functional.

Clifton Court Forebay Predation Reduction Studies

The predation reduction strategy for Clifton Court Forebay was to increase public fishing opportunities in the forebay to

reduce the number of predatory fish and the prescreen loss of federal Endangered Species Act-protected Chinook salmon and steelhead. This strategy involved constructing a fishing pier to provide improved access to anglers.

Due to changes made to Bay Delta Conservation Plan Conservation Measure 1 in 2014, the proposed fishing pier project was indefinitely suspended. The related companion predator study initiated in 2013 continued in 2018. The study was to establish a baseline for the demographics and behavior of predatory fish in Clifton Court Forebay, to provide information to help refine proposed predator management efforts in the forebay, and to identify other potential management actions for limiting predation on listed fish species. The study included predatory fish sampling, biotelemetry, gut content genetics, creel surveys, avian studies, and bioenergetics modeling. Data collection efforts as part of the study ended in December 2018.

Predator Reduction Alternatives

Subsequent to the suspension of the fishing pier project, DWR, in close coordination with NOAA Fisheries, analyzed other predator reduction alternatives in 2015. NOAA Fisheries identified six preferred alternatives and provided a ranking of these alternatives. The result of this effort was agreement to study several possible options for predator reduction in Clifton Court Forebay. In addition, NOAA Fisheries approved an extension for compliance with the BiOp requirement conditioned on DWR implementing four interim measures to reduce predation in Clifton Court Forebay. In 2018, DWR completed electrofishing in Clifton Court Forebay and continued work on the other three interim measures:

- (1) controlling aquatic weeds
- (2) implementing operational changes to limit take of listed fish species

- (3) conducting a predatory fish relocation study

In 2018, DWR also completed an in-depth study of various dredging proposals for Clifton Court Forebay that could contribute to the survival of listed fish species. The study included a sediment sampling and characterization analysis to evaluate physical and chemical properties of dredged materials, as well as development and implementation of a three-dimensional computer model to evaluate fish survival across Clifton Court Forebay. The study concluded that dredging would potentially provide a marginal benefit to fish survival in Clifton Court Forebay, but would not meet the BiOp requirement of “no more than 40 percent” prescreen loss of salmonids in the forebay.

Additional information about CVP/SWP operations related to the BiOps can be found in Chapter 3, Environmental Programs.

Skinner Fish Facility Salvage Efficiency and Loss Monitoring

The Skinner Fish Facility, formally known as the John E. Skinner Delta Fish Protective Facility (named for a former DFW biologist who was a national authority on protective fish facilities), is a fish collection and diversion facility located along the Clifton Court Forebay two miles upstream from the Banks Pumping Plant. The Skinner Evaluation and Improvement Study monitors salvage efficiency and fish losses associated with operating the Clifton Court Forebay and the Skinner Fish Facility. The study evaluates the following factors:

- fish losses through Clifton Court Forebay
- fish losses through the primary louvers, secondary louvers, and holding tanks at the Skinner Fish Facility, as well as hydraulics within the Skinner Fish Facility
- fish behavior and movement patterns as the fish are entrained and guided through the forebay and facility

During 2018, the study team conducted mark-recapture investigations using tagged Chinook salmon and steelhead to evaluate losses in Clifton Court Forebay and salvage efficiency at the Skinner Fish Facility. These data were also used, in part, to evaluate the performance of predator relocation efforts in Clifton Court Forebay using electrofishing.

Furthermore, DWR worked with the University of California, Davis, to develop fish culture methods for longfin smelt with the aim of establishing a source of fish for use in experiments to determine salvage effectiveness at the Skinner Fish Facility for this species as required in the 2009 incidental take permit from DFW. DWR also worked with the University of California, Davis, to conduct a green sturgeon laboratory study to develop surrogate estimates for salvage efficiency using a physical model of a louver guidance system and to examine the risk of predation on juvenile green sturgeon by common predatory species in the Delta.

Fish Screen Evaluations

Fish screens at Barker Slough Pumping Plant, Roaring River Slough Distribution System, and diversions around Sherman Island continued to be evaluated to comply with the requirements of the BiOps and the incidental take permit. The evaluations consisted of three components:

- (1) fish screen cleanliness
- (2) fish screen hydraulics
- (3) fish entrainment (only at Barker Slough Pumping Plant)

The evaluations were used to determine whether facility structural components are in sufficient condition to perform as designed; the effectiveness of fish screen cleaning practices; water approach velocities for various screen cleanliness conditions; and entrainment for various combinations of fish presence, pumping rates, times of day, and times of year.

During 2018, additional changes were made to the three draft final *Fish Screen Evaluation Program 2015–2016* reports and the draft final *Post-dredging Roaring River Slough Distribution System 2016–2017* report. No further fish screen evaluations are planned for these sites.

Salmon Survival Engineering Solutions Program

The salmon survival engineering solutions program includes completed work required by the 2009 NOAA Fisheries BiOp. To comply with Reasonable and Prudent Alternative Action IV.1.3, DWR and the Bureau of Reclamation are required to consider engineering solutions to further reduce the diversion of emigrating juvenile salmonids to the interior and southern Delta and reduce their exposure to CVP and SWP export facilities.

Salmon Protection Technology Study

Ongoing work under this program for planning and design for a multiyear barrier implementation program in the Sacramento River continued in 2018. The intended purpose of the project is to boost salmonid populations, maintain ongoing compliance with Reasonable and Prudent Alternative Action IV.1.3, and provide SWP water supply reliability. The Salmon Protection Technology Study project concept includes construction and operation of barriers at Delta junctions with known lower survival salmonid migratory pathways.

Project design elements included the installation and operation of a bioacoustic fish fence in the Sacramento River at the divergence of Georgiana Slough for five years and the installation and operation of a floating fish guidance structure at Steamboat Slough for two years. Similar to previous studies, the bioacoustic fish fence would operate as a behavioral deterrent to prevent emigrating Sacramento River juvenile salmonids from entering Georgiana Slough during the period

when wild juvenile salmonids are present. Alternatively, the floating fish guidance structure would be experimentally operated to guide fish from the Sacramento River into Steamboat Slough during the same period, where survival may be increased.

This project will provide the basis for DWR to recommend future actions, beyond the Salmon Protection Technology Study, that are intended to continue improving salmon populations and water supply reliability for SWP operations.

South Delta Improvements Program

In 1999, the South Delta facilities became a key component of the CALFED Bay-Delta Program.

South Delta Improvements Program (SDIP) elements in the CALFED Bay-Delta Program record of decision included increasing diversions through Clifton Court Forebay (first to 8,500 cubic feet per second and then to 10,300 cubic feet per second), dredging and installing operable tidal barriers in the South Delta, installing a fish barrier at the Head of Old River, and constructing the first phase of a new intake and fish screen in Clifton Court Forebay. SDIP is proposed to be implemented in two component stages.

DWR and the Bureau of Reclamation identified the following SDIP project objectives and purposes:

- reduce movement of San Joaquin River watershed Central Valley fall-run and late fall-run juvenile Chinook salmon into the South Delta via Old River (SDIP Stage 1)
- maintain adequate water levels and water quality through improved circulation for agricultural diversions in the South Delta, downstream of the Head of Old River (SDIP Stage 1)
- increase water deliveries and delivery reliability to SWP and CVP water

contractors south of the Delta (SDIP Stage 2)

- provide opportunities to convey water for fish and wildlife purposes by increasing the maximum permitted level of diversion through the existing intake gates at Clifton Court Forebay to 8,500 cubic feet per second (SDIP Stage 2)

The SDIP Stage 1 physical/structural component includes the following elements:

- construct and operate a fish-control gate at the Head of Old River to reduce downstream movement of San Joaquin River watershed Central Valley fall-run and late fall-run juvenile Chinook salmon into the South Delta via the Head of Old River
- construct and operate up to three flow-control structures (gates) at Middle River (near the confluence of Middle River with Victoria Canal); Grant Line Canal (near the confluence of Grant Line Canal and Old River); and Old River (just east of the Delta-Mendota Canal intake) to improve existing water levels and circulation patterns in South Delta water channels
- dredge various channels in the South Delta, including Middle and Old rivers, to improve conveyance; and dredge areas surrounding agricultural diversions to improve their function
- extend up to 24 agricultural diversion intake facilities to improve their function

The SDIP final environmental impact report/environmental impact statement (2006) evaluated alternatives and proposed continuing with SDIP Stage 1 as the preferred alternative.

The Bureau of Reclamation and DWR's 2008 biological assessment for the CVP and SWP long-term operations criteria and plan included operation of the SDIP permanent operable gates.

The U.S. Fish and Wildlife Service BiOp, issued in December 2008, concluded that coordinated operations of the CVP and SWP would jeopardize delta smelt. The U.S. Fish and Wildlife Service provided a reasonable and prudent alternative under which SDIP could move forward.

The NOAA Fisheries BiOp, issued in June 2009, concluded that CVP and SWP operations would jeopardize a number of anadromous species, in particular Chinook salmon. NOAA Fisheries provided no reasonable and prudent alternative for SDIP. DWR initiated discussion with NOAA Fisheries in late 2009 to establish what actions could lead to a reasonable and prudent alternative under which SDIP could move forward.

Program Status

DWR and the Bureau of Reclamation continued to suspend most SDIP planning and permitting activities through 2018. A notable exception was completing the report *Effects of the South Delta Agricultural Barriers on Emigrating Juvenile Salmonids*. Completing this study met both the 2008 Temporary Barriers Project NOAA Fisheries BiOp requirement analysis as well as the requirement in the 2009 NOAA Fisheries BiOp for long-term operations of the SWP and CVP that required completion of the study prior to consulting on SDIP. The report recommended that implementing permanent operable gates would reduce effects to emigrating salmonids compared to the temporary agricultural barriers that have been constructed and removed annually since 1987. This report was sent to NOAA Fisheries in December 2018.

Temporary Barriers Project Facilities

The South Delta Temporary Barriers Project is an ongoing project that installs up to four rock barriers in channels located in the southern portion of the Delta near the cities of Tracy and Lathrop in San Joaquin County. The barriers are usually installed during the

irrigation season from April to November at four sites (see Figure 2-2):

- (1) Head of Old River, in Old River where it splits from the San Joaquin River
- (2) Old River near Tracy, one half-mile east of the Jones Pumping Plant intake and about eight miles northwest of Tracy
- (3) Middle River near Victoria Canal, just southeast of the confluence of Middle River, Trapper Slough, and North Canal
- (4) Grant Line Canal, 420 feet east of the Tracy Boulevard Bridge

The Old River near Tracy, Middle River near Victoria Canal, and Grant Line Canal rock barriers are designed to act as flow-control structures to improve water levels and circulation within the South Delta. These are referred to as the agricultural barriers. The Head of Old River barrier is designed to improve migration conditions for Central Valley fall-run Chinook salmon and steelhead in the spring and fall. In the spring, the barrier blocks migratory movements of juvenile salmon into Old River from the San Joaquin River. This barrier is referred to as the fish barrier. In the fall, the barrier increases the volume of San Joaquin River flow passing downstream through the Port of Stockton, improving dissolved oxygen levels and increasing attraction flows for returning adult San Joaquin River salmon and steelhead.

In 2018, all three agricultural barriers were installed. The barrier at the Middle River near Victoria Canal site was installed in March while the barriers at the Old River near Tracy and Grant Line Canal sites were installed in April and June, respectively.

On August 8, 2018, the Middle River barrier weir crest was raised by one foot to provide additional water level protection upstream of the barrier. By September, a notch was excavated in the weir crests of both the Middle River and the Old River near Tracy barriers to allow for passage of salmon

migrating up the river. The Grant Line Canal barrier, which uses a flashboard structure to accommodate fish migration, was adjusted on September 19, 2018.

Due to high flows on the San Joaquin River, the spring Head of Old River barrier was not installed. The fall Head of Old River barrier was installed and operated at the request of DFW. The six slide gates of the culverts remained in the open position for the duration of the barrier operation. The installation of the barrier started on September 19, 2018. The barrier was closed on October 2, 2018, and remained in operation until November 5, 2018.

All three agricultural barriers and the fall Head of Old River fish barrier were removed in November 2018. Barrier removal at the Head of Old River and Grant Line Canal sites began on November 5; both barriers

were completely removed by November 13 and November 24, respectively. Old River near Tracy barrier removal began on November 13; the barrier was breached by November 14 and completely removed on November 28. The last barrier to be removed was at the Middle River near Victoria Canal site: removal began on November 26, and the barrier was completely removed by November 29.

In 2018, the *Effects of the South Delta Agricultural Barriers on Emigrating Juvenile Salmonids* study was completed, and a final report was released in November 2018. The study was conducted by Environmental Science Associates, and the report focused on the effects of the three agricultural barriers on outmigrating juvenile salmonids. Environmental Science Associates analyzed acoustic telemetry data, which consisted of manually tagging fish and electronically

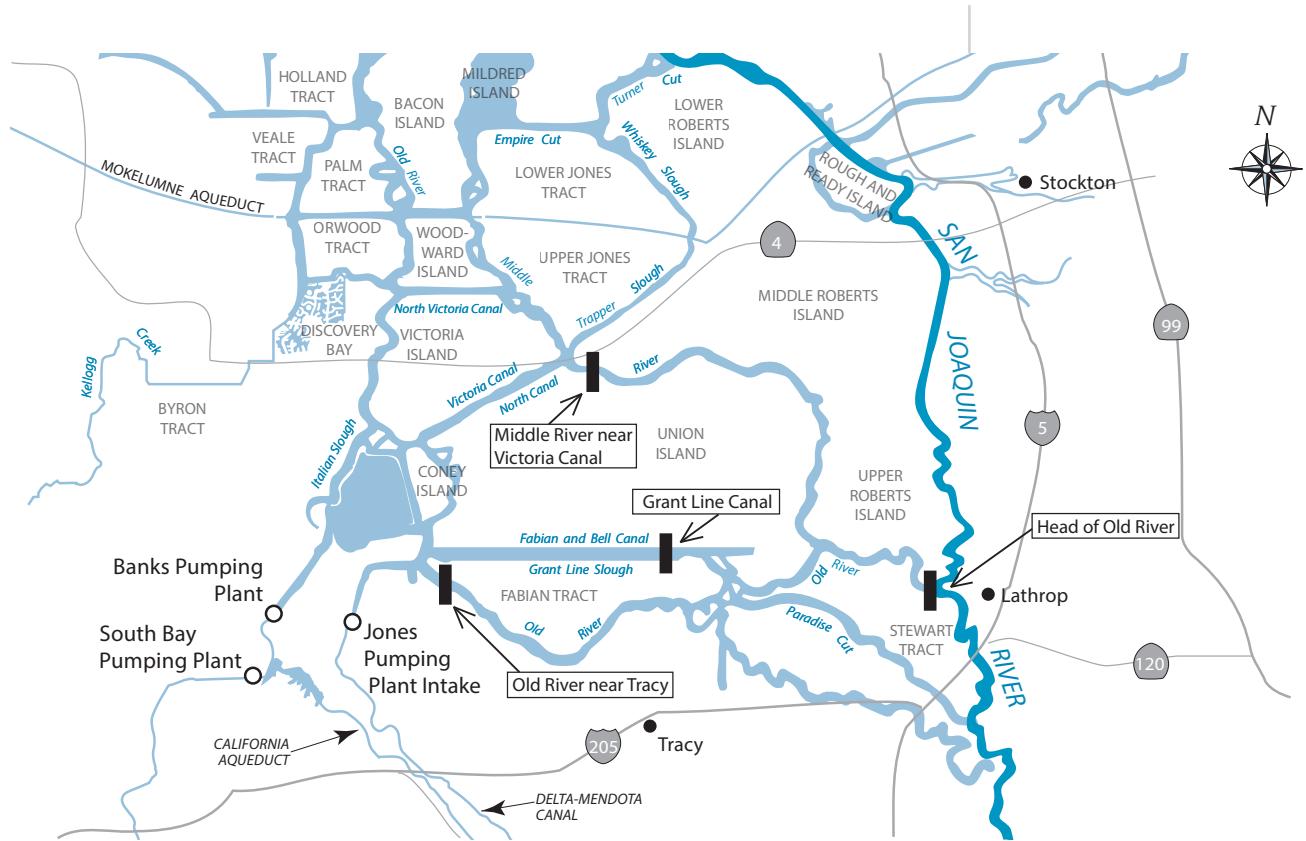


Figure 2-2 Temporary Barrier Locations in the South Delta

tracking their movement to determine the mortality rate of juvenile salmonids before, during, and after construction of the agricultural barriers. Study results showed a significant reduction in juvenile salmonid survival when one-way flap gates were installed and operated tidally for a substantial portion of the salmonid juvenile migratory period. The study also showed that juvenile salmonid preferred migration through Grant Line Canal waterways over Middle River near Victoria Canal or Old River near Tracy waterways.

Delta Flood Control

Levees in the Delta protect valuable wildlife habitat, farms, homes, urban areas, recreational developments, highways, railroads, natural gas infrastructure, utility lines, a major aqueduct, and other public developments. Delta levees influence and protect critical water quality parameters in Delta waterways. Some levees also protect water quality for approximately 27 million Californians who receive a portion of their water from the Delta. The State Legislature recognized the importance of the Delta and enacted the Delta Flood Protection Act of 1988, declaring that "... the Delta is endowed with many invaluable and unique resources and that these resources are of major statewide significance" (California Water Code Sections 12300 et seq.).

Since 1988, the Delta Levees Program has provided more than \$310 million in State-appropriated funds. These monies are combined with local cost share funding to provide flood protection and environmental benefits in the Delta.

In Senate Bill 34 (Boatwright; Chapter 28, Statutes of 1988), the Legislature declared its intent to appropriate \$6 million for local assistance under the Delta Levee Maintenance Subventions Program and \$6 million for Delta Levees Special Flood Control Projects, including subsidence

studies and monitoring on Bethel, Bradford, Jersey, Sherman, and Twitchell islands; Holland, Hotchkiss, and Webb tracts; and the towns of Thornton and Walnut Grove.

In 1996, Assembly Bill 360 (Hannigan; Chapter 601, Statutes of 1996) expanded the area covered by the Delta Levees Program to include the remainder of the legal Delta and northern Suisun Bay.

Additional funding sources for the Delta Levees Program are listed below:

- Proposition 204 enacted in 1996 (\$25 million)
- Proposition 13 enacted in 2000 (\$30 million)
- Proposition 50 enacted in 2002 (\$70 million)
- Proposition 84 enacted in 2006 (\$275 million)
- Proposition 1E enacted in 2006
- Proposition 1 enacted in 2014

Delta Flood Emergency Preparedness, Response, and Recovery Program

The Delta Flood Emergency Preparedness, Response, and Recovery Program was initiated within the Division of Flood Management in response to the passing of the Disaster Preparedness and Flood Prevention Bond Act of 2006 (Proposition 1E). The program is designed to enhance emergency preparedness and enable DWR to better coordinate with its local partners to respond to and recover from a large-scale Delta flood emergency. The main components of the program are the *Delta Flood Emergency Management Plan*; local agency coordination and support, including flood emergency response grant funding; and emergency materials transfer facilities in Stockton and Rio Vista.

The Delta Flood Emergency Management Plan was completed in December 2018,

incorporating data and results from the upgraded Delta Flood Emergency Response Tool, results from the after-action report regarding the 2017 winter storms, and comments resulting from the 2018 Delta Flood Emergency Management Plan Working Group and executive review. The plan supports DWR's emergency preparedness efforts in the Delta, describes DWR actions during a flood emergency response, and helps DWR flood emergency managers in making critical decisions during recovery.

Delta Levees Maintenance Subventions Program

The Delta Levees Maintenance Subventions Program (Subventions Program) is a cost share program that provides technical and financial assistance to local levee-maintaining agencies in the Delta for the maintenance and rehabilitation of levees. The Subventions Program is authorized by California Water Code Sections 12980 through 12995 and is managed by DWR. The Central Valley Flood Protection Board reviews and approves DWR's recommendations and enters into agreements with local agencies to reimburse eligible costs for levee maintenance and rehabilitation.

The Subventions Program provides reimbursement funding to local levee-maintaining agencies for improving, maintaining, and enhancing nearly 700 miles of project and non-project levees. Since its inception in 1973, the Subventions Program has provided more than \$220 million of State funding to more than 70 islands in the Delta. In fiscal year 2018–2019, the program expects to reimburse up to \$8 million to local agencies for eligible levee maintenance and rehabilitation work. The local levee-maintaining agencies' activities help minimize the risk of Delta levee failure, which in turn protects the Delta's ecosystem, communities, and agriculture; State and

private infrastructure; and the State's water supply.

Delta Levees Special Flood Control Projects Program

The Delta Levees Special Flood Control Projects Program assists eligible local agencies in the Delta with flood protection and levee stability repairs. In 1990, the California Water Commission approved actions and priorities that serve as guides for DWR to determine the best use of appropriations to protect Delta islands. This includes the following long-term actions and current priorities:

- rehabilitating threatened levees through the beneficial reuse of dredged material
- improving water supply reliability, levee integrity, and habitat enhancement by soliciting multi-benefit projects through the projects solicitation process
- upgrading levees to the standards discussed in Bulletin 192-82 (*Delta Levees Investigation*)
- considering projects that will help achieve net long-term habitat improvement for fish and wildlife

While DWR seeks cost sharing for all program projects, DWR may provide up to 100 percent of the cost in some cases.

Levee restoration projects, habitat projects, and other special projects are expected to be conducted on various Delta islands and tracts in fiscal year 2018–2019. The program plans to release a multi-benefit projects solicitation package once Proposition 1 funds are available.

North Delta Flood Control and Ecosystem Restoration Project

The North Delta Flood Control and Ecosystem Restoration Project will provide

flood control improvements and ecosystem restoration in the North Delta. The project will implement important flood control improvements in the North Delta where the Mokelumne River, Cosumnes River, Dry Creek, and Morrison Creek converge. Flood flows in the area threaten levees, bridges, and roadways when levees on McCormack-Williamson Tract (MWT) are overtopped and a flood surge occurs. The proposed project will help regulate peak flood flows and prevent flood surges. It will also provide substantial aquatic and terrestrial habitat benefits.

The final North Delta Flood Control and Ecosystem Restoration Project environmental impact report was certified in November 2010 and recommended the implementation of a preferred alternative (Alternative 1-A for the Group I actions and the No Action Alternative for the Group II actions [for details see Bulletin 132-11]). The project will create tidal, subtidal aquatic, and floodplain riparian terrestrial habitats benefiting a number of special status species such as Sacramento splittail (*Pogonichthys macrolepidotus*) and Chinook salmon. The project, as proposed, will provide a nearly contiguous riparian corridor from the downstream portion of the Cosumnes River Preserve to the Delta. The project is consistent with the objectives put forth in the *California Water Action Plan*, the *Delta Plan*, and California EcoRestore.

Two project elements are proposed for implementation: MWT and Grizzly Slough. The MWT element combines North Delta flood surge reduction measures with the construction of habitat-friendly levees, floodplain restoration, and the creation of freshwater tidal habitat on MWT. The MWT property, purchased using a CALFED Bay-Delta Program grant, is currently owned and managed by The Nature Conservancy. (For background on the CALFED Bay-Delta Program, see Bulletins 132-95 through 132-11.) The Grizzly Slough

element consists of breaching the Grizzly Slough levee upstream of MWT to help attenuate peak flood flows and maximize nearly 500 acres of floodplain habitat on the DWR-owned property.

Project Status

After a delay due to MWT flooding in 2017, and subsequent draining and repair, MWT Phase A implementation began, and a protective tower levee was completed in 2018. During this time, The Nature Conservancy requested that DWR take ownership of the tract. Negotiations and background investigations proceeded during 2018 while DWR determined whether to accept this role.

In late 2018, the North Delta Project was certified as consistent with the Delta Plan. DWR also began negotiations with Pacific Gas & Electric Company to determine the most appropriate way to implement the Grizzly Slough project design in light of an existing gas line easement. Through discussions with Pacific Gas & Electric Company, it was determined that gas line abandonment was not possible (without substantial cost) in time to build the project. Consequently, the planning team developed an alternative design approach to accommodate the gas line. The modified design accommodated all of the planned project features and enhanced the ability to manage the wildlife-friendly agricultural area.

Dutch Slough Tidal Marsh Restoration Project

The Dutch Slough Tidal Marsh Restoration Project will restore a 1,187-acre site in the western Delta city of Oakley. The project site consists of three leveed parcels that will be restored to tidal marsh, riparian woodland, open water, managed marsh, and upland habitats. See Bulletin 132-18 for additional background information.

Project Status

Dutch Slough currently sits along a high-grade slope, with site elevations ranging from six feet above sea level to six feet below sea level. In 2018, DWR began smoothing the grade of that slope by excavating soil from higher elevations and moving it to lower elevations. Once the grading and channel excavation are complete, DWR will plant native plants, including about 50,000 tule plugs. Following two years of plant growth, in about 2021, DWR will breach the levees, allowing water from the Delta channels to flow in and out with the daily tides.

In 2018, groundbreaking on two of the three parcels (Emerson and Gilbert) took place. Activities included major site grading to bring the site to proper elevations for tidal influence as described above. Tidal marsh restoration on the Burroughs parcel is still in the planning phase and is estimated to start construction in 2022.

West Delta Program/Delta Islands

DWR owns approximately 13,000 acres on Sherman and Twitchell islands, located in the western Delta. One of DWR's program objectives is mitigation of subsidence through various wetland restoration projects. DWR's program objectives are supported by active research and application of land management activities used for subsidence reversal, carbon sequestration, and habitat development.

Since 2008, DWR has constructed approximately 2,300 acres of subsidence mitigation projects on Sherman and Twitchell islands and constructed approximately 6,000 lineal feet of "fish friendly" habitat setback levees (see Figure 2-3).

In 2018, work continued in partnership with the Sherman Island Reclamation

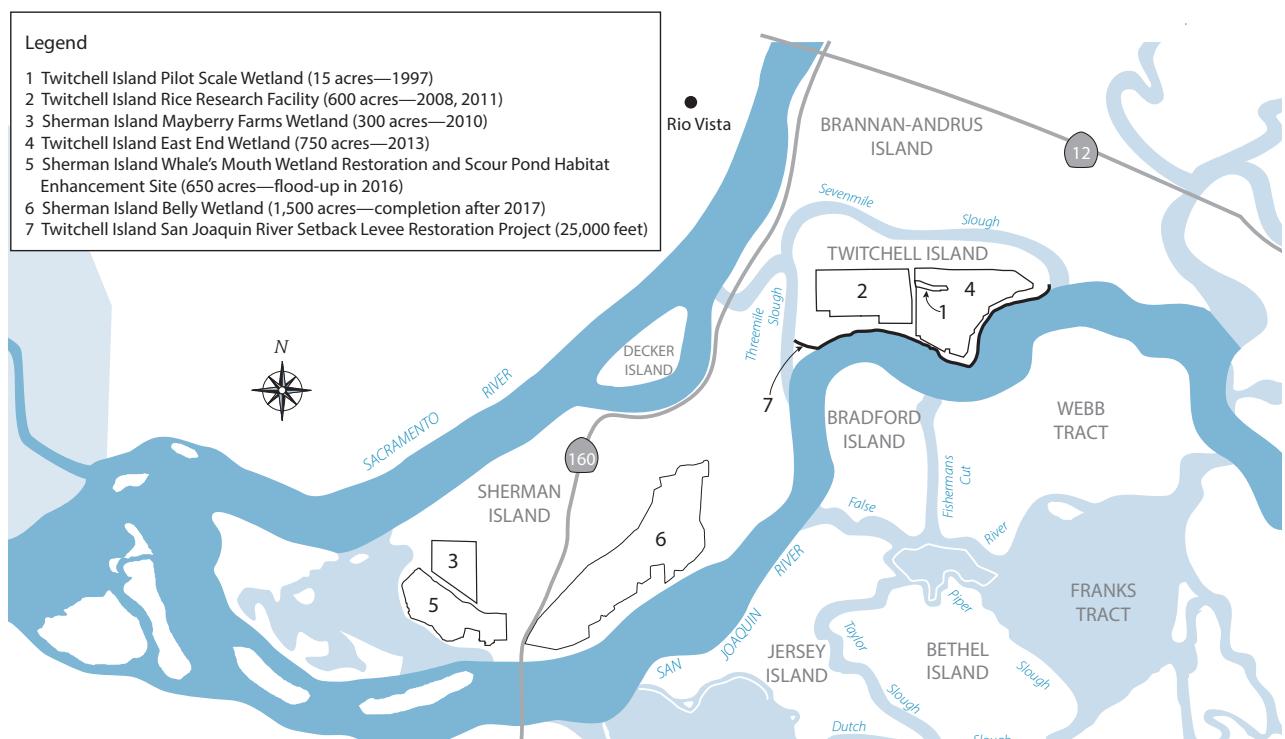


Figure 2-3 Selected West Delta Program Projects

District (Reclamation District 341) under a \$10.5 million grant from DFW's Wetlands Restoration for Greenhouse Gas Reduction Program. The grant provided funding for the construction and maintenance of the Sherman Island Whale's Mouth Wetland Restoration Project, and in 2018, provided funding for planning and engineering activities associated with the Belly Wetland Restoration Project, an approximately 1,000-acre wetland proposed for the lowest spots of Sherman Island. Matching funds from both DWR and the University of California, Berkeley, will provide for additional greenhouse gas monitoring throughout the Delta, resulting in a data set from a more robust variation of conditions.

The West Delta Program continued a partnership with the University of California, Berkeley, to collect greenhouse gas data on both newly constructed wetland sites as well as typical Delta farmed crops such as corn, alfalfa, and irrigated pasture. Data collected since 2010 has shown that there is a net greenhouse gas benefit of approximately 10 metric tons of carbon dioxide equivalent by planting wetland crops on previously farmed Delta peatland soils. In 2018, data collected in the West Delta contributed to the adoption of a greenhouse gas protocol by the American Carbon Registry allowing for wetland projects to sell carbon credits for their net increase in carbon sequestration on peat soils. This carbon protocol is under consideration for adoption by the California Air Resources Board.

The West Delta Program continued working with the Twitchell Island Reclamation District (Reclamation District 1601) to develop construction plans and environmental permits for the Twitchell Island San Joaquin River Setback Levee Restoration Project. This project will construct approximately 25,000 lineal feet of setback levee along the San Joaquin River, allowing for habitat features to be developed on the water side.



Chapter 3

Environmental Programs

A cormorant (Phalacrocoracidae sp.) is perched on a post near the Dutch Slough tidal marsh restoration project in the Sacramento-San Joaquin Delta near Oakley.

Significant Events in 2018

The Delta Conveyance Design and Construction Authority (DCA) was formed in May as a joint powers authority by the participating public water agencies. The DCA is responsible for the final design and construction of California WaterFix facilities, under the oversight of the Department of Water Resources (DWR).

In October, DWR completed construction work on the Decker Island project. The project enhanced 140 acres of tidal wetland in Solano County that will increase access to benefit native fish species, inhibit the establishment of invasive vegetation, and enhance access to upland habitat.

Information in this chapter was contributed by the Division of Environmental Services, the Division of Operations and Maintenance, the Division of Integrated Regional Water Management, and the State Water Project Analysis Office.

The Department of Water Resources (DWR) has developed and implemented several programs to avoid, minimize, and/or mitigate adverse environmental impacts resulting from construction and operation of State Water Project (SWP) facilities. DWR has also established other environmental programs and partnered with other agencies to restore and enhance the natural environment.

Operations for Species of Concern

A primary consideration in the operation of the SWP is avoiding, minimizing, and/or mitigating adverse impacts to species of concern, species listed as threatened or endangered by a State or federal agency, or species proposed for listing. The SWP is operated pursuant to biological opinions (BiOps) issued under the federal Endangered Species Act (ESA), and consistency determinations or incidental take permits issued under the California Endangered Species Act (CESA). A key to avoiding and minimizing adverse impacts to these species is maintaining flexibility in SWP operations. Operational responses can include Delta Cross Channel gate closure, export curtailments, changes in delivery schedules, increased reservoir releases, preferential use of certain facilities, or a combination of these actions.

San Joaquin River Restoration Program

The San Joaquin River Restoration Program (SJRRP) is a comprehensive long-term effort to restore flows to the San Joaquin River from Friant Dam to the confluence of the Merced River and to restore a self-sustaining Chinook salmon (*Oncorhynchus tshawytscha*) fishery in the river, while reducing or avoiding adverse water supply impacts from restoration flows.

The 2018 water year was classified as Normal-Dry, as defined by the program's hydrograph; 157,600 acre-feet (af) of water

was released from Friant Dam to support fish and their habitat in the San Joaquin River. This marked the second straight year restoration flows were continuously released, connecting Friant Dam flows to the Sacramento-San Joaquin Delta (Delta). However, flow constraints due to seepage restrictions continue to limit flows below Sack Dam on the San Joaquin River (River Mile [RM] 182) and almost 125,000 af of unreleased restoration flows were sold back to federal water contractors for mostly irrigation uses.

In 2018, the SJRRP continued to release adult spring-run Chinook salmon broodstock: 120 males and 59 females were released into Reach 1 of the restoration area to assess spawning activity. A total of 42 redds were observed in 2018, the most redds in the river in more than 60 years. Natural returners of spring-run salmon were not actively monitored in 2018 due to the difficulty of monitoring from high flows in the river. However, no natural returners were detected from the limited sampling with camera monitoring and carcass surveys.

The SJRRP completed the *Funding Constrained Framework for Implementation* document in 2018 that identified program priorities and set a realistic budget that reflects fish restoration and water management objectives given available funding. Stage 1 of the framework includes actions to provide volitional fish passage in the river to Friant Dam and sufficient flows to manage river temperatures, key objectives to re-establish a self-sustaining population of fall-run and spring-run Chinook salmon

in the San Joaquin River. Several Stage 1 projects included in the framework continue to move forward. The Mendota Pool Bypass and Reach 2B Improvements Project, Arroyo Canal Fish Screen and Sack Dam Fish Passage Project, and the Eastside Bypass Improvements Project will provide improved fish passage, flow capacity, and fish habitat to contribute to the restoration goal of the SJRRP. These projects are planned for completion by 2025.

More information is available on the SJRRP's website.

Lower Yuba River Accord

The Lower Yuba River Accord's purpose is to resolve instream flow issues and protect and enhance lower Yuba River fisheries and local water supply reliability. The Lower Yuba River Accord provides revenues for local flood control and water supply projects; water to enhance SWP and Central Valley Project (CVP) water supply reliability by offsetting Delta export reductions for protection and restoration of Delta fisheries; and improvements in statewide water supply management, including dry year supplies for participating SWP and CVP contractors.

The Lower Yuba River Accord is based on three agreements: (1) a water purchase agreement between Yuba County Water Agency and DWR; (2) conjunctive use agreements between Yuba County Water Agency and its member units; and (3) a fisheries agreement between DWR, California Department of Fish and Wildlife (DFW), and several environmental groups, with U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NOAA Fisheries) signing a letter of support (but not signatory to the Agreement).

In 2018, the Sacramento Valley Water Year Hydrologic Classification (Sacramento Valley 40-30-30 Index) was below normal. The total quantity of Component 1 water was

59,131 af; there was no Component 2 water; Component 3 water was 16,576 af; and Component 4 water was 16,411 af.

A shortfall of 869 af of prepaid Component 1 water that remained from 2015 (see Bulletin 132-16, Chapter 3, Environmental Programs) was repaid by Yuba County Water Agency in 2018. These values are before any losses (e.g., carriage water, aqueduct conveyance loss, etc.).

For more information about the Lower Yuba River Accord, see Chapter 8, Water Contracts and Deliveries.

Oroville Facilities

Existing Federal Energy Regulatory Commission License Activities for 2018

Invasive Plant Management

During 2018, DWR removed all the red sesbania (*Sesbania punicea*) along the Thermalito Power Canal, Thermalito Forebay, and Thermalito Diversion Pool as part of an annual maintenance effort, which started in 2007. These areas are the upstream extent of the red sesbania population on the Feather River and are considered a high priority management area.

Feather River Fish Hatchery

Fall-run Chinook Salmon. A total of 4,864,630 juvenile fall-run Chinook salmon were released into the Feather River, San Francisco Bay, and San Pablo Bay.

Spring-run Chinook Salmon. A total of 493,903 spring-run Chinook salmon were released into the Feather River at Boyd's Pump Boat Launch in March 2018. The annual target number is 2,000,000, but due to low adult return rates during the fall of 2017, the production goal was not reached for 2018.

Steelhead. A total of 501,000 steelhead were released into the Feather River at Boyd's Pump Boat Launch in February 2018.

Lake Oroville and Thermalito Afterbay

In September 2018, a total of 127,500 sub-catchable Chinook salmon were planted in Lake Oroville at the Bidwell Boat Ramp.

In January and February 2018, a total of 181,738 steelhead were released into the Thermalito Afterbay. Due to the Oroville Dam spillways incident, additional eggs were taken in 2017. The hatchery experienced higher than expected survival, so a larger than normal amount of steelhead were planted in the Thermalito Afterbay (release average normally 10,000 steelhead).

Habitat improvement activities continued in 2018 in the fluctuation zone of the lake and also in the afterbay. Approximately 1,565 Christmas trees were recycled with the help of the Boy Scouts and the California Conservation Corps. The recycled trees were bundled together to create habitat structures for juvenile fish and installed around the Bidwell Canyon Boat Launch area and Thermalito Afterbay. Fifty small willow trees were also planted on the slopes of Lake Oroville near the Bidwell Canyon Boat Launch. Insects gather in the cover and provide food for fish and other aquatic species. The trees also provide habitat for birds and shade for fish.

Lake Oroville Elevation

Lake surface elevation can affect the following aspects of Oroville Facilities:

- habitat
- flora and fauna of the lakeshore area and upstream tributaries
- recreation
- water quality
- water temperature

- shoreline and lakebed stability and erosion
- flood storage capacity
- power generation
- streamflow requirements (downstream of the lake)

The 2018 low point for the Lake Oroville reservoir surface elevation was reached on December 16 at 663.45 feet, and the high point of 824.16 feet was reached on May 8–10. The full pool elevation of Lake Oroville is approximately 900 feet.

Federal Energy Regulatory Commission Relicensing Activities

USFWS Biological Opinion for the Oroville Facilities Relicensing

Various conservation measures for the species identified in the USFWS 2007 BiOp for the Oroville Facilities relicensing project continued to be implemented on SWP lands. Monitoring associated with these measures includes an annual vernal pool survey (644 mapped vernal pools and/or features); protective measures for elderberry shrubs (*Sambucus* species, host plant for the valley elderberry longhorn beetle [*Desmocerus californicus dimorphus*]); and annual monitoring of nesting bald eagles (*Haliaeetus leucocephalus*) in the area (two new territories were established this year for a total of seven currently active nests). In addition, habitat management activities within the Oroville Wildlife Area are coordinated through DFW. These activities include providing nest and forage habitat for waterfowl and upland bird species, monitoring and maintaining Thermalito Afterbay brood pond water surface elevations, and protecting and conserving giant garter snake (*Thamnophis gigas*) habitat. An annual compliance report for 2018 was compiled by DWR and submitted to USFWS.

Devil Canyon and South SWP Hydropower Facilities

Federal Energy Regulatory Commission Relicensing Activities Relicensing Biological Studies

During 2018, DWR continued numerous biological studies in support of the relicensing applications for both the Devil Canyon and South SWP Hydropower projects. The studies were proposed and developed in coordination with local, State, and federal agencies, as well as tribal input. The purpose of the studies is to supplement existing information by providing current data on species and biological processes, which will inform DWR's license applications as well as the Federal Energy Regulatory Commission (FERC). The study data will also help in the development of protection, mitigation, and enhancement measures for State- and federally-listed species and their habitats.

Supporting Studies. Biological and habitat-related studies were conducted during 2018 for the following.

Devil Canyon Project:

- aquatic invasive species
- botanical resources
- ESA-listed bird species (Southwestern willow flycatcher [*Empidonax trailii extimus*] and least Bell's vireo [*Vireo bellii pusillus*]) habitat evaluations
- ESA-listed plants
- ESA terrestrial wildlife—California Wildlife Habitat Relationships
- non-native invasive plants
- special-status terrestrial wildlife species—California Wildlife Habitat Relationships System

South SWP Hydropower:

- aquatic invasive species
- botanical resources

- ESA-listed amphibians, California red-legged frog
- ESA-listed plants
- ESA-listed riparian bird species (Southwestern willow flycatcher, least Bell's vireo, and yellow-billed cuckoo [*Coccyzus americanus*]) riparian habitat evaluations
- ESA-listed terrestrial wildlife species—California Wildlife Habitat Relationships System
- fish entrainment risk assessment
- non-native invasive plants
- Pyramid Lake tributaries fish passage barriers
- Pyramid Reach benthic macroinvertebrates
- Pyramid Reach fish population
- Quail Lake fisheries assessment
- special-status aquatic amphibians and semi-aquatic snakes
- special-status raptors
- special-status terrestrial wildlife species—California Wildlife Habitat Relationships System

Other non-biological studies were also conducted during 2018, including water quality, recreation, and tribal and cultural resources.

Once each study is completed, the data is checked for quality assurance and compiled into a summary. The data and summary is then reviewed by interested agencies, revised as needed, and eventually filed with FERC for its review and analysis.

Information related to studies conducted for the Devil Canyon and South SWP Hydropower projects can be found on the DWR website by searching for "Devil Canyon Project relicensing" and "South SWP Hydropower," respectively.

Relicensing Cultural Resource Studies. As part of the relicensing of the Devil Canyon

Project and South SWP Hydropower, in 2018 DWR continued outreach and consultation with 36 Native American tribes and tribal interests that began in 2017 under Section 106 of the National Historic Preservation Act of 1966.

Formal Section 106 consultation was conducted with the following tribes:

- Fernandeño Tataviam Band of Mission Indians
- Gabrieleño Band of Mission Indians—Kizh Nation
- Gabrielino Tongva Indians of California Tribal Council
- Gabrielino/Tongva Nation
- Gabrieleno-Tongva San Gabriel Band of Mission Indians
- Gabrielino-Tongva Tribe
- Kitanemuk and Yowlumne Tejon Indians
- Morongo Band of Mission Indians
- San Fernando Band of Mission Indians
- San Manuel Band of Mission Indians
- Serrano Nation of Mission Indians
- Tejon Indian Tribe

Invasive Species

Quagga and Zebra Mussel Monitoring and Assessment

The quagga mussel, *Dreissena rostriformis*, and the zebra mussel, *D. polymorpha*, are invasive freshwater mussels that pose a significant threat to the SWP. Both species attach to hard substrates, including other mussels, with strong byssal threads, forming dense colonies and causing significant biofouling impacts to raw water infrastructure by clogging small diameter piping and filters and encrusting trash racks and fish screens. Both species are currently present in California.

The Aquatic Nuisance Species Program, under the Division of Operations and Maintenance, has conducted mussel

surveillance monitoring, implemented management and prevention measures, and conducted public outreach. See Bulletin 132-18 for more information.

Applied Studies

Early Detection Monitoring. DWR routinely monitors the California Aqueduct, SWP reservoirs, and the Delta for the presence of quagga and zebra mussels. DWR uses two methods to monitor for mussels: zooplankton tows (with DNA and microscopic analyses) for veligers (the free floating larval stage) and settlement plates (see Bulletin 132-10).

In 2018, DWR and two collaborating water agencies, Santa Clara Valley Water District and The Metropolitan Water District of Southern California, sampled for veligers at 16 locations in the SWP (see Bulletin 132-10). In addition, DWR staff are trained in quagga and zebra mussel identification and are instructed to look for mussels during regular field work and during routine facility maintenance activities. Mussel inspections also occurred when facilities were dewatered for maintenance and inspection purposes.

Prevention and Response Planning

To protect against and prepare for mussels in the SWP, the Aquatic Nuisance Species Program developed several planning documents to guide actions and identify vulnerabilities, including the *Quagga and Zebra Mussel Vector Management Plan for the State Water Project*, the *Quagga and Zebra Mussel Rapid Response Plan for the State Water Project*, and SWP facility vulnerability assessments and management plans (see Bulletin 132-18).

To prevent the introduction of quagga and zebra mussels from infested watercraft, DWR contracted with the California Department of Parks and Recreation and the Los Angeles County Department of Parks and Recreation to implement vessel inspection and outreach

programs at San Luis State Recreation Area (San Luis Reservoir, O'Neill Forebay, and Los Banos Creek Reservoir) and Pyramid and Castaic lakes (see Bulletin 132-12). Inspection programs at other SWP reservoirs at risk for mussel infestation are funded and conducted by other agencies.

During the vessel inspection, watercraft are inspected for attached mussels and for the presence of standing water that could harbor mussel veligers. Watercraft must be 100 percent dry to launch; otherwise, they fail inspection and must wait seven to eight days before returning. At San Luis State Recreation Area, 14,841 vessels were inspected during 2018. Of those vessels, 311 failed the inspection due to the presence of water. At Pyramid Lake, 7,504 vessels were inspected, with 297 failures. At Castaic Lake, 29,742 vessels were inspected, and 865 failed the inspection. Three of these failures were due to the presence of adult quagga mussel shells on watercraft at Castaic Lake. The remaining failures were the result of the presence of wet equipment or standing water.

Quagga Mussels in the SWP

West Branch. In December 2016, quagga mussels were discovered in the West Branch of the SWP (see Bulletin 132-17). DFW classified Pyramid Lake and Elderberry Forebay as “infested” with quagga mussels and Castaic Lake was initially declared as “presumed infested” because it is downstream of Pyramid Lake and Elderberry Forebay. This designation was removed from Castaic Lake in 2018 because there continued to be no evidence of quagga mussels in the lake.

DFW requires managers of infested water bodies to submit mussel containment and eradication plans. The Aquatic Nuisance Species Program submitted the first draft of a quagga mussel control plan for Pyramid Lake, Angeles Tunnel, and Castaic Lake

in April 2017. During 2018, DWR went through three cycles of draft submittal and revisions, with version five of the control plan submitted to DFW in December 2018. Castaic Lake was removed from the control plan because it is not infested with quagga mussels. Version five of the control plan addresses shear stress through the Pyramid Lake stream release structure and low calcium conditions in Pyramid Lake as control measures for quagga mussels.

Monitoring for adult and veliger mussels continued in Castaic and Pyramid lakes throughout 2018 to determine if any mussels were present in Castaic Lake and to delineate the mussel population and determine if a viable population was present in Pyramid Lake. Veliger samples were collected twice monthly and analyzed by two separate labs. No veligers were detected in either lake during 2018. Additionally, adult mussels were not found on any of the settlement plates deployed in the lakes. A remotely operated underwater vehicle video inspection was conducted in Pyramid Lake on November 2, 2018. Two quagga mussels were observed during the inspection, one on the north side of the trash rack and one in the center. The quagga mussel attached to the center trash rack appears to be the same mussel observed during the December 2016 inspection. The second mussel was a similar size to the first mussel, so it may have been present during the 2016 inspection but was not detected.

Calcium concentrations in Pyramid Lake have historically been suitable to support a quagga mussel population. However, during 2017, calcium concentrations declined to levels marginally able to support adult mussels and unable to support mussel reproduction and veliger development (see Bulletin 132-18). Inadequate calcium may be the reason no further mussels were discovered in Pyramid Lake and no veligers have been detected. Calcium concentrations gradually increased to levels suitable to

support quagga mussels during 2018. DWR will continue to monitor calcium concentrations in the lake.

East Branch. In February 2017, mussel veligers were observed by microscope in water samples collected from the North Park valve of the Santa Ana Pipeline, which transports water from Silverwood Lake to Lake Perris. DNA analysis could not confirm that these were quagga or zebra mussel veligers (see Bulletin 132-18). Extensive monitoring occurred upstream and downstream of the North Park valve throughout the remainder of 2017 and 2018, and no veligers or adult mussels were detected. Because the veliger detection was unconfirmed, and there were no additional detections, the Santa Ana Pipeline was not classified as "infested" by DFW. DWR and The Metropolitan Water District of Southern California will continue to closely monitor the East Branch.

California WaterFix

California WaterFix includes actions to upgrade the existing water conveyance infrastructure that will maintain a reliable source of water for 27 million Californians and more than 3 million acres of farmland in the San Francisco Bay Area, Central Valley, and Southern California, while addressing Delta ecosystem issues. It is a critical element of the State's overall strategy to create climate change resiliency and ensure a reliable water supply for the future, as outlined in the Governor's 2014 (and updated in 2016) *California Water Action Plan*.

Design improvements are being proposed to minimize impacts of the California WaterFix project on local communities and the environment. The proposed changes build on past modifications that significantly reduced the project's footprint and costs. The new optimizations also seek to minimize impacts on Delta wetlands and the natural environment.

In 2018, DWR developed an addendum to the *California WaterFix Final Environmental Impact Report* (EIR), and released a *Public Draft Supplemental EIR/Environmental Impact Statement* (EIR/EIS).

DWR also provided the U.S. Army Corps of Engineers (USACE) and the State Water Resources Control Board (State Water Board) with information to update the Section 404 and 401 applications, respectively.

DWR participated in Part 2 of the State Water Board change of point of diversion hearings.

DWR filed a consistency determination with the Delta Stewardship Council (DSC) that documented how California WaterFix was consistent with the Delta Plan and participated in a public appeal hearing process. DWR subsequently withdrew the certification of consistency for California WaterFix.

The Delta Conveyance Design and Construction Authority (DCA) was formed as a joint powers authority by the participating public water agencies.

DWR finalized the *California WaterFix Programmatic Historic Properties Treatment Plan*.

California WaterFix Environmental Compliance Process

On January 23, 2018, the California WaterFix addendum to the final EIR was released. This addendum was prepared summarizing the California WaterFix project modifications associated with refinements to the transmission line corridors proposed by the Sacramento Municipal Utility District (SMUD).

On July 17, 2018, DWR published the *California WaterFix Draft Supplemental EIR/EIS* evaluating the proposed changes to the conveyance facilities in compliance

with the California Environmental Quality Act. On September 21, 2018, the U.S. Bureau of Reclamation (Reclamation) issued the *California WaterFix Draft Supplemental EIR/EIS* for public review under the National Environmental Policy Act. This document evaluates proposed changes to conveyance facilities previously evaluated in the December 2016 *Bay Delta Conservation Plan/California WaterFix Final EIR/EIS*. Reclamation's issuance of the *California WaterFix Draft Supplemental EIR/EIS* was the same exact document as was issued by DWR with the addition of a transmittal document that relates the proposed changes to the alternatives previously analyzed in the 2016 final EIR/EIS. The public comment period for the draft supplemental EIR/EIS closed on November 5, 2018.

Clean Water Act

On November 13, 2018, DWR provided USACE with an updated continuation sheet for the California WaterFix 404 permit application previously submitted in 2015. On November 15, 2018, DWR provided the State Water Board with an updated continuation sheet for the California WaterFix 401 permit application previously submitted in 2015. These updates were based on the proposed changes to conveyance facilities analyzed in the *California WaterFix Draft Supplemental EIR/EIS*.

Change Petition Hearing

The State Water Board held a hearing to receive evidence relevant to determining whether the State Water Board should approve, subject to terms and conditions, a joint petition filed by DWR and Reclamation to add three new points of diversion and/or points of re-diversion of water to specified water right permits for the SWP and the CVP associated with California WaterFix. The hearing record would also have informed the State Water Board's consideration of an application for a water quality certification

pursuant to Section 401 of the Clean Water Act of 1972 for California WaterFix.

On February 22, 2018, DWR began presenting its case-in-chief during Part 2 of the State Water Board right change petition hearing. Part 2 of the hearing addressed the effects of the project on fish, wildlife, and recreation. Cases-in-chief and cross-examination for all the parties concluded on April 25, 2018. Presentation of rebuttal testimony began on August 2, 2018, and concluded on August 31, 2018. Parties began presenting Part 2 surrebuttal testimony, followed by cross-examination by the other parties, on September 26, 2018. Surrebuttal concluded on October 1, 2018, and the hearing was adjourned until further notice.

Delta Plan Consistency

The Delta Reform Act, as implemented by the DSC, requires a project proponent to certify through a consistency determination that proposed covered actions in the Delta are consistent with the co-equal goals identified in the Delta Reform Act of 2009 and all applicable Delta Plan policies. On July 27, 2018, DWR submitted the final certification of consistency for California WaterFix. The DSC held a public hearing regarding the appeals received on the WaterFix certification of consistency on October 24–26, 2018. On November 15, 2018, the DSC held a workshop on the DWR-prepared *Draft Determination Regarding Appeals of the Certification of Consistency for the California WaterFix*. DWR withdrew the certification of consistency for California WaterFix on December 7, 2018. DWR firmly believed the timing of filing the certification of consistency for California WaterFix was appropriate based on the thorough record prepared for the project, and that the record more than adequately supported the findings that California WaterFix was consistent with the Delta Plan policies. DWR also appreciated there are unresolved issues related to interpretation of the requirements of the Delta Reform Act and Delta Plan policies.

Section 106 of the National Historic Preservation Act

On June 25, 2018, the *California WaterFix Programmatic Historic Properties Treatment Plan* was finalized and will guide implementation of the 2017 California WaterFix Programmatic Agreement DWR entered with USACE and the California State Historic Preservation Office. DWR is committed to assisting USACE with gathering tribal input and concerns by providing notification letters, informational meetings, and site visits to update the tribes about the project and its consideration and treatment of historic properties.

Delta Conveyance Design and Construction Authority

On May 14, 2018, DWR announced that the DCA had been formed as a joint powers authority by the participating public water agencies. The DCA has been charged with final design and construction of California WaterFix facilities, under the oversight of DWR. DWR entered into a joint exercise of powers agreement with the DCA and amended this agreement in October 2018 for implementation of design and construction of California WaterFix.

Biological Opinions for CVP/SWP Operations

NOAA Fisheries and USFWS have both issued BiOps on CVP and SWP operations that include reasonable and prudent alternatives to avoid jeopardizing or adversely modifying critical habitat of federally listed species. (For more information, see the sidebar, Endangered Species and Biological Opinions.) Both the 2008 USFWS and 2009 NOAA Fisheries BiOps were challenged in federal court but were eventually upheld and are the basis for ESA compliance for the CVP and SWP. For more information about the federal litigation, see Bulletins 132-12 through 132-16.

Reinitiation of ESA Consultation

In August 2016, DWR and Reclamation requested reinitiation of ESA Section 7 consultation with USFWS and NOAA Fisheries on the coordinated long-term operation of the CVP and SWP. Several factors resulted in the request for reinitiation of consultation, including the apparent decline in the status of several listed species, new information related to recent multiple years of drought, and the evolution of best available science. The overall goal of reinitiating consultation is to achieve durable and sustainable BiOps issued by USFWS and NOAA Fisheries that account for the updated status of the species and species' needs as developed through ongoing collaborative science processes, operation of CVP and SWP facilities, existing operations of the CVP and SWP, and operation of potentially new components of the CVP and SWP.

Long-term Operations Biological Opinions Annual Science Review

The NOAA Fisheries' BiOp requires Reclamation and NOAA Fisheries to host a workshop no later than November 30 of each year. The purpose of the annual workshop is to review the effectiveness of the prior year's water operations and regulatory actions prescribed in the BiOps' reasonable and prudent alternatives. The review was expanded to include a review of the implementation of the USFWS BiOp's reasonable and prudent alternatives. The review will enable NOAA Fisheries and USFWS to use lessons learned, incorporate new science, and make appropriate, scientifically justified adjustments to the reasonable and prudent alternatives and their implementation. The annual reviews have been conducted since 2010.

In April 2016, Reclamation and NOAA Fisheries agreed to temporarily modify the frequency of the Long-term Operations Biological Opinions Annual Science Review from annual to biennial from 2016 through

Endangered Species and Biological Opinions

An endangered species is one in danger of extinction in all or a significant portion of its range; a threatened species is one likely to become endangered. The federal Endangered Species Act (ESA; Title 16, United States Code Sections 1531–1544 [1973]) and the California Endangered Species Act (CESA; California Fish and Game Code Sections 2050–2100 [1984]) are designed to protect threatened and endangered species by ensuring federal and State agencies adopt measures to protect the species during the design, construction, and operation of projects, or for other forms of agency action, and prohibit the unauthorized take of endangered species. Biological opinions (BiOps) and incidental take permits are issued to protect ESA- and CESA-listed species.

ESA Section 7 requires federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species or modify their critical habitat, otherwise formal consultation is required. Federal agencies must consult with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service (the wildlife agencies). As part of the consultation process, the wildlife agency issues a BiOp which states the agency's determination of whether the action is likely to jeopardize a species or adversely modify critical habitat. If the wildlife agency determines an action will jeopardize or adversely modify, it will specify reasonable and prudent alternatives that the "action agency" may take to avoid the likely jeopardy or adverse modification. In the BiOp, the wildlife agency includes an incidental take statement that estimates the amount or extent of incidental take likely to result from the action and specifies terms and conditions to implement to minimize the impacts of the incidental take.

CESA is substantially similar to ESA in all aspects. Under CESA, an incidental take permit issued by the Department of Fish and Wildlife can allow for the take of State-listed species if specific criteria are met, including measures to minimize and mitigate the impacts of authorized take.

2020. After that, Reclamation and NOAA Fisheries will evaluate whether to make this change permanent or consider additional changes. The most recent science review was held in December 2017.

Delta Operations for Delta Smelt and Longfin Smelt

The Smelt Working Group is an interagency team of experts on delta smelt (*Hypomesus transpacificus*) and longfin smelt (*Spirinchus thaleichthys*) biology that meets regularly from December through June to assess the risk to

delta smelt and longfin smelt from operations at the CVP and SWP export facilities. Based on near real-time technical information, such as fish distribution, salvage, and physical water conditions, the Smelt Working Group makes recommendations on export operations to the USFWS and DFW with the goal of reducing entrainment of the two species. Recommendations are based on guidelines outlined in the 2008 USFWS BiOp and the 2009 DFW longfin smelt incidental take permit (see Bulletin 132-10).

The 2017–2018 water year was a below normal year in terms of precipitation. The USFWS issued one determination on March 26 initiating Component 2, Action 3 of the BiOp to protect larval and juvenile delta smelt, requiring that Old Middle River flows remain more positive than -5,000 cubic feet per second on a 14-day running average, with a simultaneous five-day running average no more negative than -6,250 cubic feet per second.

Fish Restoration Program

Pursuant to the USFWS and NOAA Fisheries BiOps and the DFW longfin smelt incidental take permit (see Bulletin 132-11), the Fish Restoration Program (FRP) continued to make progress toward fulfilling its restoration requirements.

Prospect Island

Prospect Island is in the Cache Slough Complex immediately east of the southern end of the Yolo Bypass in the Delta. This tidal restoration project will convert roughly 1,609 acres of flooded uncultivated land to fully tidal habitat.

The public draft EIR was released for public comment in August 2016. DWR's response to comments and finalization of the EIR had been delayed while DWR negotiated with Local Agencies of the North Delta and Reclamation. In the process of negotiations and further design refinement, additional information related to some of the impacts have been added, resulting in the need to partially recirculate the draft EIR. DWR is working to prepare the recirculation for public review in early 2019 and hopes to finalize the EIR in the spring or summer of 2019.

DWR has submitted all permit applications with the exception of the Lake and Streambed Alteration Agreement (DFW 1600) and incidental take permit for giant garter snake. DWR is working with the USACE 408 section

on finalizing the National Environmental Policy Act document.

DWR North Central Region Office continued to conduct hydrologic monitoring from an existing network of 29 monitoring wells (20 on Prospect Island and nine on Ryer Island), three surface water stations, two Ryer Island drainage ditch stations, and the Hastings Tract East Station (for local precipitation).

DWR continued to clear vegetation on the Miner Slough levee, using a combination of boom mowers and goat herds, to facilitate levee inspections. Priority levee repair sites were monitored to ensure they not become critical, and small repairs were conducted as needed.

Decker Island

Decker Island is located in the Delta along the Sacramento River at Horseshoe Bend. The project site is currently an established emergent wetland with muted tidal connectivity to Horseshoe Bend to the south that transitions to upland habitat in the north. The project will enhance up to 140 acres of tidal wetland, associated high marsh, and riparian habitats. The chosen project design includes work to lower a section of the northern levee by 300 feet, widening the existing southern breach and reconfiguring the internal berms. These actions together will increase access to benefit native fish species, inhibit the establishment of invasive vegetation, and enhance access to upland habitat. A mitigated negative declaration and initial study were released for public review in August 2016, and the final California Environmental Quality Act document was adopted in April 2017. Construction of the restoration project was completed in 2018; contractors mobilized to the project site on August 13 and demobilized on October 11, 2018. In December 2018, trees were planted to mitigate for the trees removed during construction. The FRP monitoring

program will begin post-project monitoring in 2019.

Bradmoor Island

Located within Suisun Marsh, Bradmoor Island includes 730 acres of managed wetlands, tidal berms, and associated uplands in three parcels. DWR purchased the 245-acre Overlook Club (Property 332) in February 2013, the 257-acre Flying D Club (Property 329) in February 2016, and the 253-acre Wildwing Club (Property 330) in March 2017. All three properties will be restored to tidal action together and will be connected through interior breaches. Restoration planning began concurrently with property acquisition. The island was managed as three separate duck clubs under lease agreements with DWR. Prior to tidal restoration in 2022, Bradmoor Island will be managed to control *Phragmites australis*, an invasive tall emergent plant. Ponds on-site may be flooded to encourage native species growth or drawn down to spray and mow *P. australis* as needed. Restoration will result in conversion of managed seasonal wetlands to tidal wetlands at intertidal and subtidal elevations, as well as enhancement of adjacent tidal wetlands.

Arnold Slough

Arnold Slough is located in eastern Suisun Marsh, adjacent to the Blacklock restoration project and across Nurse Slough from the Bradmoor Island tidal habitat restoration project.

Arnold Slough (Property 604) is a 260-acre property DWR acquired in April 2017. Shortly after being purchased, the water control structure on the exterior levee was displaced due to high water events. DWR repaired the water control structure in August 2017. The property is managed as a duck club under a lease agreement that will last until April 2020. The lease was extended as a grazing lease to control upland weeds, while allowing for more flexibility for water

management to control potential *P. australis* invasions. Restoration is anticipated to be completed by fall 2021. Restoration will result in conversion of managed seasonal wetlands to tidal wetlands at intertidal and subtidal elevations, and enhancement of adjacent tidal wetlands.

Chipps Island

Chipps Island is at the western boundary of the Delta and is the southernmost portion of Suisun Marsh. Chipps Island is comprised of three main parcels: north, east, and west. In September 2017, DWR acquired the north and east parcels. The western parcel is owned by The Metropolitan Water District of Southern California. DWR began surveys for restoration planning in 2017. A digital elevation model was created in the summer and a preliminary wetland delineation report was completed in December 2018. Five restoration designs were modeled for hydrodynamics and particle tracking in September and October 2018. Restoration designs will be further developed in 2019.

As part of the acquisition negotiation, DWR agreed to remediate three notices of violations issued to the previous landowner. Remediation includes removal of floating docks, removal of a shipping container, and mitigation for construction of an internal levee. The floating docks were removed in December 2017, and DWR is completing permit applications to remove the shipping container. The shipping container is anticipated to be removed in August 2019. Mitigation for construction of the internal levee is being incorporated into restoration designs.

Winter Island

Winter Island is in the Delta at the confluence of the Sacramento and San Joaquin rivers. DWR acquired approximately 589 acres on Winter Island in 2016 for tidal wetland restoration. A draft mitigated negative declaration was released for public review

in September 2018. The restoration project consists of three project elements: (1) breaching and widening the southern levee; (2) widening an existing eastern tidal channel; and (3) breaching the northern levee. All permit applications for the project were submitted in September and October 2018. Project construction is anticipated to begin in 2019.

Tule Red

Tule Red is adjacent to Grizzly Bay within the Suisun Marsh. The vast majority of the site is a managed marsh, with the northern end being tidal marsh. The project will convert roughly 420 acres of existing managed wetlands to tidal habitat. Restoration activities include grading, revegetation, and other associated activities on the landside of a natural interior berm. Following a period of one year to allow revegetation of disturbed soils, the site will be breached to allow the site to become fully tidal. In mid-September 2016, the contractor started construction of the initial restoration activities. See Bulletins 132-17 and 132-18 for more information.

The contractor completed Phase I of construction in 2018, which included earthwork to construct the tidal channel network, a series of tidal pannes and basins, and the habitat berm. Revegetation of the disturbed soils occurred in fall 2018. Phase II of construction, scheduled for 2019, will include demolishing the clubhouse and breaching the natural berm to allow full daily tidal exchange with the interior of the project site.

Lookout Slough

Lookout Slough is located in the Cache Slough Complex, just north of Rio Vista, and is expected to yield 3,000 delta smelt habitat acre credits toward the USFWS BiOp and DFW incidental take permit. The project's contractors are implementing the design and construction. It is a multi-benefit project that, in addition to habitat benefits to delta smelt,

will expand the Yolo Bypass and enhance flood benefits to the region.

Lower Yolo Ranch

Lower Yolo Ranch is located within the Cache Slough Complex at the southern end of the Yolo Bypass floodway. The Lower Yolo Ranch restoration project is expected to yield approximately 1,732 acres of delta smelt habitat credit toward the USFWS BiOp and the DFW incidental take permit, and 2,147 acres toward the NOAA Fisheries BiOp. The newly created tidal marsh habitat will be connected to adjacent tidal marshes and open water to create greater food web productivity for the benefit of listed fish species as well as other native fish and wildlife.

Fish Restoration Program Requests for Proposals

The FRP continued efforts to acquire more restoration properties. In an effort to reach its BiOp restoration requirements, DWR developed a process to solicit proposals for restoration projects in which private and nonprofit entities would acquire property and develop and implement tidal habitat restoration projects that meet DWR criteria. The solicitation period ended in February 2017, at which time the FRP evaluated submitted proposals. Two proposals, Yolo Flyway Farms tidal habitat restoration project and Wings Landing tidal habitat restoration project, were selected and entered into habitat restoration project agreements as of August 1, 2017. Each contract has a specified number of deliverables that will be paid through the duration of the contract. Successful completion of the tidal habitat restoration projects will ultimately result in creditable acres that will be applied to DWR's mitigation requirement.

Yolo Flyway Farms. The Yolo Flyway Farms tidal habitat restoration project was acquired through the request for proposals

FRP issued in 2016. The project will restore approximately 294 acres of seasonal wetland and cattle grazing land to tidal and subtidal marsh. The project site is located within the Cache Slough Complex near Little Holland Tract, Liberty Island, and Prospect Island, and is directly adjacent to the Lower Yolo Ranch property.

Construction activities at Yolo Flyway Farms began on August 2, 2018, and were completed by September 28, 2018. Construction included excavating the large channel and breach in the southern region of the property as well as the smaller northern channel and breach, along with adjacent benches to each. An internal road and field berm were removed to allow water to move more freely around the site, and approximately 70 concrete and metal duck blinds and culverts were also removed and disposed of. Following earthwork, all disturbed areas were disked to reduce compaction and seeded with native vegetation. Salvaged tule rhizomes were planted along the intertidal bench.

Wings Landing. DWR entered into an agreement with a contractor in 2017 to complete the Wings Landing tidal habitat restoration project, which was designed to restore a managed duck club to a tidally influenced marsh system in Solano County. The project site is located in north-central Suisun Marsh, a mile south of Suisun City, within the Suisun Marsh Plan Region 1. The entire 267-acre site will be permanently protected, of which 240.91 acres are anticipated to be credited at a 1:1 ratio for “restoration” as determined by the Fish Agency Strategy Team, and an additional 17.17 acres are anticipated to be credited as “enhanced” at an 0.8:1 ratio for 13.74 acres of credit. In total, the project’s goal is to achieve approximately 257 acres of credit from the regulatory agencies for delta smelt, longfin smelt, and salmonids. Restoration of the project site will benefit listed species and native California tidal marsh ecosystems

through habitat protection, creation, and enhancement, and support food web productivity.

In 2018, the restoration design for the project was finalized and the contractor began outreach with stakeholders and regulatory agencies to begin the permit application process. Construction is anticipated to begin in either summer 2020 or 2021.

Monitoring and Research

In 2018, the FRP Monitoring Group collected pre-project data at future restoration sites and existing comparison wetlands to enable the eventual assessment of hypotheses regarding fish habitat and food web benefits of tidal wetland restoration. Several invertebrate communities that contribute to delta smelt, longfin smelt, and juvenile Chinook salmon diets, including meso- and macrozooplankton, and benthic, drift, and epiphytic invertebrates, were collected during the spring at sites in the Cache Slough Complex, Sacramento-San Joaquin Confluence, Grizzly Bay, and Suisun Marsh. Invertebrates at the Cache Slough and Confluence sites were sampled again in the fall. Additionally, meso- and macrozooplankton and water nutrients were sampled from March to June and from September to December. In wetland-adjacent shallow waters near channel stations, sampling was conducted during nearly the same periods as the Interagency Ecological Program 20mm Survey, the fall midwater trawl, and the Environmental Monitoring Program. This was the second of three years of data collection intended to characterize the relevance of channel sampling to tidal wetland restoration. Similarly, sampling for fish in shallow wetland or wetland-adjacent waters was paired with collections in the deeper channels by the summer tow net and fall midwater trawl surveys for a second year.

In addition to the ongoing monitoring efforts, FRP is conducting research in Suisun Marsh

and the Delta investigating the effectiveness of restoration techniques to deter invasive plant establishment. The revegetation studies that compare methods of active revegetation of native plant species moved forward at the Dutch Slough (Delta Conservancy Proposition 1 grant-funded) and Bradmoor Island restoration sites. Installation of the experimental treatments was completed at Bradmoor Island in September 2018 and at Dutch Slough in October 2018. Monitoring began in December 2018 at Dutch Slough and will begin in early 2019 at Bradmoor Island and continue for approximately three years. The FRP continued planning for an investigation of integrated pest management methods to control the invasive common reed (*P. australis*) at FRP sites within Suisun Marsh. A Delta Conservancy Proposition 1 (Assembly Bill 1471, Rendon, Water Quality, Supply, and Infrastructure Improvement Act of 2014) grant was submitted in December 2018, and pre-application meetings continued throughout 2018 with permitting agencies. Study implementation is planned for summer 2019.

Decisions on Endangered Species

Table 3-1 lists fish species of concern found in the Delta. No status changes were made in 2018.

Trends in Fish Abundance

Abundance indices for longfin smelt and delta smelt are computed using the DFW's fall midwater trawl sampling conducted every year from September through December. Index calculations are based on average catch per trawl for 100 core index stations, which are partitioned into 14 geographic areas. The average monthly catch per tow in each area is multiplied by a weighting factor based on the estimated volume of water in each area. The resulting values are then summed over all areas and months to obtain the annual index. The fall abundance index serves as an indicator for adult longfin and delta smelt populations over a long period of time, and the 2018

Table 3-1 Special Status Delta Fish Species

| Common Name | Scientific Name | ESA Listing | CESA Listing |
|--------------------------------------|------------------------------------|------------------------------------|------------------------|
| delta smelt | <i>Hypomesus transpacificus</i> | threatened ¹ (4/5/1993) | endangered (1/20/2010) |
| longfin smelt | <i>Spirinchus thaleichthys</i> | candidate ² (4/2/2012) | threatened (4/5/2009) |
| Chinook salmon (winter-run) | <i>Oncorhynchus tshawytscha</i> | endangered (2/3/1994) | endangered (9/22/1989) |
| Chinook salmon (spring-run) | <i>Oncorhynchus tshawytscha</i> | threatened (11/15/1999) | threatened (2/5/1999) |
| Chinook salmon (fall-/late fall-run) | <i>Oncorhynchus tshawytscha</i> | species of concern | none |
| steelhead (Central Valley DPS) | <i>Oncorhynchus mykiss</i> | threatened (5/18/1998) | none |
| green sturgeon (southern DPS) | <i>Acipenser medirostris</i> | threatened (6/6/2006) | none |
| Sacramento splittail | <i>Pogonichthys macrolepidotus</i> | none | species of concern |
| Pacific lamprey | <i>Entosphenus tridentata</i> | species of concern | species of concern |
| river lamprey | <i>Lampetra ayesii</i> | species of concern | species of concern |

ESA = federal Endangered Species Act

CESA = California Endangered Species Act

DPS = distinct population segment

¹ In April 2010, the USFWS found that reclassification of delta smelt from threatened to endangered was warranted but precluded by other higher priority listing actions.

² On April 2, 2012, the USFWS found that listing the San Francisco Bay-Delta DPS as threatened or endangered was warranted but precluded by other higher priority listing actions and has added the San Francisco Bay-Delta DPS of longfin smelt to its list of candidate species.

indices are applicable to take limits for the 2019 winter/spring season.

The fall midwater trawl abundance index for longfin smelt is shown on Figure 3-1. The index for 2018 was 52, lower than the index in 2017 and consistent with the low abundances that have persisted since the early 2000s.

Figure 3-2 shows the fall midwater trawl abundance index for delta smelt. In 2018, the index dropped to 0 for the first time since the survey began in 1967, continuing the downward trend observed in the past few years despite extremely wet conditions in 2016–2017.

Figure 3-3 shows estimates of returning adult winter-run Chinook salmon from 1970 through 2018. These estimates, referred to as escapement estimates, are the number of adults that escape mortality and return to spawn. The Sacramento River winter-run Chinook salmon escapement estimates are generated from the DFW carcass survey. DFW has been using the carcass survey data to generate escapement estimates since 2001, prior to which Red Bluff Diversion Dam counts were used. The estimated winter-run Chinook salmon escapement for 2018 was 2,639, which was a 170 percent increase from the 2017 escapement estimate.

Figure 3-4 shows estimates of returning adult spring-run Chinook salmon from 1985 through 2018. Individual estimates are shown for the Feather River Fish Hatchery (FRFH) and the principal spring-run spawning streams: Battle Creek, Clear Creek, Mill Creek, Deer Creek, and Butte Creek. The escapement estimates are shown separately for each stream because the Feather River estimate is based on returns to the FRFH, where the genetic integrity of spring-run Chinook salmon is uncertain. The estimated escapement for 2018 was 2,110 for the FRFH and 2,804 for the other streams combined. The 2018 escapement estimate

was two times lower than the 2015 parent stock estimate for the FRFH, but higher than the 2017 FRFH escapement estimate. For naturally spawned fish in Battle, Clear, Mill, Deer, and Butte creeks, the 2018 estimate was 2.4 times higher than the 2015 parent stock estimate. Lastly, due to the lack of comprehensive monitoring programs, there are no reliable escapement estimates for wild Central Valley steelhead.

Pelagic Organism Decline in the Upper San Francisco Estuary

By the early 2000s, long-term monitoring by the Interagency Ecological Program revealed marked declines in numerous pelagic (open water) fish species in the upper San Francisco Estuary (the Delta and Suisun Bay). This decline has collectively become known as pelagic organism decline.

Pelagic fish species in decline include delta smelt, longfin smelt, striped bass (*Morone saxatilis*), and threadfin shad (*Dorosoma petenense*). These declines resulted in significant management consequences, including limits on SWP and CVP pumping operations for the protection of delta smelt (listed as threatened under ESA and endangered under CESA) and longfin smelt (listed as threatened under CESA).

Since 2005, Interagency Ecological Program scientists have been coordinating studies investigating potential causes of pelagic organism decline. In 2010, an “ecosystem regime shift” conceptual model was put forward, hypothesizing that pelagic organism decline was caused by changes to multiple and interacting environmental variables, such as outflow, turbidity, and salinity, which led to fundamental changes to the Delta ecosystem. This conceptual model has served as a working hypothesis for continuing pelagic organism decline investigations since 2011. In early 2012, the

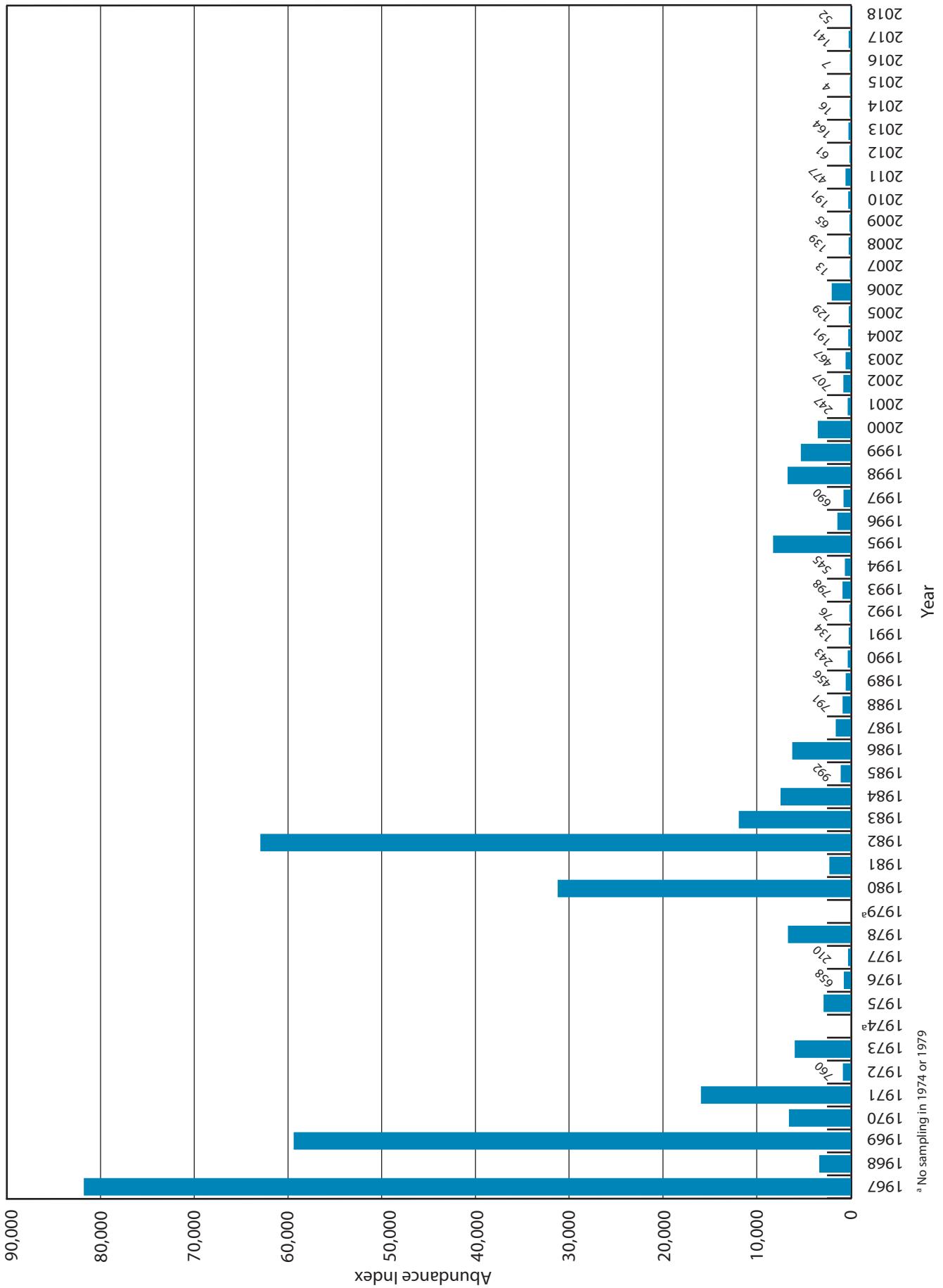


Figure 3-1 Longfin Smelt Fall Midwater Trawl Abundance Index, 1967–2018

^a No sampling in 1974 or 1979

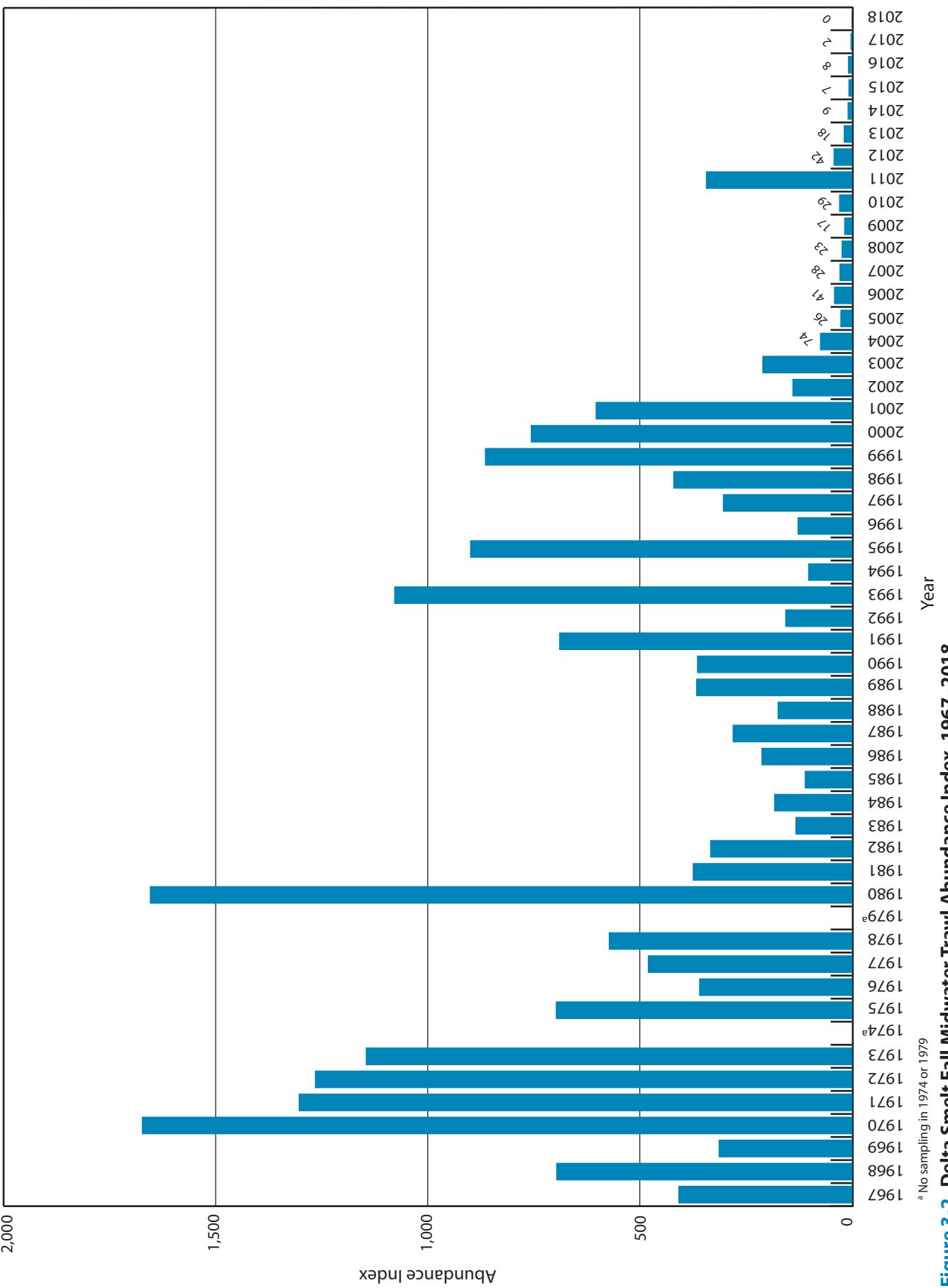


Figure 3-2 Delta Smelt Fall Midwater Trawl Abundance Index, 1967-2018

^a No sampling in 1974 or 1979

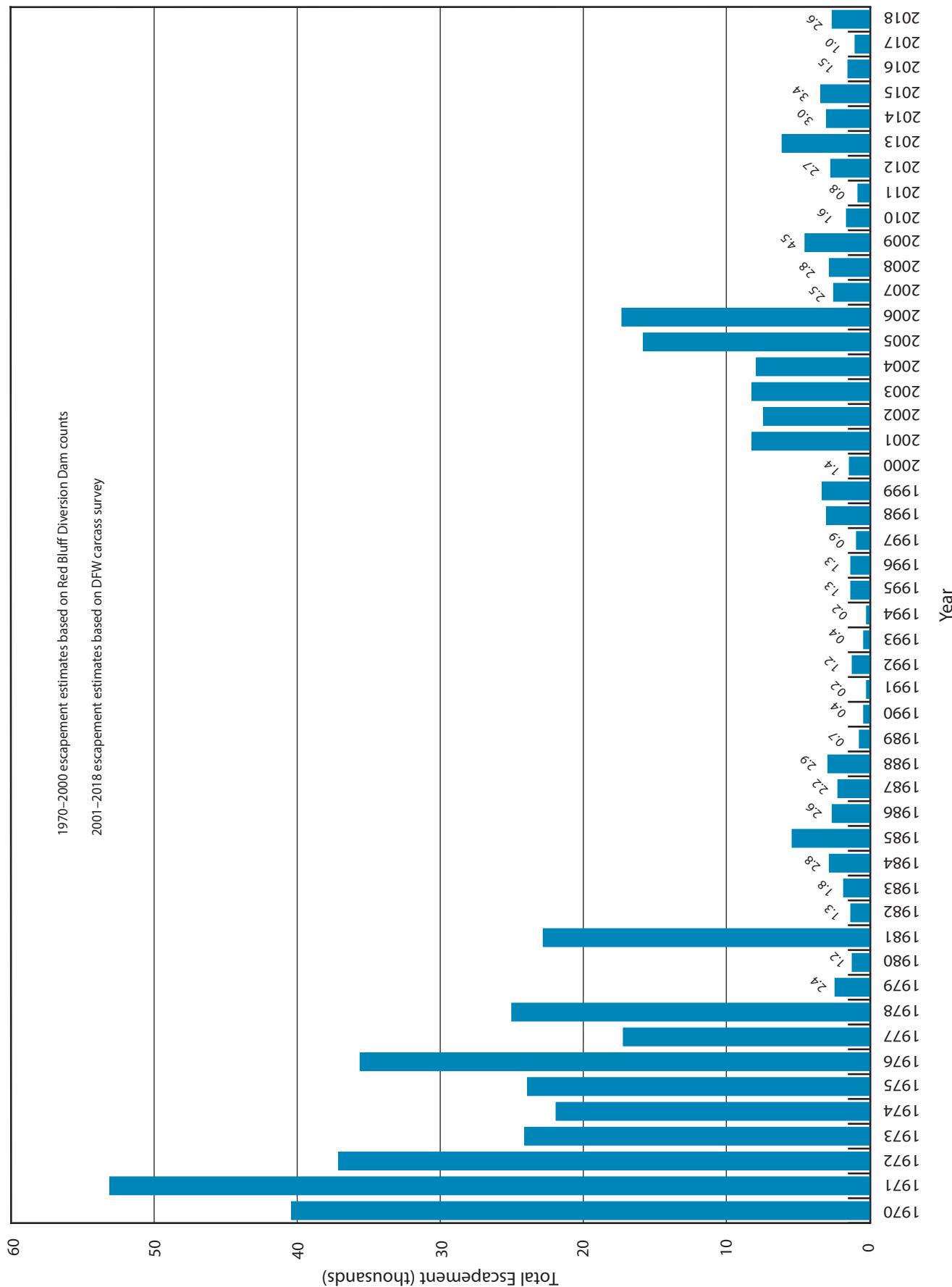


Figure 3-3 Estimated Total Adult Winter-run Chinook Salmon Escapement, 1970–2018

Interagency Ecological Program formed the Management, Analysis, and Synthesis Team to synthesize scientific datasets with the goal of addressing these pressing management information needs.

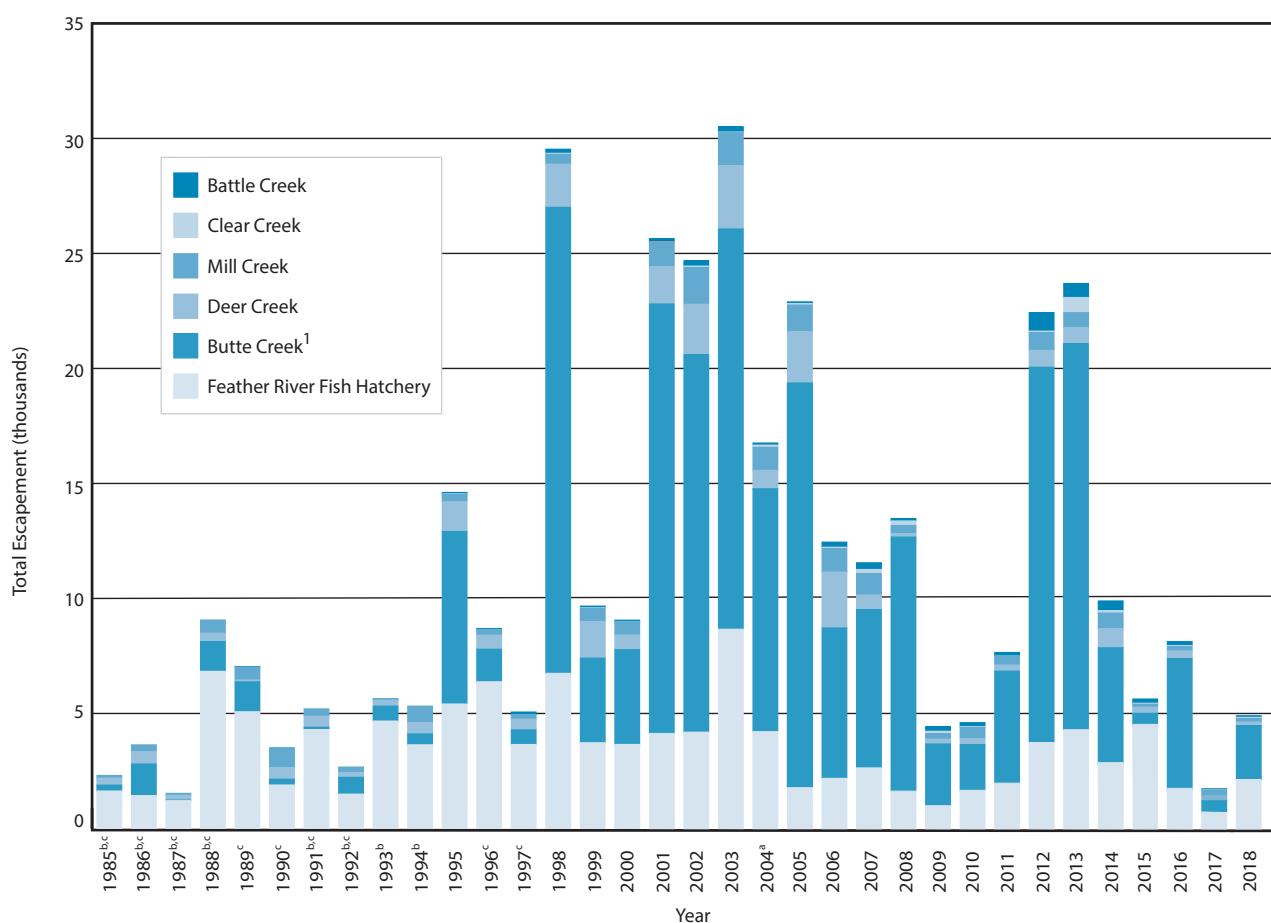
Some of the scientific studies and synthesis efforts initiated in 2018 that will enhance DWR's knowledge of fish abundance, distribution, and response to management actions are listed below:

- research synthesis and directed study evaluating the effects of fall and/or spring outflow actions on delta smelt habitat, condition, and survival

- research synthesis on the status of native cypriniform fishes in the Delta and their associations with environmental factors
- a pilot study examining the effect of Suisun Marsh Salinity Control Gates operation on delta smelt habitat
- development of an aquatic habitat sampling platform that allows for standardized fish community sampling across a variety of habitat types

Feather River Fish Studies

In the early 1990s, the Feather River fish studies were initiated to document and



¹ From 1985–2000, Butte Creek estimates were based on snorkel surveys.

From 2001–2018, Butte Creek estimates were based on carcass surveys.

^a In 2004, the Feather River Fish Hatchery ladder was only open September 15–30 instead of the typical 30 days.

^b Zero count or no data for Battle Creek

^c Zero count or no data for Clear Creek

Figure 3-4 Estimated Total Adult Spring-run Chinook Salmon Escapement, 1985–2018

monitor fish populations in the lower Feather River. Early efforts focused on studies to identify flow requirements for Chinook salmon and steelhead. The program has progressively expanded since the mid-1990s, in preparation for the FERC relicensing of the Oroville Facilities and then to satisfy the NOAA Fisheries BiOp for CVP and SWP long-term operations. More recently, efforts have been focused on satisfying the NOAA Fisheries BiOp with the Oroville Facilities license issuance in mind by developing baseline information that satisfies current requirements and will also directly benefit planning and implementation of license requirements. Field program elements have included operation of rotary screw traps, acoustic and radiotelemetry, salmon and steelhead spawning surveys, salmon escapement surveys, spring-run Chinook salmon tagging, otolith thermal marking studies, snorkel and beach seining surveys, green sturgeon studies, steelhead passive integrated transponder and acoustic tagging, hatchery juvenile Chinook salmon movement and survival studies, and salmonid predator studies.

The study area is generally divided into the low-flow channel, from the Fish Barrier Dam downstream to the Thermalito Afterbay Outlet, and the high-flow channel, from the Thermalito Afterbay Outlet downstream to the confluence with the Sacramento River at Verona (see Figure 3-5).

Rotary Screw Traps

In 2018, rotary screw traps were used at two locations within the Feather River to assess the emigration timing and general abundance of juvenile Chinook salmon and steelhead. Within the low-flow channel, one rotary screw trap was stationed at the bottom of Eye Side Channel at RM 60.2, one mile above the Thermalito Afterbay Outlet. Within the high-flow channel, one rotary screw trap was stationed at Herring Riffle, RM 45.7.

Although Chinook salmon and steelhead were the primary targets of trapping efforts, records were kept on all fish species caught. Twenty-five species were caught during the 2018 trapping season. Chinook salmon was the dominant species, comprising over 97 percent of the catch. Of the total salmon catch during the 2018 trapping season, 128,395 (93 percent) were caught in the low-flow channel, and 9,993 (7 percent) were caught in the high-flow channel.

During the 2018 trapping season, approximately 89 percent and 76 percent of the salmon trapped and measured in the low-flow channel and high-flow channel, respectively, were less than 50 millimeters, demonstrating the majority of Feather River salmon emigrate the upper river well before smolting. Salmon emigration was observed as soon as the traps were deployed in late November, peaked in January and February, and continued into June at very low levels. Separate fall-run Chinook salmon emigration estimates were developed for the low-flow channel and the high-flow channel. For the 2018 trapping season, the fall-run passage estimate was 1,898,000 in the low-flow channel and 473,200 in the high-flow channel.

Based on adult escapement, average fecundity, and the emigration estimate, the egg-to-fry survival rate for fall-run Chinook juveniles in the low-flow channel was 5.2 percent in 2018. The emigration index (per capita production) of juveniles was 272.

In 2018, 167 wild young-of-the-year and one adult steelhead were captured in the low-flow channel and high-flow channel traps.

Salmon Escapement Survey

The Chinook salmon escapement survey provides information critical to the management and conservation of Feather River salmon populations. The primary purpose of the salmon escapement survey

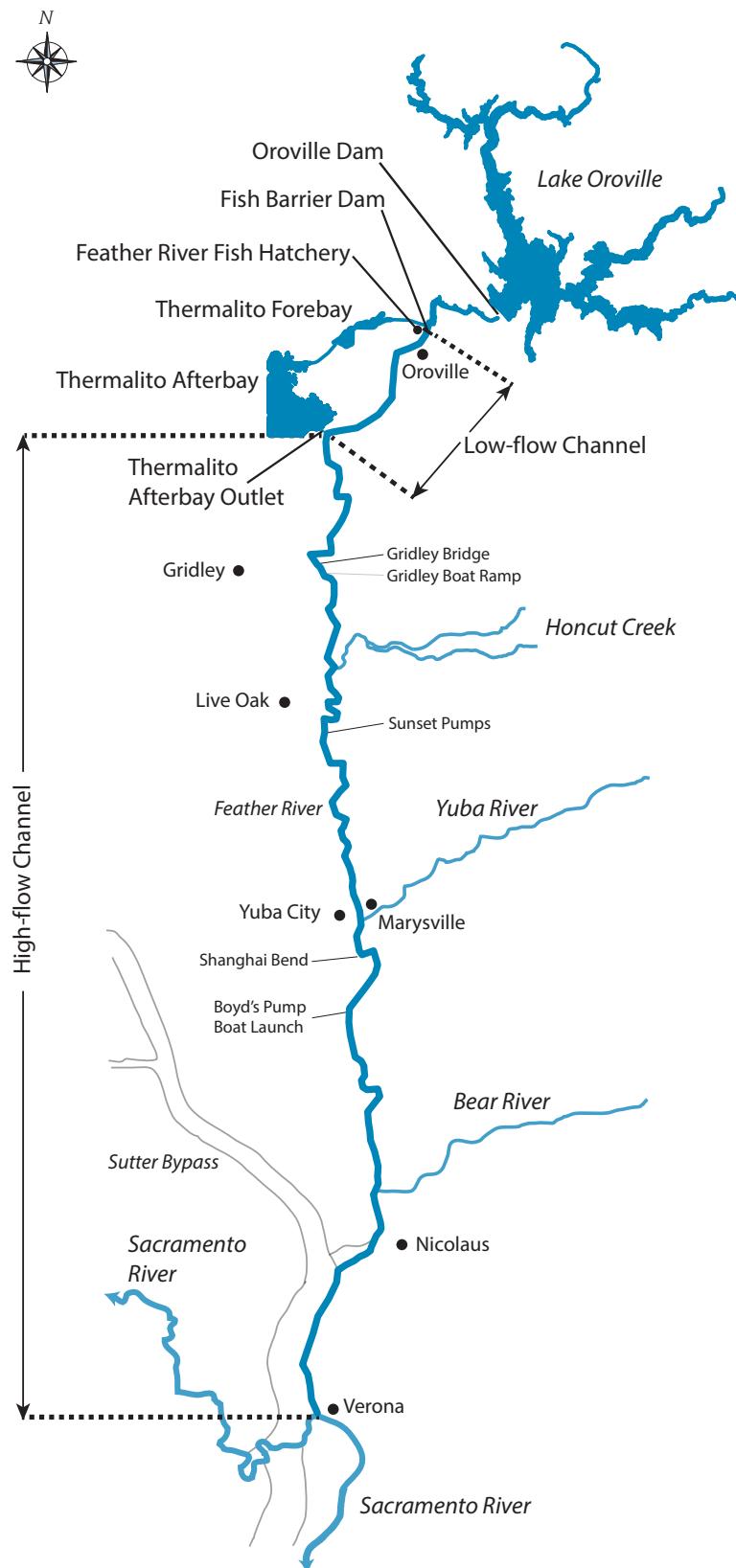


Figure 3-5 The Lower Feather River

is to determine the abundance of Chinook salmon spawning in the lower Feather River by mark-recapture methods using salmon carcasses. Other important objectives are the following:

- (1) Catalog the distribution and success of spawning.
- (2) Estimate the number of hatchery salmon spawning in the river.
- (3) Collect biological samples (scale and otolith) for later analysis.

The 2018 escapement survey began on September 4 and ran uninterrupted until November 8. The following day, on November 9, crews were forced to halt the survey due to heavy smoke from the nearby devastating Camp Fire. During the following two weeks, limited surveys were performed as air quality conditions allowed. The full surveys were resumed during the week of November 26 and continued to December 20. The survey area covered 16 river miles of the lower Feather River from the Table Mountain Bridge in downtown Oroville to the East Gridley Road Bridge. The population estimate includes both naturally spawning fall- and spring-run Chinook salmon since their spawning is currently not segregated on the Feather River.

The escapement survey resulted in an in-river spawning population estimate of 45,826 Chinook salmon for the lower Feather River in 2018. The total spawning population consisted of an estimated 39,210 adults, and 6,616 grilse (presumably two-year-old salmon). The number of grilse in the escapement is an important metric in projecting future salmon abundance, as well as the number of salmon available for the commercial and recreational fisheries the following year. Feather River Chinook salmon annually make up a large proportion of the total population of Chinook salmon harvested off the coast and in inland California.

Spawning Surveys

To better understand Feather River salmon and steelhead spawning distribution and response to restoration actions, redd surveys (a redd is a shallow depression in a streambed, excavated by a salmonid and containing deposited fish eggs) are performed to identify the location, timing, magnitude, and physical characteristics of natural spawning sites in the lower Feather River. The surveys are generally performed weekly, and, depending on the survey type, much of the available spawning area between the Fish Barrier Dam and Gridley Bridge is searched.

Chinook Salmon

Operation of the Oroville Facilities for the last 50 years has resulted in the lack of recruitment of bed load material to the lower Feather River, resulting in degraded spawning habitat and increased competition for the remaining suitable spawning gravels on riffles by anadromous fish, particularly between spring-run and fall-run Chinook salmon. In 2014, The B105 Gravel Supplementation and Improvement Project was constructed to address this problem. In June and July 2014, 8,300 cubic yards of clean spawning gravel were added to the Feather River near the Feather River Fish Hatchery.

In early 2017, a series of high-flow events in the low-flow channel removed much of the spawning gravel placed during the B105 Gravel Supplementation and Improvement Project in 2014. Additionally, the high flows filled in a small side channel below the FRFH known as Moe's Side Channel. In June 2017, DWR initiated the 2017 Gravel Supplementation Project to replace 5,000 cubic yards of displaced spawning gravel in certain locations of the 2014 gravel project area and remove approximately 3,000 cubic yards of gravel from Moe's Side Channel.

In 2018, redd mapping was performed in the gravel supplementation areas and other spawning sites in the low-flow channel and high-flow channel to document use and provide information for future gravel projects in the lower Feather River.

Ground surveys for the 2018 Chinook salmon redd survey began on September 18 and continued until November 28. The redd survey consisted of a total of 31 days over 10 survey weeks. In the gravel supplementation project area, surveys were concentrated in lower, middle, and upper Auditorium Riffle as well as the section between Cottonwood Riffle and upper Moe's Side Channel. Hatchery Riffle, upper Hatchery Riffle, and Moe's Side Channel were also sampled. Redd surveys were also performed in the low-flow channel below the gravel supplementation project area and in the high-flow channel from the Thermalito Afterbay Outlet to the Gridley Bridge.

During the 10 weekly surveys, 4,156 redds were found within the low-flow and high-flow channels of the Feather River. A total of 3,937 redds were mapped in the low-flow channel, and 219 redds in the high-flow channel. Within the low-flow channel, 2,875 redds (73 percent) were discovered inside the gravel supplementation project area and 1,062 outside the gravel supplementation project area.

The week 6 survey (October 22–26), which covered the area from Table Mountain Riffle to Lower Auditorium Riffle, revealed the highest number of redds ($n=1,117$). The locations with the largest number of redds were Lower Auditorium with 724 (17.4 percent) and Top of Auditorium with 530 (12.8 percent). The average depth for all salmon redds was 0.45 meters (1.48 feet), and the average water velocity was 0.61 meters (2.0 feet) per second. The average redd length and width was 3.0 meters (9.8 feet) by 1.4 meters (4.6 feet), respectively.

Steelhead

Beginning in 2003, DWR began collecting information on steelhead redds in the lower Feather River below Oroville Dam. This information is collected to better understand natural steelhead spawning and production in conjunction with FRFH steelhead spawning. The primary objectives of the project were to

- (1) obtain detailed information on the relative abundance and distribution of spawning steelhead;
- (2) provide baseline data on the physical characteristics of steelhead redds for modeling exercises and inform future restoration projects; and
- (3) comply with requirements regarding steelhead abundance in the NOAA Fisheries 2004 operation criteria and plan BiOp.

In 2018, the steelhead redd survey was conducted for 13 weeks from December 20, 2017, to March 15, 2018. Steelhead redd surveyors observed 162 steelhead redds and 67 adult steelhead associated with redds during sampling. With the exception of three steelhead redds in the high-flow channel, all others were found in the low-flow channel. Average redd length was shown to be 1.25 meters (4.10 feet) with an average redd width of 0.77 meters (2.53 feet).

FRFH Spring-run Chinook Salmon Tagging

To better manage broodstock selection at the FRFH, a program was developed in 2003 to mark spring-run Chinook salmon entering the FRFH in the spring. The spring-run Chinook salmon tagging program allows DFW to segregate the spawning of spring- and fall-run Chinook salmon in the hatchery in the fall when the populations are mixed together in the fish ladder. The program also investigates potential differences in spawning distribution and

timing of the early arriving spring-run Chinook salmon in the river.

Early arriving spring-run Chinook salmon entering the hatchery in May and June were marked with individually numbered dart tags for identification. Once marked, the fish were released back into the river. During the hatchery spawning season, the tags enabled hatchery staff to distinguish the early arriving spring-run fish from fall-run, allowing segregated spawning for each run. The tags also enabled the escapement survey crew to differentiate spring- and fall-run salmon, so that any potential differences in spawning success, distribution, or behavior of the two runs can be analyzed.

In 2018, 3,175 Central Valley spring-run Chinook salmon were tagged at the FRFH. Tagging began on May 21 and ended on July 5. Hatchery spawning began in late September, and a total of 2,322 tagged fish were recaptured: 2,114 at the FRFH and 208 in the river escapement survey, for a hatchery return rate of 91 percent.

Snorkel Surveys

From 1999 to 2007, DWR conducted snorkel surveys focused on juvenile steelhead, while other species were also counted in the process. In 2010, DWR reinstated the lower Feather River snorkeling surveys with the following objectives:

- (1) Determine the relative abundance and distributions of juvenile Chinook salmon and steelhead prior to habitat improvements.
- (2) Identify habitat conditions (depth, substrate, and cover) where juvenile Chinook salmon and steelhead occur.
- (3) Identify potential sites for channel improvement and structural habitat restoration.
- (4) Determine the spatial and temporal distribution of other non-salmonid fishes.

- (5) Collect information related to the fish community of the lower Feather River.

The FRP continued to collect data to determine the relative abundance and distributions of age-0 steelhead and salmon prior to habitat improvements from February to September in 2018. The duration of the survey was notably longer than in previous years due to low runoff conditions persisting through the spring months. The snorkel surveys were conducted at 21 permanent sites. All sites are in the upper 18 miles of the lower Feather River. Non-salmonid species were also identified and counted. The program succeeded in qualifying habitat characteristics where juvenile steelhead and salmon occur as well as identifying high-use areas of the low-flow channel that may benefit from habitat improvements.

A total of 65,954 Chinook salmon were identified during the 2018 snorkel surveys. The overwhelming majority of the Chinook salmon observations were of age-0 juveniles, as only 26 adults were observed. A total of 5,387 steelhead was identified and counted; all but 199 were considered juveniles (≤ 200 millimeters in length). No Chinook salmon were observed in the high-flow channel downstream of the Thermalito Afterbay Outlet after May of 2018, and no steelhead were observed in the high-flow channel after June of 2018. The absence of salmonids in the high-flow channel in the summer months is consistent with observations during previous years.

Beach Seining

DWR conducted beach seining surveys in the lower Feather River between January 1997 and August 2001 to document fish distribution throughout the lower Feather River. Since 2008, beach seining has occurred in all years but 2010 through 2012 to further document the distribution and condition of steelhead and salmon in both the low-flow and high-flow channels during the primary

emigration and rearing period (roughly December through July).

Although targeted at steelhead and salmon, beach seining is useful to augment rotary screw trap data for documenting the distribution and relative abundance of all fish species found in the lower Feather River. Beginning in 2015, the objectives for beach seining included two new components:

- (1) capturing spring-run smolts released from the FRFH to augment survival and emigration rate data collected via acoustic tagging studies
- (2) collecting random samples of juvenile Chinook salmon for an ongoing *Ceratonoova shasta* study

This study is looking at the rate of infection and disease from the parasite *C. shasta* experienced by juvenile Chinook salmon rearing or emigrating from the lower Feather River.

Beach seining surveys were conducted from January through September of 2018. A total of 128 seine hauls were conducted and 12,548 individual fishes were sampled during the 2018 survey. Native fishes dominated the beach seine catch ($n=12,445$) and represented nearly 99 percent of the overall catch. Sacramento sucker ($n=5,935$), juvenile Chinook salmon ($n=3,457$), and juvenile cypriniforms (minnows, $n=1,410$) were the most abundant groups captured. Other salmonids captured included juvenile steelhead ($n=274$), juvenile spring-run Chinook salmon ($n=360$), and hatchery origin juvenile Chinook salmon ($n=19$). The high-flow channel, downstream of the Thermalito Afterbay Outlet, accounted for 84.7 percent of the overall catch, where 10,628 fishes were captured.

Sturgeon Studies

Green Sturgeon

The data collected during green sturgeon studies in the lower Feather River relates to potential adult migration barriers, migration patterns, distribution, habitat preferences, annual abundance of adults, and identification of spawning and rearing areas. The data will assist DWR in making long-term management decisions concerning future monitoring programs, operational changes to the facilities, and/or habitat enhancement within the lower Feather River. This SWP project scope has not changed since the prior reporting year. Green sturgeon studies will expand once the FERC license is accepted and the new BiOp is in effect.

2018 Dual Frequency Identification Sonar Surveys

A total of 82 dual frequency identification sonar surveys were completed from January 23 to December 31, 2018. Surveys were conducted at 10 locations from the Bear River (RM 12) to the Fish Barrier Dam (RM 67). A total of 258 sturgeon detections occurred in the Feather River along with another 39 in and around the Bear River. The bulk of these detections were evenly distributed between the Fish Barrier Dam ($n=110$) and Oswald (RM 24; $n=109$) survey sites. Dual frequency identification sonar footage revealed an estimated 8–10 individuals at the Fish Barrier Dam, though the numbers could be greater due to the inability to survey its entirety because of blocked access. An estimate of 40–50 sturgeon were detected at Oswald on the October 23 survey. The bulk of the remaining detections occurred near Sunset Pumps Rock Weir (RM 38.5; $n=33$).

Egg Mat and D-net Surveys

Five sturgeon egg mats were deployed just downstream from the Fish Barrier Dam from May 22 through July 25, 2018. Larval D-nets

were deployed from June 11 through August 2, 2018, from the Fish Barrier Dam to Boyd's Pump. Temperatures during sampling ranged from 14.0°C (57.2°F) to 23.6°C (74.5°F). Flows during sampling ranged from 800 to 6,154 cubic feet per second. No sturgeon eggs were collected. Three green sturgeon larvae were recovered from the area just upstream of Boyd's Pump on June 13.

Sturgeon Angling/Telemetry

Eleven adult green sturgeon were tagged: four at the Fish Barrier Dam, five at Oswald, and two at the Daguerre Point Dam on the Yuba River (RM 11.4). The four sturgeon tagged at the Fish Barrier Dam resided there until the following spring when flows in the low-flow channel increased to 16,000 cubic feet per second in the first week of April. These same flow increases initiated emigration of two green sturgeon tagged at Daguerre Point Dam during the summer. It should be noted that all seven of the tagged fish from Oswald and Daguerre were detected moving upriver approximately 10 miles to Sullivan Ranch (RM 34) just before emigrating.

Additionally, a total of 28 acoustically tagged sturgeon entered into the lower Feather River system. Of those, 21 were identified as white sturgeon and seven as green sturgeon. The average date upon entering the Feather River was March 27 for the white sturgeon and April 18 for the green sturgeon. None of these tagged sturgeon were detected above Sunset Pumps even though dual frequency identification sonar and mark-recapture studies provided evidence of green sturgeon reaching the Fish Barrier Dam.

Ceratonova shasta Sampling

Ceratonova (synonym *Ceratomyxa*) *shasta* is a myxozoan parasite that infects salmonid fishes and is native to anadromous fish tributaries of the Pacific Northwest in North America, including the Feather River. *C. shasta* has a complex life cycle involving

an invertebrate polychaete worm host (*Manayunkia speciosa*) as well as the vertebrate salmon host. Infected worms release actinospores into the water that infect fish by attaching to the gills. The parasite spreads through the blood into the intestine and other organs and tissues. Myospores are released into the water when the fish dies and infect the worms, completing the life cycle.

A high prevalence of severe *C. shasta* infection (45–83 percent) was observed in natural Feather River juvenile Chinook salmon sampled during surveys in the high-flow channel between 2012–2016. These surveys have documented a highly infectious zone for *C. shasta* that begins at the top of the high-flow channel and extends approximately 14 river miles downstream. While infection can occur as early as January, peak prevalence of infection and disease severity tend to occur in March. Juveniles collected in the low-flow channel were far less likely to be infected (<10 percent prevalence of infection).

In 2018, DWR again collaborated with the USFWS Coleman National Fish Health Laboratory to better understand the problem observed in the lower Feather River. The study had three objectives.

The first objective was to determine the weekly prevalence and severity of *C. shasta* and *Parvicapsula minibicornis* infection of natural Chinook salmon juveniles both

- (1) within the infectious zone during their freshwater residency period (with emergence in January through last out-migrants in late spring). Fish collections occur at Herring rotary screw trap; and
- (2) from the low-flow channel above the infectious zone at the Eye Side Channel rotary screw trap to compare low infectivity trends of previous years.

The second objective was to determine the *C. shasta*-associated mortality (prognosis of infection) as well as prevalence of *C. shasta* infection in a subset of natural Chinook salmon juveniles collected at Herringer and reared in the wet lab for three weeks.

The third objective was to estimate the *C. shasta*-related mortality by multiplying weekly *C. shasta* disease prevalence in Herringer fish by the juvenile Chinook salmon passage estimate or actual catch of the same week.

Despite the 2017 flood flows, *C. shasta* infectivity in the study reach was similar to 2016 and only slightly lower than 2015. It appears the polychaete population was not significantly reduced in 2017. Even with increased flows in late March–April 2018, actinospore production (5–27 spore/liter at Herringer trap) was sufficient to incur high prevalence of severe infections beginning in March. Prognosis of fry *C. shasta* mortality corresponds with peak prevalence of infections in Herringer trap samples from late March through the last May sample. DWR's estimate of *C. shasta*-related mortality suggests that 50 percent or more of the out-migrants, moving through or rearing in the infectious zone between mid-March through mid-April, were in a disease state and likely died due to *C. shasta*.

The late March increase, in both prevalence and severity of *C. shasta* infection, corresponded to the occurrence of larger fry sampled at Herringer in the high-flow channel. The mean fork length was 35–43 millimeters (mm) until February 21, when weekly sample mean increased to 45–74 mm. In comparison, mean fork length of fry at the Eye Side Channel trap in the low-flow channel ranged from 34–42 mm during March and April. This shift in size of the high-flow channel samples and their difference from the low-flow channel sample group could indicate rearing and greater

exposure to *C. shasta* actinospores within the high-flow channel infectious zone beginning in March. Rotary screw trap and beach seine data demonstrate that juvenile Chinook salmon rear in the high-flow channel throughout the spring. Previous exposure history and changes in migratory behavior may limit the benefits of increased flows through the infectious zone in March. One possible management action could be the use of pulse flow(s) in the low-flow channel prior to March. The objective would be to induce out-migration of additional fry through the infectious zone prior to the increase in actinospore concentrations.

FRFH spring-run Chinook salmon likely experience only a moderate *C. shasta* disease effect. This assertion is based on the moderate *C. shasta* infection detected in spring-run Chinook salmon captured from the Delta and lack of disease progression seen in the seven days post-release of FRFH spring-run Chinook salmon.

Steelhead Mark-Recapture Study

An abundance estimate of wild steelhead spawning in the Feather River is currently lacking. Although the FRFH has useful long-term data on abundance and origin, it is only half of the information necessary to understand population size and structure in the Feather River (hatchery versus natural origin, size, etc.). Furthermore, FRFH data suggest nearly all steelhead are of hatchery origin, potentially biasing critical population data. However, redd survey, snorkeling, and angling data demonstrate steelhead also spawn in the upper river, but abundance data is difficult to gather. Additional methods are needed to better understand the size and structure of the steelhead population spawning in the river.

Passive integrated transponder tags allow for all steelhead encountered during any sampling activity (electrofishing, seining,

weir operations, or hatchery operations) to be individually identified. This allows movement and growth patterns of both juveniles and adults to be monitored for years instead of weeks or months. It also allows DWR to more closely monitor when juvenile and adult steelhead are present in the system and how operations may affect their behavior. Furthermore, because each fish is individually marked, a mark-recapture study can be performed to estimate abundance. Details can also be learned about short- and long-term growth and overall life-history behavior.

In 2018, a mark-recapture study was initiated to estimate both the population size and the ratio of natural to hatchery origin steelhead in the mile-long section between the Highway 70 Bridge and Table Mountain Bridge in Oroville (RM 67). Between December 5 and December 31, steelhead caught by hook and line were tagged with passive integrated transponder tags and then released back into the river. A total of 133 fish were captured, nine of which were subsequently recaptured. Of those 133 fish, 95 were of hatchery origin (71 percent), and 38 were of natural origin (29 percent). Average size of steelhead processed in 2018 was 49.5 centimeters (19.5 inches). A population estimate will be completed by the fall of 2020 using a modified Cormack-Jolly-Seber model. Increasing surveys in future years or operating count weirs may provide a more accurate population estimate and greater sample size to determine hatchery versus natural origin abundance.

Salmonid Predator Studies

Releasing all hatchery origin salmonids as close to the hatchery as possible is one of the goals of the draft *Hatchery and Genetics Management Plans* for the FRFH as well as one of several reforms recommended by the California Hatchery Scientific Review Group.

Results from acoustic studies on hatchery origin spring-run Chinook salmon and Central Valley steelhead smolts in the Feather River (and out to the ocean) reveal their downstream migration success is very poor. Various release techniques have been implemented to improve migration success, but very little improvement has been observed, and the direct cause of mortality has not been identified. Predation is one likely source of mortality that may explain poor out-migrating smolt survival in the Feather River.

In an effort to better understand the role of predation, salmonid predator studies focusing on movements and diet are being implemented. In some years, predators such as striped bass, largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), white catfish (*Ameiurus catus*), channel catfish (*Ictalurus punctatus*), and Sacramento pikeminnow (*Ptychocheilus grandis*) have been tagged with acoustic tags and monitored. Stomachs from these species were also collected and dissected to identify prey selection in the lower Feather River throughout the entire year. Predator hot spots can be identified by comparing seasonal diets and using angling and acoustic tag data. Identifying these hot spots may provide the opportunity to adjust hatchery release strategies to minimize predator impacts on juvenile salmonids.

In 2018, a predator diet study was conducted from March 14 to May 3 to determine the prey of predatory fishes in the Lower Feather River from Boyd's Pump (RM 22) to the confluence of the Sacramento River (RM 0). A total of 66 striped bass were captured using hook and line angling techniques. Results from the dissections of the stomachs from these fish showed that their primary prey species were juvenile salmonids, unidentified finfish, and unidentified invertebrates.

Fish-related Mitigation Projects

In 1986, DWR and DFW signed the Delta Pumping Plant Fish Protection Agreement (Delta Fish Agreement) to annually provide funds to offset direct losses of Chinook salmon, steelhead, and striped bass at Banks Pumping Plant. The Delta Fish Agreement is commonly referred to as the Four Pumps Agreement because it was adopted as part of the mitigation for four additional pumps at Banks Pumping Plant. Direct losses are defined as losses of fish that occur from the time fish are drawn into Clifton Court Forebay until the surviving fish are returned to the Delta. In principle, DWR and DFW intended this agreement to offset direct losses of all fish caused by the diversion of water by the pumping plant starting in 1986. However, at that time, information on impacts and measures to offset those impacts was sufficient only to deal with Chinook salmon, steelhead, and striped bass. The agreement allowed for addressing impacts on other fish species once impacts could be identified and measures could be developed that would offset such impacts.

The agreement formalized the Delta Pumping Plant Fish Advisory Committee consisting of representatives from interest groups concerned with fish resources affected by the SWP, including, but not limited to, representatives of the SWP Contractors, sport and commercial fishing groups, and environmental groups. DWR and DFW work with the Delta Pumping Plant Fish Advisory Committee to review the success of the agreement in offsetting the direct effects of diversions at Banks Pumping Plant.

To mitigate fish loss, mitigation projects are selected and funded by the Delta Fish Agreement. The agreement outlines how project proposals are reviewed and selected for funding and gives priority to mitigation measures for habitat restoration and other nonhatchery measures. Under

the agreement, DWR calculates fish loss as prescribed in the agreement, and approved mitigation projects earn fish mitigation credits to satisfy the fish loss mitigation provisions in the agreement. Mitigation is on a fish-for-fish basis.

The agreement provides for two funding components. One component is the Annual Mitigation Account for compensating the annual fish loss. It has no expiration date and is funded annually. The second is a \$15 million Lump Sum Account provided by DWR for additional projects to compensate for post-1986 fish loss. This account was closed on December 31, 2016, per the Delta Fish Agreement.

Since 1986, DWR has spent \$80.4 million on mitigation projects developed under the Delta Fish Agreement. Mitigation fund expenditures through December 31, 2018, were \$65.8 million for the Annual Mitigation Account and \$14.59 million for the \$15 million Lump Sum Account.

Climate Change

Climate change is having a profound impact on California's water resources, as evidenced by greater weather extremes, reduced snowpack, higher sea level, and changes in streamflow. Models project more precipitation will fall as rain instead of snow, exacerbating flood risks and creating additional challenges for water supply reliability. These hydrologic changes will challenge current and future operation of the SWP. Reducing greenhouse gas (GHG) emissions and building resiliency to the hydrologic impacts of climate change is one of DWR's strategic business goals. DWR's efforts throughout 2018 represent the continuation of its multipronged approach to addressing these issues by conducting research to better understand potential future impacts; monitoring and reporting GHG emissions; developing plans, strategies, and actions to improve the resiliency

of DWR/SWP facilities and operations; reviewing and consulting with outside experts; and providing climate data.

DWR remains committed to contributing to statewide, national, and international efforts to mitigate the future impacts of climate change by reducing GHG emissions from its activities and adapting to unavoidable climate change impacts. More information on the Climate Action Plan is available on DWR's website.

Completed in 2018

Data Development and Distribution

2018 Hydroclimate Summary. DWR's environmental operations are impacted by California's hydroclimate. As such, DWR monitors statewide precipitation and temperatures for both near-term programmatic decision making and for long-term trends, and summarizes this data into an annual hydroclimate report. Water year 2018 alternated from dry-to-wet month-to-month with accompanying record-breaking heat. October started the water year off dry and warm. In November, precipitation in the north was well above average, while dry conditions lingered in the south. December was notably dry and warm, coming in as the fourth warmest in the 123-year record and the second driest for statewide precipitation, with not a single atmospheric river making landfall. Conditions shifted again in January with atmospheric rivers and thunderstorms causing severe flooding in Northern California. February returned to dry conditions and ended with a statewide snowpack at only 23 percent of average for the date. March saw four atmospheric rivers make landfall, bringing the snowpack up to 54 percent of average by the end of the month. The remnants of a super-typhoon were entrained into a mid-latitude storm system that made landfall in the first week of April, bringing record-setting precipitation and high freezing elevations. The heavy

precipitation brought peak flows and helped offset the below average snowpack. May and June were warmer and drier than average. The water year ended at 82 percent of average precipitation in the Northern Sierra and peak snowpack was 60 percent of average.

Ongoing During 2018

Research

Atmospheric Rivers and Climate Change.

Atmospheric rivers are key physical drivers in year-to-year outcomes for California's water year. Characterizing atmospheric rivers as they pertain to benefitting water supply and impacting flood hazards has the potential to add flexibility to water management in California. Examining past and present atmospheric river events can contribute to better monitoring and prediction and inform management practices. This project aims to increase understanding of the role of atmospheric river events in the development of annual water supply and flood events and how they may differ under climate change. During 2018, DWR partnered with the NOAA Earth Systems Research Laboratory and the Center for Western Weather and Water Extremes to continue collecting atmospheric river event characteristic data and developed a two-page informational outreach brochure. The next steps will be to conduct a research findings workshop and produce decision-support materials. The project will culminate with a book documenting two decades of atmospheric research at DWR.

Planning

Statewide Flood Management Planning. As part of the Safeguarding Implementation Plan under Executive Order B-30-15, the Statewide Flood Management Planning Program is developing an update to the *California's Flood Future: Recommendations for Managing the State's Flood Risk* report. The update will address flood

risk management in the context of integrated water management and include recommendations for State investments that consider existing flood conditions as well as potential conditions under climate change. Information developed as part of the report is used to inform both the *Central Valley Flood Protection Plan* and the *California Water Plan*. The report will be comprised of a suite of white papers and associated technical attachments and has an expected completion date of late 2019 or early 2020.

Data Collection and Climate Services. DWR continued to develop the Flood Emergency Response Information Exchange (FERIX), a web-based platform that provides flood information. Information presented in FERIX was linked to the climate data in the California Climate Data Archive. FERIX also housed a new map-based server for depth-duration-frequency curves and annual extremes data sets that make up Bulletin 195.

For observing data systems, DWR continued its partnership with the NOAA Earth Systems Research Lab and Scripps Institution of Oceanography to deploy new monitoring equipment for extreme precipitation events. For this network, water vapor measurements, wind profilers, soil moisture sensors, and freezing level radar were deployed across the state. The data from this network was served through NOAA's Hydrometeorology Testbed. Efforts to get the data into the California Data Exchange Center continued.

Other observing opportunities in their initial stages included elements of the Forecast Coordinated Operations Program and the University of California, Merced observing system in the American River watershed. A new remote sensing monitoring effort using airborne light detecting and ranging (LiDAR) measurements of the snowpack was developed under a joint project between NASA's Jet Propulsion Laboratory and DWR.

In 2017, DWR invested in the Western Region Climate Center California Climate Tracker online database to enable more overlap with DWR analyses including adding hydrologic regions and more detailed time periods. In 2018, project accomplishments included an update to the California Climate Tracker. DWR funded the Western Region Climate Center for \$51,000. Upgrades to the previous California Climate Tracker included several new features and changes including the addition of an interactive dashboard for the most recent month, ability to generate plots for historic periods, and advancement in the availability of Parameter-elevation Regressions on Independent Slopes Model (PRISM) data earlier in the month.

Sustainable Groundwater Management Act Implementation (Climate Change Objectives). DWR's initial role in the Sustainable Groundwater Management Act is to provide regulations to revise basin boundaries, prioritize the alluvial groundwater basins, provide technical assistance, and evaluate groundwater sustainability plans. Considering that the act requires applicable basins achieve their sustainability goals by year 2040 (or 2042, depending on the basin), DWR recognizes that climate change has the potential to exacerbate many ongoing issues with groundwater within the planning horizon. Climate change assessments will be a requirement and a key component of groundwater sustainability plans to assess future risk and to avoid undesirable results within defined basins under the Sustainable Groundwater Management Act.

The following deliverables were released in 2018:

- 2030, 2070, and 2070 Extreme Scenario Data Suite
- *Sustainable Groundwater Management Act Resource Guide*: DWR-provided climate change data and guidance

- Sustainable Groundwater Management Act Guidance for Climate Change Data Use During Sustainability Plan Development
- Climate Change ArcGIS Toolboxes for modular finite-difference flow (MODFLOW) model and integrated water flow model (IWMF) groundwater models

Work is ongoing to update the two 2070-period extreme scenarios through a separate but related project partnered with Lawrence Berkeley National Laboratory, DWR Climate Change Program, and modeling support from the DWR Bay-Delta Office. The updated datasets are anticipated for release in late 2019.

Policy

Development of Internal DWR Policies on Climate Change Mitigation, Analysis, and Adaptation.

In 2010, DWR began a three-phase process to develop a comprehensive DWR Climate Action Plan of internal policies to address climate change mitigation, effects analysis, and adaptation.

Climate Action Plan Phase I. Completed in 2012, Climate Action Plan Phase I is the comprehensive DWR-wide *Greenhouse Gas Emissions Reduction Plan* that covers mitigation of GHG emissions. The plan lays out steps to cut DWR's GHG emissions by 50 percent below 1990 levels by 2020 and 80 percent below 1990 levels by 2050.

Climate Action Plan Phase II. Started in 2012, Phase II is a framework and data toolbox to guide analysis of the effects of climate change on DWR projects and activities.

Phase II will ensure all DWR projects meet standards for consistency, quality, and adequacy in climate change analysis for planning activities. This guidance may also provide assistance to local water managers.

The final guidance document, titled *Climate Action Plan Phase II: Climate Change Analysis*

Guidance, was adopted in September 2018. A draft Water Resources Engineering Memorandum, codifying the guidance as a DWR planning policy, is under circulation and expected to receive approval in 2019. In addition, a climate change vulnerability assessment and adaptation analysis specifically focused on the SWP is underway. The assessment results will be included in a final report titled *Decision Scaling Climate Vulnerability Assessment for the California Department of Water Resources*, which is expected to be released in 2019. Lastly, the Climate Change Program is conducting an alignment analysis of DWR climate change guidance. The analysis will examine climate change requirements, resources and guidance issued by DWR with a goal of creating climate change planning consistency among projects and programs. An inventory of programs and projects that include climate change planning has been conducted. The next step will be creation of a draft summary of results and development of an alignment plan. This is expected to be completed in late 2019.

Climate Action Plan Phase III. Phase III of the Climate Action Plan evaluates the vulnerability of DWR facilities and operations to key climate change impacts and develops adaptation strategies to improve DWR's resiliency to climate change.

During 2018, the DWR Vulnerability Assessment circulated, with a draft expected to be released in 2019.

A workgroup has been assigned for the development of the DWR Climate Change Adaptation Plan. A draft document is expected in 2019, with the final document expected in 2020.

Reporting

Emissions Reports to The Climate Registry.

DWR's emissions are primarily the result of electricity generation at DWR-owned power

plants and power purchase transactions to provide power for operation of the SWP. In 2018, DWR reported its 2017 GHG emissions to The Climate Registry. The reported emissions were verified by The Climate Registry and DWR received Climate Registered status.

In 2018, DWR submitted its annual report to the California Air Resources Board for emission year 2017. The report included energy generated and consumed by the SWP and sulfur hexafluoride emissions associated with the SWP's switchyard circuit breakers. DWR complied with the reporting deadlines as well as the emission limits required by the regulations. In 2018, DWR participated in one quarterly allowance auction conducted by the California Air Resources Board to cover its contractual obligation for the Lodi Energy Center.

Environmental Document Review

Some environmental documents handled by the State Clearinghouse (a division in the Governor's Office of Planning and Research) concern proposed activities that could affect the SWP. Such documents are regularly reviewed to identify any public safety or liability issues arising from the proposed activities.

During 2018, the Division of Environmental Services, Environmental Document Review Section, tracked documents related to development along the California Aqueduct, highway projects with potential for conflict related to multiple crossings of aqueduct facilities and competing drainage improvements, land management related to wildlife habitat, levee encroachment, dam safety issues, water transfers and other water supply issues, wastewater treatment and conveyance, quarry development, solar and wind power facilities, and climate change issues. The number of environmental documents addressing significant climate

change issues are no longer easy to track since they have generally been folded into general plan documents.

DWR comments submitted through the California Environmental Quality Act and/or National Environmental Policy Act processes addressed a number of issues, including safety and water supply; encroachment on physical facilities; impacts from tunnels and overcrossings of SWP facilities; groundwater overdraft; potential damage to SWP pipelines and aqueducts; wildlife issues, including migration, setbacks, and habitat conservation lands; development and operation of wind and solar projects; and jurisdictional dams.

In 2018, the Environmental Document Review Section screened 2,410 State Clearinghouse documents. In addition, there were 47 documents not screened since they bypassed Environmental Review and were entered directly into the TRACC system, a system being developed to take the place of the Environmental Review process previously developed. After screening, 701 documents were referred for information, including notices of preparation and various final documents. Additionally, 94 formal referrals were made for negative declarations, notices of preparation, environmental impact reports, and National Environmental Policy Act documents.

Seventy formal referrals were made related to SWP issues. The majority were sent to the Division of Operations and Maintenance, and 11 were sent to the State Water Project Analysis Office.

The total number of referrals and requests sent to the Division of Operations and Maintenance and the State Water Project Analysis Office decreased slightly from 2017, when 82 referrals were made.

In 2018, formal referrals to all other DWR reviewers, the Division of Safety of Dams, totaled 24.



Chapter 4

Water Quality Programs

Roaring River Slough Distribution System levees at Grizzly Island in Solano County.

Significant Events in 2018

The State Water Resources Control Board (State Water Board) adopted amendments to the water quality control plan (WQCP) for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary in December. The amendments were part of Phase I of the WQCP review of the Bay-Delta Plan. As part of Phase II of the plan, the State Water Board issued the *July 2018 Framework for the Sacramento/Delta Update to the Bay-Delta Plan*. The framework discussed a comprehensive package of objectives and implementation measures intended to work together to provide reasonable protection.

The Bryte Chemical Laboratory upgraded its capability and capacity to detect and analyze trace levels of herbicides with the purchase of a high performance liquid chromatograph in 2018. The fully automated and computer-controlled analytical instrument is equipped with a 120-position autosampler that generates highly stable, accurate, and reproducible data.

Information in this chapter was contributed by the Division of Environmental Services, the Division of Operations and Maintenance, and the State Water Project Analysis Office.

The Department of Water Resources' (DWR) Division of Operations and Maintenance currently maintains 16 automated water quality monitoring stations at key locations along the State Water Project (SWP). This network of automated stations continuously monitors a variety of water quality parameters throughout the system and provides real-time data to SWP Contractors. In addition, field grab samples collected weekly, monthly, quarterly, or annually from more than 30 SWP locations are routinely analyzed for a broad range of constituents at the State's Bryte Chemical Laboratory.

Delta Water Quality

Maintaining adequate water quality to support multiple beneficial uses of water from the San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta) is of concern to DWR as well as other resource agencies. The State Water Resources Control Board (State Water Board) establishes water quality objectives to protect a variety of beneficial uses of water within the Bay-Delta. The objectives are contained in the water quality control plans (WQCPs) adopted by the State Water Board. In July 2014, the Drinking Water Program transitioned from the California Department of Public Health (CDPH) to the State Water Board. The State Water Board is now the primary enforcement authority for federal and State safe drinking water acts and is responsible for the regulatory oversight of public water systems throughout the state.

Water delivered through SWP facilities is subject to water quality objectives contained in Article 19 of the Water Supply Contracts. (See Chapter 8, Water Contracts and Deliveries.)

The State Water Board adopted the current *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) on December 12, 2018 (Resolution No. 2018-0059).

The State Water Board adopted Water Right Decision 1641 (D-1641) in December 1999 (amended March 15, 2000).

D-1641 implements the objectives of the Bay-Delta Plan. D-1641 amends the water rights of a number of water rights holders—primarily those for the SWP and Central Valley Project (CVP)—to help achieve the Bay-Delta Plan objectives.

For additional background information about the State Water Board's activities and the Bay-Delta Plan, see the sidebar, State Water Resources Control Board, and Chapter 6, Water Supply Development and Reliability.

Water Quality Standards

Water quality objectives in the Bay-Delta Plan are categorized by the beneficial uses they are intended to protect, including municipal and industrial, agricultural, and fish and wildlife. DWR operators adjust upstream releases and Sacramento-San Joaquin Delta (Delta) exports to meet D-1641 operational requirements for meeting water quality and flow standards.

2017–2018 Water Year Hydrologic Classifications

The Bay-Delta Plan contains water quality and flow standards that are conditioned by water year type and generally become less stringent in years with less precipitation. The water year classification system provides relative estimates of a basin's available water supply based on the amounts of rainfall and snowmelt runoff and rates of groundwater accretion. Water year types are

State Water Resources Control Board

The State Water Resources Control Board (State Water Board), established by the California Legislature in 1967, oversees water rights and protects water quality by setting and implementing statewide policy, administering appropriative water rights, coordinating with and supporting Regional Water Quality Control Board (Regional Water Board) efforts, and reviewing petitions that contest Regional Water Board actions. The five State Water Board members are appointed by the Governor and confirmed by the Senate. The State Water Board is responsible for four major programs.

Water quality: to preserve, protect, enhance, and restore water quality.

Water rights: to issue permits for water rights specifying amounts, conditions, and construction timetables for diversion and storage.

Financial assistance: to assist local agencies and individuals with pollution prevention or clean-up.

Enforcement: to enforce water rights and water quality laws and regulations.

Under their water quality authority, the State Water Board and Regional Water Boards adopt water quality control plans (WQCPs). The WQCPs contain water quality objectives necessary for the protection of designated beneficial uses, such as municipal and industrial, agricultural, and fish and wildlife. The State Water Board and Regional Water Boards implement these objectives in a number of ways, depending on the circumstances.

Current water quality objectives for the Sacramento-San Joaquin Delta and Suisun Marsh are contained in the *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan), adopted December 12, 2018. The State Water Board is required to conduct periodic updates of the Bay-Delta Plan. As part of the update process, the State Water Board conducts proceedings to gather information, receive recommendations, consider public comments, and facilitate detailed discussions to evaluate new information relevant to potential changes to the water quality objectives. Recent issues of concern related to the WQCP include drought, pelagic organism decline, special status fish species, Delta inflow, San Joaquin River flows, and southern Delta salinity.

Water Right Decision 1641 (D-1641), adopted by the State Water Board in December 1999 and amended in March 2000, implemented the objectives in the 1995 Bay-Delta Plan and continues to implement the objectives in the 2006 Bay-Delta Plan. D-1641 places terms and conditions on a number of water rights, primarily those for the State Water Project (SWP) and Central Valley Project (CVP). The Department of Water Resources and the U.S. Bureau of Reclamation operate the SWP and CVP in coordination to meet the terms in D-1641 and other applicable regulatory requirements relevant to each project.

classified as “wet,” “above normal,” “below normal,” “dry,” or “critical.”

The Sacramento Valley Water Year Hydrologic Classification (Sacramento Valley 40-30-30 Index) forecast on May 1 of each year determines the water year type for the implementation of flow and water quality criteria contained in the Bay-Delta Plan.

The Sacramento Valley 40-30-30 Index was below normal, and the San Joaquin Valley Water Year Hydrologic Classification (San Joaquin Valley 60-20-20 Index) was below normal, based on observed data for water year 2017–2018.

For a detailed discussion of water year 2017–2018, see Chapter 7, Water Supply.

Adoption of 2018 Bay-Delta Plan

California Water Code Section 13240 requires that the WQCP be periodically reviewed. Federal Clean Water Act Section 303(c) (33 U.S.C. Section 1313(c)) requires a triennial review of State water quality “standards,” as defined in the act.

The WQCP review and amendment process consists of reviewing the Bay-Delta Plan to identify elements that may need to be amended or added. The review includes both the review and update of water quality objectives (including flow objectives) and the program of implementation in the Bay-Delta Plan, as well as changes to water rights and water quality regulation consistent with the program of implementation.

The State Water Board is conducting the WQCP review in four phases. For additional information, see Bulletins 132-11 through 132-18.

Phase I

Phase I, initiated in 2009, includes review and potential modification of the San Joaquin River flow objectives for the protection

of fish and wildlife beneficial uses, the southern Delta water quality objectives for the protection of agricultural beneficial uses, and the program of implementation for those objectives.

On September 15, 2016, the State Water Board released proposed plan amendments and a draft revised substitute environmental document for proposed Phase I updates to the Bay-Delta Plan. The public hearing to receive public comments on the proposed plan amendments and draft revised substitute environmental document began in November 2016 and continued in January 2017. The public outreach process was extensive, with a six-month public comment period from September 15, 2016, to March 17, 2017.

In July 2018, the State Water Board issued its final substitute environmental document in support of potential changes to the WQCP for the Bay-Delta regarding San Joaquin river flows and Southern Delta water quality.

On July 27, 2018, the U.S. Bureau of Reclamation (Reclamation) issued its comments on the State Water Board document and indicated the U.S. Secretary of the Interior may determine the new water quality standards are not consistent with the congressional directives for the CVP and New Melones Project.

On August 15, 2018, the California Secretary for Natural Resources requested the State Water Board give DWR and the California Department of Fish and Wildlife (DFW) the opportunity to discuss information the departments could present on scientific methods available to evaluate the relative benefits of flow and non-flow actions to protect native salmonid fish species in the San Joaquin Basin.

On December 12, 2018, the State Water Board adopted amendments to the WQCP for the Bay-Delta.

Phase II

Initiated in 2012, Phase II focuses on requirements for flows and cold water habitat in the Sacramento River, its tributaries, and tributaries to the Delta, Delta outflows, and water project operations in the interior Delta.

In October 2017, the State Water Board released the final *Scientific Basis Report in Support of New and Modified Requirements for Inflows from the Sacramento River and its Tributaries and Eastside Tributaries to the Delta, Delta Outflows, Cold Water Habitat, and Interior Delta Flows (Science Report)* prepared to support the Phase II updates of the Bay-Delta Plan. The State Water Board also posted a series of questions for public input to help refine potential Phase II changes to the Bay-Delta Plan. The deadline to submit input was November 9, 2017.

In July 2018, the State Water Board issued the *July 2018 Framework for the Sacramento/Delta Update to the Bay-Delta Plan*. The framework discussed a comprehensive package of objectives and implementation measures that are intended to work together to provide reasonable protection.

The *Science Report* established the need for

- new and modified inflow;
- cold water habitat;
- Delta outflow;
- fall Delta outflow; and
- interior Delta flow requirements.

The *Science Report* discussed potential benefits of unimpaired flow levels between 35 and 75 percent.

Phase III

Phase III will change water rights and other measures needed to implement the updated Bay-Delta Plan. Implementation will begin once final objectives for Phase I and Phase II have been adopted.

Phase IV

Phase IV involves developing and implementing flow objectives for priority Delta tributaries that currently are not specifically regulated in the Bay-Delta Plan. The State Water Board plans to develop flow criteria for a minimum of five priority tributaries by 2025.

SWP Operations to Meet Delta Water Quality Requirements

In 2018, DWR and Reclamation jointly operated the SWP and CVP in accordance with D-1641, which includes water quality, flow, and operational criteria for the SWP and CVP Delta operations. SWP and CVP operations were coordinated to meet the various objectives of the Bay-Delta Plan, Central Valley Project Improvement Act, and biological opinions (BiOps) for listed species, as well as other regulatory requirements. Fish species currently listed under the Endangered Species Act of 1973 and the California Endangered Species Act of 1970 include delta smelt, steelhead, green sturgeon, and the winter and spring runs of Chinook salmon.

Real-time monitoring of fish movement and conditions in the estuary aids daily water management and provides timely protection of targeted fish species from entrainment at the Delta pumping facilities.

The Bay-Delta Plan includes the requirement to monitor a number of stations within the Delta for specific water quality constituents. DWR conducts extensive monitoring in the Delta and Suisun Marsh. Figure 4-1 shows water quality compliance and monitoring stations throughout the Delta specified in the Bay-Delta Plan.

For a discussion of other environmental issues, see Chapter 3, Environmental Programs.

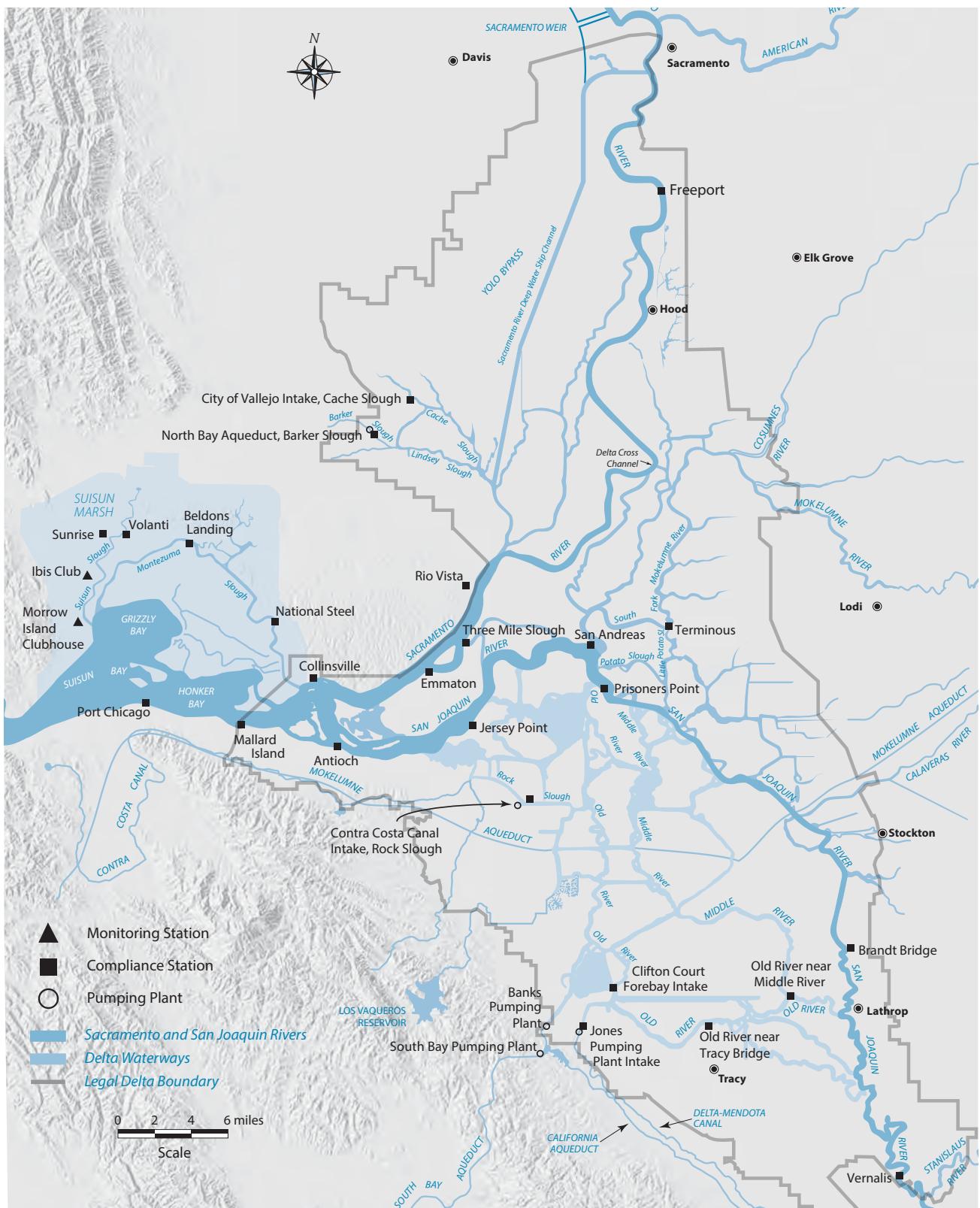


Figure 4-1 D-1641 Water Quality Compliance and Monitoring Stations in the Sacramento-San Joaquin Delta

Delta Cross Channel Gates

The Delta Cross Channel gates are operated in accordance with the Bay-Delta Plan/D-1641 and other regulatory requirements. In 2018, the gates were open for 175 days to allow fresher Sacramento River water to flow into interior Delta channels toward the SWP and CVP export facilities. Reclamation's standard operating procedures call for gate closure when flow on the Sacramento River at Freeport reaches between 20,000 cubic feet per second (cfs) and 25,000 cfs to reduce flooding potential on the Mokelumne River and to prevent scouring on the downstream side of the gate structure. D-1641 contains measures that require gate closure under certain conditions from November 1 through May 20 for fisheries protection as requested by the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service, and DFW.

Municipal and Industrial Objectives

The Bay-Delta Plan includes a year-round 250 milligrams per liter (mg/L) (maximum mean daily) chloride objective that is in effect at Delta export locations (Contra Costa Canal Pumping Plant No. 1, Clifton Court Forebay, Jones Pumping Plant, and Barker Slough). Chloride levels remained below the objective for all days in 2018.

An additional municipal and industrial water quality objective for chloride at the Contra Costa Canal Intake, near Rock Slough, specifies that the chloride level must be below 150 mg/L (maximum mean daily) for a minimum number of days during the year, dependent upon the water year forecast. For calendar year 2018, the objective of 165 days for a below normal water year was met.

Agricultural Salinity Objectives

The Bay-Delta Plan contains agricultural salinity objectives (specified as electrical conductivity, or EC—see the Specific Conductance section later in this chapter

for more information on EC). The salinity objectives, which vary by location, are based on both water year type and a 14-day running average during the irrigation season, from April to mid-August, at established compliance stations at Emmaton, Jersey Point, Terminous, and San Andreas in the West and Central Delta. The agricultural salinity objectives at these Delta locations become less stringent under dryer conditions. The Terminous, San Andreas, Emmaton, and Jersey Point water year objectives were met for calendar year 2018.

In the South Delta, salinity may be influenced by San Joaquin River flows, in-Delta diversions, and SWP exports. Water circulation may be influenced by the annual placement of South Delta barriers. South Delta salinity objectives are based on a 30-day running average. The 1.0 millisiemens per centimeter (mS/cm) objective for the South Delta was met at Old River near Tracy Road Bridge, Vernalis, Old River near Middle River, and San Joaquin River at Brandt Bridge. The 0.7 mS/cm objective for the South Delta (April through August) was met at Vernalis and Old River near Middle River and was not met for 43 days at Old River near Tracy Road Bridge, and for 17 days at San Joaquin River at Brandt Bridge. The SWP and CVP share responsibility for meeting the agricultural EC objectives imposed at these South Delta compliance locations.

For a summary of State Water Board actions related to South Delta salinity objectives, see Bulletin 132-18.

Estuarine Habitat Protection Standard

The estuarine habitat protection standard incorporates modified X2 criteria (geographic isohaline) first established in the 1994 delta smelt BiOp. The upstream movement of two parts per thousand isohaline (two parts per thousand of salt in the water), measured

as 2.64 mS/cm at the surface, is maintained within a certain range of positions in the estuary by adequate Delta outflow. These positions (Collinsville, Chipps Island, Port Chicago, or Martinez) are associated with an abundance of fish and biota.

The requirement for meeting X2 criteria at Collinsville applies to all days from February through June. The number of days per month when the daily average EC maximum (2.64 mS/cm) is in effect at Chipps Island or Port Chicago is conditioned by the previous month's Eight River Index. (The Eight River Index is the sum of the estimated unimpaired runoff from eight rivers—four in the Sacramento Valley [Sacramento River Region runoff] and four in the San Joaquin Valley [San Joaquin 4 Rivers runoff]. For more about runoff estimates, see Chapter 7, Water Supply.) This requirement may alternately be met with a maximum 14-day running average EC of 2.64 mS/cm or with specific Delta outflow, set as a three-day average Net Delta Outflow Index (NDOI) of 7,100 cfs, 11,400 cfs, or 29,200 cfs, when the X2 position is at Collinsville, Chipps Island, or Port Chicago, respectively. As allowed by D-1641, the May and June X2 flow objective is reduced to a 14-day running average flow of 4,000 cfs when the best available estimate for the Sacramento River Index is less than 8.1 million acre-feet at the 90 percent exceedance level. The Port Chicago standard becomes effective when the Port Chicago 14-day EC average, immediately prior to the first day of the month, is less than or equal to 2.64 mS/cm.

The Eight River Index for the months of January through May 2018, in million acre-feet, was 1.47, 0.81, 3.85, 4.23, and 2.13, respectively. The X2 habitat protection objective at Chipps Island was 28 days in February, two days in March, 30 days in April, and 31 days in May. The X2 habitat protection objective at Port Chicago was 18 days in May.

February 12 was the only day for which the X2 objectives were not met.

Net Delta Outflow Index Standard

Delta outflow cannot be measured directly due to the tidal influence in the Delta. Instead, an approximation of Delta outflow is calculated using measured inflows, exports, and estimated Delta water use. The NDOI was introduced in the 1995 Bay-Delta Plan/D-1641 and remains the same in the 2018 Bay-Delta Plan. NDOI calculates Delta outflow using inflows of the Sacramento River, the Yolo Bypass system, the eastside stream system (consisting of the Mokelumne, Cosumnes, and Calaveras rivers), the Sacramento Regional Treatment Plant, and a measurement of San Joaquin River flow at Vernalis.

Specific minimum monthly NDOI standards for the protection of fish and wildlife are based on water year type. In 2018, the monthly mean NDOI was highest in April, averaging 42,844 cfs. The lowest monthly mean NDOI occurred in October with 5,236 cfs which was above the objective of 4,000 cfs. All monthly NDOI objectives were met in 2018.

River Flow Standards

Water quality objectives include minimum flow requirements measured in the Sacramento River at Rio Vista. These flow standards, incorporated from the winter-run salmon BiOp, set flow requirements based on the Sacramento Valley 40-30-30 Index. Water year 2017–2018 was below normal, requiring mean monthly flows of 3,000 cfs for September, 4,000 cfs for October, and 4,500 cfs for November and December. During these periods, the seven-day running average could not be more than 1,000 cfs below the monthly standard. The actual mean monthly flows were 9,399 cfs in September; 5,843 cfs in October; 5,381 cfs in November; and 12,491 cfs in December. The monthly and seven-day average Rio Vista

flow requirements were met for calendar year 2018.

Water quality objectives also specify minimum flow requirements measured in the San Joaquin River at Vernalis. These flow standards are based on the San Joaquin Valley 60-20-20 Index, which was below normal for water year 2017–2018. If the position of X2 is required to be at or west of Chipps Island, the required minimum monthly average Vernalis flow is 2,280 cfs from February to April 14 and May 16 to June. Otherwise, the Vernalis base-flow objective is 1,420 cfs.

A San Joaquin River spring pulse flow (a short-term increase in stream flow) is required from April 15 to May 15 at Vernalis. This spring pulse flow requirement varies based on the location of X2 during April. However, the CALFED Operations Group may vary the actual timing and duration of the pulse attraction flow based on real-time monitoring data. (For background on the CALFED Bay-Delta Program, see Bulletins 132-95 through 132-11.)

Export Standards

Water quality objectives and D-1641 include an export limitation for the SWP and CVP. It limits Delta exports based on a ratio of combined water project exports to Delta inflow (export/inflow ratio) and is expressed as a maximum export rate as a percentage of Delta inflow.

The actual export amount is calculated using the three-day average that combines the inflow rate for Clifton Court Forebay (excluding Byron Bethany Irrigation District diversions from Clifton Court Forebay) added to the Jones Pumping Plant diversion. The export-to-inflow ratio limit is reported as either a three-day or 14-day running average. A 14-day running average of inflows is used unless storage withdrawals from upstream reservoirs are being made for

export, in which case a three-day average of inflows is used. For all water year types, the maximum combined export rate from February through June is 35 percent of Delta inflow. This rate may be relaxed in February during years with less precipitation to between 35 and 45 percent. From July through January, the export-to-inflow ratio rises to 65 percent.

The 2008 USFWS and the 2009 National Marine Fisheries Service BiOps typically control the export rate for most of the winter and spring. Under these conditions, the Delta can be pushed into excess conditions more often. Additional information about the BiOps can be found in Chapter 3, Environmental Programs.

During 2018, the Delta was in excess conditions from January 1 to February 11, and March 2 to May 22, for a total of 124 days. Within this period, the 14-day export/inflow ratio averaged 22 percent, meeting both the 35 percent and 65 percent export limitations for the year.

The Delta was in balanced conditions from February 12 to March 1, and from May 23 to December 31, for a total of 241 days. Within this period, the three-day export/inflow ratio averaged about 39 percent. However, the export/inflow ratio met the 35 percent limitation within the months from February to June, accounting for higher ratios in other months when the limitation is 65 percent.

South Delta Temporary Barriers Project

The South Delta Temporary Barriers Project began as a test project in 1991. The project was created partially in response to a 1982 lawsuit filed by the South Delta Water Agency and consists of rock barriers across four South Delta channels.

These temporary seasonal barriers are designed to improve local water levels and circulation patterns, protect fishery resources, and improve water quality. They are placed across Middle River, Old River near Tracy, Grant Line Canal, and at the Head of Old River.

For more information about the temporary barriers, see Chapter 2, Delta Resources, and previous bulletins.

Delta Mercury Control Program and Mercury Monitoring and Evaluation

DWR's Mercury Monitoring and Evaluation Section was established in 2012 in the Division of Environmental Services to carry out DWR's regulatory compliance responsibilities for the Delta Mercury Control Program (DMCP). These responsibilities include conducting wetlands, open water, and dredging studies, as well as overseeing in-kind support for educational outreach. The program was adopted by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) in 2010 to address mercury and methylmercury (MeHg) water quality impairments in the Delta. For more background information about the program, see Bulletin 132-14.

Completed and continuing work in 2018 included

- completion of a third tidal wetland control study and the initiation of the fourth and final study to characterize mercury dynamics in tidal wetlands;
- completion of two vegetation senescence experiments to examine a potential source of internal production of MeHg in the flooded Yolo Bypass and to explore a best management practice to address this effect;

- a continued collaboration between DWR and consultant to create a mercury model for the Delta and Yolo Bypass;
- presentation of preliminary vegetation senescence results at the Society of Environmental Toxicology and Chemistry North American 39th annual meeting;
- production of various public health educational materials to support public outreach for the Mercury Exposure Reduction Program; and
- continuing work on the Statewide Mercury Control Policy and Mercury Control Program for Reservoirs.

Tidal Wetlands

Beginning in 2014, DWR began studying four tidal wetlands to determine whether tidal wetlands in the Delta and Yolo Bypass were exporting mercury and MeHg. To study the wetlands, DWR placed water quality and flow equipment in the breach of each tidal wetland next to its adjacent water body to gather continuous data. Approximately once a month, autosamplers were placed in the breaches to collect hourly mercury, MeHg, organic carbon, and total suspended solids samples over a 25-hour tidal cycle. To calculate estimated imports and exports of mercury and other water quality constituents, DWR did a flow-weighted composite of the samples.

In 2018, DWR completed a year-long study at the third of four wetlands, North Lindsey Slough Tidal Wetland. The wetland, located in the Cache Slough Complex, is owned by the DFW. In 2018, DWR collected mercury data for six 25-hour tidal cycles.

After completing the study of the North Lindsey Slough Tidal Wetland, DWR began the study of the final of four wetlands, the Cosumnes River Tidal Wetland, owned by Westervelt Ecological Services. In the latter half of 2018, DWR collected mercury data for five 25-hour tidal cycles. DWR expects sampling at this wetland to be completed in

August 2019 and will analyze the data and submit a compliance report to the Central Valley Water Board by December 31, 2019.

Open Water Laboratory Investigations

Following successful sampling in water year 2017 of the prolonged flooding event in the Yolo Bypass, the technical team focused remaining efforts on experimental studies evaluating managed vegetation as a possible source of the observed internal production of MeHg in the flooded Yolo Bypass. As discussed in Bulletin 132-18, an experiment was begun at the end of 2017 to evaluate vegetation decay and land use practices as a possible best management practice to reduce MeHg production. The vegetation chosen for study was rye grass commonly growing in Yolo Bypass pastures. Pasture vegetation was chosen because, based on land use maps developed for the Yolo Bypass mercury model, pasture is the largest managed land use in the Yolo Bypass. The hypotheses tested with this experiment were:

- compared to ungrazed pastures, cattle grazing of pasture will reduce the biomass of vegetation resulting in lower filtered MeHg production to overlying water during flood events; and
- disking of pastureland will lower filtered MeHg production to overlying water during flood events by removing emergent vegetation available for methylation.

In January 2018, DWR completed the 35-day mesocosm experiment begun in 2017. Preliminary results suggested that concentrations of filter-passing MeHg production is significantly higher in vegetated treatments than in treatments with no emergent vegetation. Furthermore, preliminary results suggested that disking vegetation into the soil resulted in significantly lower concentrations of filter-passing MeHg than vegetated treatments; however, biomass

reduction through grazing did not result in significantly lower concentrations of filter-passing MeHg than the ungrazed treatments. These encouraging results suggested that if disking is compatible with pasture land maintenance, then disking could serve as a possible best management practice to help lower methylmercury production in the flooded Yolo Bypass. However, more work is required to upscale this experiment from an experimental setting to a field setting and, most importantly, determine if disking is a viable option for landowners.

Results of experiments conducted in early 2018 were presented at the Society of Environmental Toxicology and Chemistry's North America 39th annual meeting held in Sacramento.

Since the mesocosm experiment did not show a significant difference in filter-passing MeHg concentrations between grazed and ungrazed treatments, a second set of experiments were conducted in a laboratory setting to tightly control the variables associated with pasturelands. One feature of this experiment was to add predetermined amounts of vegetation to a treatment to see if there was a level of vegetative biomass that could reduce MeHg concentrations and be applied to grazing pressure. Hypotheses tested were similar to the earlier experiment and included

- disking the land will lower filter-passing MeHg releases to overlying water;
- grazing the land will lower filter-passing MeHg releases to overlying water; and
- more vegetation results in more filter-passing MeHg releases to overlying water.

To evaluate the effects of grazing pressure and biomass, different levels of vegetation were added to one-liter beakers within a given vegetated treatment. Vegetation used in the experiment was a monoculture of rye grass (*Lolium sp.*) initially collected

from a non-irrigated and ungrazed pasture. Manure was included in grazed treatments and as its own isolated treatment to determine if it promoted methylation. In total, seven treatments with five replicates for each treatment were prepared by adding varying amounts of vegetation, manure and sediment, with 800 mL of overlying water in the beaker. Overlying water was changed at pre-determined intervals to ensure that dissolved organic carbon levels did not exceed levels measured in the field. Sample collection ended in December 2018 and analytical results are pending.

Modeling Work

To fulfill Phase 1 open water regulatory requirements, DWR is developing MeHg models for the Delta and the Yolo Bypass (see Bulletins 132-13 and 132-14). Data from the open water field studies provides some of the information for the development of the Yolo Bypass mercury model. DWR's Delta Simulation Model 2 is being used for mercury modeling in the Delta. The Dynamic Mercury Cycling Model is being used to model mercury in the Yolo Bypass. Additionally, the Bay-Delta Office has been funding a separate effort to modernize the Delta Simulation Model 2, via the development of the General Transport Model.

Delta Mercury Model Milestones

The modeling milestones completed in 2018 for the Delta Simulation Model 2 include the following:

- In consultation with the Central Valley Water Board, finalized list of sensitivity runs for the Delta mercury model
- Began scripting of code to hand off Yolo Bypass modeling results to the Delta mercury model
- Set up process to use cloud computing services to decrease run times associated with developing Delta mercury model

- Determined an approach and assigned bed sediment concentrations to model
- Created regression equations for tributary inputs into the Delta
- Continued debugging model code; have run full model for shorter time frames (up to two years) to keep run times down
- Began working on calibration of mercury module
- Recalibrated and validated suspended sediment module

Yolo Bypass Mercury Model Milestones

The modeling milestones completed in 2018 for the Yolo Bypass Dynamic Mercury Cycling Model included the following:

- in consultation with the Central Valley Water Board, finalized list of sensitivity runs for the Yolo Bypass mercury model
- began scripting of code to hand off Yolo Bypass modeling results to the Delta mercury model
- initiated contract and began working with U.S. Geologic Survey to use parameter estimation software to complete manual calibrations and generate uncertainty estimates for sensitivity and scenario run
- assigned mercury sediment concentrations to the Yolo Bypass mercury model
- adapted code to animate Yolo Bypass model

Dredging

DWR is required to submit study work plans to the Central Valley Water Board to evaluate management practices to minimize increases in MeHg and mercury discharges from dredging and dredge material reuse. As discussed in Bulletin 132-14, no dredging activity was identified during the Phase I period of the regulation. Therefore, DWR was not required to submit control study work plans for dredging.

Delta Mercury Exposure Reduction Program

Elevated concentrations of mercury in fish pose a human health threat. The objective of the Delta Mercury Exposure Reduction Program is to provide educational outreach to reduce human exposure to mercury from consumption of contaminated Delta fish. All entities regulated under the program are required to participate in a mercury exposure reduction program. DWR provides up to \$20,000 per year, through 2019, of in-kind support for brochure and sign production. In 2018, DWR's Public Affairs Office facilitated the production of place mats, stickers, and bookmarks. These items were provided to the Central Valley Water Board and Delta Conservancy, which worked with stakeholders to post them throughout the Delta compliance area.

Statewide Mercury Control Policy and Mercury Control Program for Reservoirs

The State Water Board was developing a statewide mercury policy to control mercury in California's waters. Regulatory delays originally pushed back the adoption date for this regulation from 2016 to 2017; however, in 2018, regional groups and the State Water Board indicated that the development of this regulation is in "controlled delay" as the State Water Board works through other issues on its agenda. Six DWR reservoirs or inland water bodies will be regulated under this new regulation: Castaic Lake, Lake Del Valle, Lake Oroville, Pyramid Lake, Silverwood Lake, and Thermalito Afterbay. Of the jointly owned or operated water bodies, it is unclear whether Reclamation or DWR will be responsible for O'Neill Forebay, San Luis Reservoir and Los Banos Reservoir, and whether DWR or DFW will be responsible for Mile Long Pond.

In 2018, DWR continued to track developments associated with the Statewide

Mercury Control Program for Reservoirs and attended all reservoir owner/operator meetings convened by the State Water Board. Stakeholder meetings are now focused on the types of control studies (or pilot studies prior to actual control studies) that should be conducted, continued refinement of what characteristics should be used to "bin" representative reservoirs, status updates on reservoir water quality improvement projects already underway, and soliciting reservoir owner/operator feedback on reservoirs that might be suitable for pilot studies.

Special Studies and Biological Surveys

DWR conducts several special studies and biological surveys each year. This includes a special study in the Stockton Deep Water Ship Channel during the late summer and early fall to monitor the occurrence of low dissolved oxygen (DO) levels. Low DO levels potentially cause physiological stress to fish and block the migration of salmon into the San Joaquin River. DWR also conducts biological surveys of benthic organism density and diversity and of phytoplankton biomass and community composition in the Delta, Suisun Bay, and San Pablo Bay.

Stockton Deep Water Ship Channel and Lower San Joaquin River Low Dissolved Oxygen

Historically, during the late summer and early fall, DO levels in the eastern and central portions of the Stockton Deep Water Ship Channel have dropped below both the 5.0 mg/L and 6.0 mg/L water quality objectives set by the State Water Board and the Central Valley Water Board, respectively. These low DO levels are a result of several factors, including low San Joaquin River inflows, high water temperatures, high biochemical oxygen demand, reduced tidal circulation, and intermittent reverse

flow conditions in the San Joaquin River at Stockton.

To help reduce the severity of these low DO conditions, DWR normally installs a temporary rock barrier across the Head of Old River during periods of projected low fall flows in the San Joaquin River.

The spring Head of Old River barrier was not installed in 2018 due to high flows on the San Joaquin River. Installation of the fall barrier began on September 19, 2018, and removal of the fall barrier was completed on November 13, 2018.

Methods

In 2018, DO concentration monitoring in the Stockton Deep Water Ship Channel was conducted by boat on 11 monitoring runs, from June 13 to November 8. During each run, 14 sites were sampled at low-water slack tide from Prisoner's Point in the Central Delta to the Stockton Turning Basin at the terminus of the ship channel. Because monitoring results differ within the channel, sampling stations were grouped into western, central, and eastern regions. The western region of the channel begins at Prisoner's Point and ends at Columbia Cut. The central region of the channel begins a half-mile east of Columbia Cut and ends at Fourteen Mile Slough. Finally, the eastern region of the channel begins at Buckley Cove and ends at Rough and Ready Island. The turning basin is unique within the channel because it is east of the entry point of the San Joaquin River into the channel and isolated from down-channel flows.

Results

During the period of this study, DO levels varied by season and exhibited similar ranges between regions within the channel excluding the turning basin. The overall study period range was 5.36 to 9.81 mg/L at the surface and 3.64 to 9.08 mg/L at the bottom. In the western portion of the channel, DO concentrations ranged

from 7.17 to 9.09 mg/L at the surface and 7.23 to 8.88 mg/L at the bottom. In the central portion of the channel, DO concentrations were variable, ranging from 6.48 to 9.30 mg/L at the surface and 6.30 to 8.98 mg/L at the bottom. In the eastern portion of the channel, DO levels were similar compared to the other regions, ranging from 5.36 to 9.81 mg/L at the surface and 3.64 to 9.08 mg/L at the bottom. In 2018, bottom DO concentrations fell below objectives three times in the eastern channel: in the turning basin on June 26 and July 11, and at Light 48 on August 23.

Due to unsafe air quality conditions caused by the Camp Fire in November 2018, monitoring operations for the fall 2018 special study were suspended after November 8.

Benthic Survey

The operation of the SWP can impact flow characteristics of the upper San Francisco Estuary and subsequently influence the density and distribution of benthic biota. Benthic biota are relatively long-lived and can respond to changes in physical factors within the estuary, such as fresh water inflows, salinity, and substrate composition. The benthic monitoring program documents changes in the composition, abundance, density, and distribution of the benthic biota within the estuary. Biological surveys conducted under the benthic monitoring program provide an indication of physical changes occurring within the upper estuary. In addition, benthic monitoring data are also used to detect and document the presence of newly introduced species within the upper estuary.

Benthic monitoring was conducted at 10 sampling sites distributed throughout the major habitat types within the estuary:

- Clifton Court Forebay
- San Joaquin River at Buckley Cove and at Twitchell Island
- Old River opposite Rancho del Rio

- Sacramento River below the Rio Vista Bridge and above Point Sacramento
- Suisun Bay at Bulls Head Point
- Grizzly Bay at Dolphin near Suisun Slough
- San Pablo Bay near Pinole Point and near the mouth of the Petaluma River

Four bottom grab samples for benthic analysis and one sample for sediment analysis were collected monthly at each site during 2018. Samples were analyzed to identify organisms to the lowest possible identifiable taxon and to count all organisms collected.

DWR maintains a database of benthic organisms located within the upper estuary. The benthic database is dynamic and regularly undergoes peer review and update. When a new organism is identified at any of the sampling stations, it is added to the database. In addition, the taxonomic names of organisms on the list are updated when sufficient evidence is produced to warrant such changes.

The benthic monitoring program collects a large number of organisms, but a relatively small number of species. A total of 190 species of benthic macrofauna were collected in 2018 at the 10 sampling sites. Of the 190 species, 10 represented more than 85 percent of all organisms collected:

- amphipods: *Americorophium spinicorne*, *Corophium alienense*, *Ampelisca abdita*, and *Gammarus daiberi*
- Asian clams: *Corbicula fluminea* and *Potamocorbula amurensis*
- sabellid polychaete: *Manayunkia speciosa*
- tubificid worms: *Limnodrilus hoffmeisteri* and *Varichaetadrilus angustipenis*
- Ostracod: *Cyprideis sp. A.*

Of the 10 dominant species, *Potamocorbula amurensis*, *Corophium alienense*, and *Ampelisca abdita* represent macrofauna that

inhabit a typically high saline environment and were found in San Pablo Bay, Suisun Bay, and Grizzly Bay. The remaining seven species, *Gammarus daiberi*, *Manayunkia speciosa*, *Limnodrilus hoffmeisteri*, *Varichaetadrilus angustipenis*, *Cyprideis sp. A*, *Americorophium spinicorne*, and *Corbicula fluminea* are predominantly fresh water species and were collected mostly at sites east of Suisun Bay.

Phytoplankton and Chlorophyll *a* Survey

Phytoplankton are small, free-floating or attached algae that can be tiny, single-celled organisms (less than five micrometers in diameter) or larger colonial organisms. Phytoplankton are an important source of food in the estuary for zooplankton, invertebrates, and some species of fish. Phytoplankton biomass is an indicator of the status of primary productivity in the estuary. Chlorophyll *a* is one of the main groups of pigments contained in the algal species that make up phytoplankton.

Monthly sampling of chlorophyll *a* concentrations and phytoplankton was conducted in 2018 by DWR's Bay-Delta Monitoring Branch at 13 stations throughout the upper San Francisco Estuary:

- Sacramento River at Greene's Landing/ Hood and above Point Sacramento
- San Joaquin River at Vernalis, Buckley Cove, and Potato Point
- Old River opposite Rancho del Rio
- Disappointment Slough near Bishop Cut
- Franks Tract near Russo's Landing
- Suisun Bay at Bulls Head Point near Martinez and off Middle Point near Nichols
- Grizzly Bay at Dolphin near Suisun Slough
- San Pablo Bay near Pinole Point and near the mouth of the Petaluma River

Chlorophyll *a* concentration was measured at the 13 monitoring stations to estimate overall phytoplankton biomass in the estuary. Phytoplankton samples were collected and analyzed separately to determine which species were present in the estuary.

Monthly chlorophyll *a* concentrations throughout much of the estuary were relatively low. Of the 156 samples taken in 2018, 94.9 percent (148 samples) had chlorophyll *a* levels below 10 micrograms per liter ($\mu\text{g}/\text{L}$). Chlorophyll *a* levels below 10 $\mu\text{g}/\text{L}$ are considered limiting for zooplankton growth. Of the eight samples with chlorophyll *a* concentrations above 10 $\mu\text{g}/\text{L}$, six were from the San Joaquin River in February and March, and from June through September; and one was from Disappointment Slough near Bishop Cut in August. The mean chlorophyll *a* concentration for all samples in 2018 was 4.13 $\mu\text{g}/\text{L}$; the median value was 2.23 $\mu\text{g}/\text{L}$. In 2017, the mean was slightly lower (3.41 $\mu\text{g}/\text{L}$), but the median was similar (2.18 $\mu\text{g}/\text{L}$). The maximum chlorophyll *a* concentration in 2018 was 71.87 $\mu\text{g}/\text{L}$, recorded in July on the San Joaquin River at Vernalis. It was much higher than the maximum in 2017 (24.93 $\mu\text{g}/\text{L}$). The minimum chlorophyll *a* concentration was 0.65 $\mu\text{g}/\text{L}$, recorded in December on the San Joaquin River at Potato Point.

Phytoplankton biomass and resulting chlorophyll *a* concentrations in some areas of the estuary may be influenced by extensive filtration of the water column by the introduced Asian clam, *Potamocorbula amurensis*. Well-established benthic populations of *P. amurensis* in Suisun and San Pablo bays are thought to have contributed to the low chlorophyll *a* concentrations (and increased water clarity) measured in these westerly bays since the mid-1980s.

In addition to monitoring for chlorophyll *a*, water samples were analyzed for pheophytin *a*.

Pheophytin *a* is a primary degradation product of chlorophyll *a*, and its relative concentration is useful for estimating the general physiological state of phytoplankton populations. When phytoplankton are actively growing, the concentrations of pheophytin *a* are normally expected to be low in relation to chlorophyll *a*. The mean pheophytin *a* concentration for all samples in 2018 was 1.58 $\mu\text{g}/\text{L}$, and the median value was 0.94 $\mu\text{g}/\text{L}$. The maximum pheophytin *a* concentration was 15.40 $\mu\text{g}/\text{L}$, recorded in Franks Tract near Russo's Landing in November. The minimum pheophytin *a* concentration was 0.50 $\mu\text{g}/\text{L}$, also recorded in Franks Tract near Russo's Landing in October.

Cyanobacteria and green algae constituted 98.5 percent of the organisms collected in 2018. Cyanobacteria alone constituted 95.8 percent due to the presence of small-celled but numerically dominant genera such as *Chroococcus* and *Eucapsis*.

All organisms collected fell into the following categories (in order of abundance):

- (1) cyanobacteria (class Cyanophyceae)
- (2) green algae (class Chlorophyceae)
- (3) cryptophyte flagellates (class Cryptophyceae)
- (4) centric diatoms (class Coscinodiscophyceae)
- (5) pennate diatoms (classes Bacillariophyceae and Fragilarophyceae)
- (6) chrysophyte flagellates (class Chrysophyceae)
- (7) euglenoid flagellates (class Euglenophyceae)
- (8) dinoflagellates (class Dinophyceae)
- (9) ciliates (class Ciliata)
- (10) haptophyte flagellates (class Prymnesiophyceae)

The 10 most common genera collected were

- (1) *Eucapsis* (cyanobacterium);
- (2) *Chroococcus* (cyanobacterium);
- (3) *Chlorella* (green alga);
- (4) *Cyclotella* (centric diatom);
- (5) *Plagioselmis* (cryptophyte flagellate);
- (6) *Coccomyxa* (green alga);
- (7) *Ochromonas* (chrysophyte flagellate);
- (8) *Microcystis* (cyanobacterium);
- (9) *Nitzschia* (pennate diatom); and
- (10) *Skeletonema* (centric diatom).

One species of *Chroococcus*, *C. microscopicus*, was moved to a new genus, *Eucapsis*, part way through the year. Other species of *Chroococcus* are retained in the genus, hence they are not combined with *Eucapsis*. The high numbers of *Eucapsis* compared to *Chroococcus* are due to this name change.

Activities Outside the Delta

Routine SWP water quality monitoring activities and special studies are conducted outside the Delta. The special studies are in response to regulations facing water purveyors who rely on DWR to deliver high-quality raw water.

Water Quality Monitoring in the SWP

DWR's Division of Operations and Maintenance monitors water quality throughout the SWP. This monitoring program has more than 30 sampling stations and analyzes more than 200 chemical, biological, and physical constituents.

The Division of Operations and Maintenance operates monitoring stations at SWP storage and conveyance facilities located throughout the state, from the Feather River watershed in the north to Lake Perris in the south. Conveyance facilities include the Oroville Facilities, California Aqueduct with the East and West Branches, North Bay Aqueduct,

South Bay Aqueduct, Coastal Branch Aqueduct, and the San Luis Joint-Use Complex. DWR collects and analyzes samples monthly at most stations, although the frequency can vary from weekly to annually depending on location, time of year, or special events. DWR sends the water samples to its Bryte Chemical Laboratory in West Sacramento for analysis. Constituents analyzed include nutrients, herbicides, pesticides, trace metals, dissolved solids, organic substances, and minerals. For additional constituents like pesticides, herbicides, and organic compounds, samples are sent to a third-party laboratory.

The Division of Operations and Maintenance water quality monitoring program also uses a network of 16 automated monitoring stations at key locations along the SWP. This network provides real-time data by continuously monitoring a variety of physicochemical parameters such as EC (a measurement of water's capability to pass electrical flow), turbidity (a measurement of suspended particles), pH (a measurement of how acidic or basic water is), UV₂₅₄ (254 nanometer ultraviolet absorbance; a measurement of dissolved organic carbon), and fluorometry (a measurement of algal biomass). SWP Contractors rely on these essential data to assess the quality of water delivered by the SWP.

The water quality monitoring program is an important operational component of the SWP. DWR uses the program's data to evaluate water quality changes in the SWP, short- and long-term trends, and impacts from emergencies such as spills and pipe ruptures. DWR also uses the data to influence operations and to determine the quality of drinking water as defined by the State Water Board's Division of Drinking Water. DWR periodically conducts special studies to investigate the impacts of specific incidents affecting SWP water quality. The special studies include non-SWP water turn-ins, floodwater inflows, hydrology, and Delta hydrodynamics.

Table 4-1 provides mean concentrations for 27 water quality parameters assessed at several SWP facilities and at the CVP's Delta-Mendota Canal in 2018. Data for selected constituents are summarized below.

Specific Conductance

Specific conductance (also referred to as EC) is an important water quality measurement that estimates the amount of total dissolved salts in a water body. Examples of typical EC concentrations include a range of 30 to 1,500 microsiemens per centimeter ($\mu\text{S}/\text{cm}$) for potable water and over 50,000 $\mu\text{S}/\text{cm}$ for sea water. Mean annual EC was 89 $\mu\text{S}/\text{cm}$ at Thermalito Afterbay; 321 $\mu\text{S}/\text{cm}$ at the North Bay Aqueduct, Barker Slough Pumping Plant; and 443 $\mu\text{S}/\text{cm}$ at the Delta-Mendota Canal. Mean EC ranged from 417 to 460 $\mu\text{S}/\text{cm}$ in the California Aqueduct.

Dissolved Organic Carbon

Dissolved organic carbon measures the amount of organic matter in water. Monitoring of dissolved organic carbon is important to water treatment facility operators as dissolved organic carbon has the potential to facilitate the formation of trihalomethanes (potential toxins) during the chlorination process. Dissolved organic carbon was highest at the North Bay Aqueduct, Barker Slough Pumping Plant at 5.8 mg/L, while concentrations in the California Aqueduct ranged from 3.1 to 3.9 mg/L.

Bromide

Bromide is another parameter that has the potential to form trihalomethanes during water treatment. Bromide concentrations ranged from less than 0.01 mg/L at Thermalito Afterbay to 0.23 mg/L at O'Neill Forebay Outlet (Check 13) and Kettleman City (Check 21).

Turbidity

Turbidity monitoring is important because of the potential for elevated turbidity to increase the cost of water treatment. The Delta-Mendota Canal at McCabe Road exhibited the highest level of turbidity with an annual mean of 10 nephelometric turbidity units (NTU). Other locations had mean turbidity values ranging from 1 to 9.8 NTU.

Arsenic

Mean arsenic concentrations ranged from less than 0.001 mg/L at Thermalito Afterbay to 0.002 mg/L at the remaining sites (see Table 4-1). These surface water values fall below the 0.010 mg/L maximum contaminant level for arsenic in drinking water. (The maximum contaminant level is the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on human health would occur.)

Pesticides, Herbicides, and Other Organic Compounds

In 2018, DWR sampled for pesticides, herbicides, and other organic compounds in March, June, and September at several SWP facilities and the Delta-Mendota Canal (see Table 4-2). The sampled SWP facilities include those shown on Table 4-1, excluding Thermalito Afterbay but including the East Branch Aqueduct at Check 66. The concentrations of the detected herbicides ranged from 0.06 to 0.12 $\mu\text{g}/\text{L}$. No pesticides, herbicides, or other organic compounds were detected at the nine sites sampled in March. In June, the herbicide metolachlor was detected at a concentration of 0.07 $\mu\text{g}/\text{L}$ at Barker Slough Pumping Plant, 0.06 $\mu\text{g}/\text{L}$ at Banks Pumping Plant, 0.1 $\mu\text{g}/\text{L}$ at Check 13, and 0.1 $\mu\text{g}/\text{L}$ in the Delta-Mendota Canal at McCabe Road. In September, the herbicide 2,4 dichlorophenoxyacetic acid (2,4-D) was detected at eight of the nine sites sampled. The only site without a detection of 2,4-D was Check 13. The remaining sites ranged

Table 4-1 Mean Water Quality at Selected SWP Grab Sample¹ Locations in 2018

| Constituent | Units ² | California Aqueduct | | | | | | | | | |
|---------------------------|---------------------------|---------------------|-------------------------------|---|---|---------------------|-----------------------------------|---------------------------|-----------------------|-------------------------------|---|
| | | Reporting Limit | Thermalito Afterbay at Outlet | North Bay Aqueduct, Barker Slough Pumping Plant | Delta-Mendota Canal Upstream of McCabe Road | Banks Pumping Plant | O'Neill Forebay Outlet (Check 13) | Kettleman City (Check 21) | Teerink Pumping Plant | Tehachapi Afterbay (Check 41) | Devil Canyon Powerplant Second Afterbay |
| Alkalinity | mg/L as CaCO ₃ | 1 | 43 | 97 | 68 | 64 | 69 | 69 | 69 | 68 | 71 |
| Antimony | mg/L | 0.001 | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL |
| Arsenic | mg/L | 0.001 | <RL | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| Beryllium | mg/L | 0.001 | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL |
| Boron | mg/L | 0.1 | <RL | 0.1 | 0.1 | <RL | 0.1 | 0.1 | 0.1 | <RL | 0.1 |
| Bromide | mg/L | 0.01 | <RL | 0.05 | 0.21 | 0.19 | 0.23 | 0.23 | 0.21 | 0.22 | 0.22 |
| Calcium | mg/L | 1 | 9 | 17 | 19 | 16 | 18 | 18 | 19 | 18 | 19 |
| Chloride | mg/L | 1 | <RL | 29 | 70 | 61 | 76 | 77 | 69 | 74 | 73 |
| Chromium | mg/L | 0.001 | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL |
| Copper | mg/L | 0.001 | <RL | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.006 | 0.001 | 0.004 |
| Hardness | mg/L as CaCO ₃ | 1 | 37 | 102 | 94 | 85 | 94 | 93 | 92 | 91 | 97 |
| Iron | mg/L | 0.005 | 0.021 | 0.033 | 0.024 | 0.026 | 0.019 | 0.015 | 0.016 | 0.014 | 0.012 |
| Lead | mg/L | 0.001 | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL |
| Magnesium | mg/L | 1 | 4 | 14 | 12 | 11 | 12 | 12 | 10 | 11 | 12 |
| Manganese | mg/L | 0.005 | <RL | 0.023 | <RL | 0.015 | 0.006 | <RL | <RL | <RL | <RL |
| Nitrite + Nitrate | mg/L as N | 0.01 or 0.05 | <RL | 0.14 | 0.64 | 0.42 | 0.45 | 0.40 | 0.43 | 0.37 | 0.37 |
| Organic Carbon, Dissolved | mg/L as C | 0.5 | NR | 5.8 | 3.3 | 3.9 | 3.5 | 3.3 | 3.1 | 3.2 | 3.3 |
| Organic Carbon, Total | mg/L as C | 0.5 | NR | 5.5 | 3.4 | 3.5 | 3.5 | 3.3 | 3.1 | 3.3 | 3.3 |
| Phosphate-Ortho | mg/L as P | 0.01 or 0.05 | 0.01 | 0.20 | 0.11 | 0.1 | 0.09 | 0.08 | 0.07 | 0.07 | 0.06 |
| Phosphorus, Total | mg/L | 0.01 or 0.04 | 0.01 | 0.23 | 0.11 | 0.1 | 0.1 | 0.08 | 0.07 | 0.08 | 0.07 |
| Selenium | mg/L | 0.001 | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL |
| Sodium | mg/L | 1 | 4 | 34 | 52 | 48 | 54 | 54 | 52 | 54 | 54 |
| Specific Conductance | µS/cm | 1 | 89 | 321 | 443 | 417 | 459 | 460 | 450 | 455 | 460 |
| Sulfate | mg/L | 1 or 5 | 2 | 30 | 37 | 25 | 33 | 30 | 37 | 31 | 33 |
| Total Dissolved Solids | mg/L | 1 | 58 | 230 | 252 | 219 | 255 | 256 | 255 | 257 | 253 |
| Turbidity | NTU | 0.1 | 3 | 9.8 | 10 | 6.8 | 5 | 3.5 | 3.9 | NR | 1 |
| Zinc | mg/L | 0.005 | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL | <RL |

¹ A grab sample is a single sample chosen to represent the conditions in a given matrix (usually natural water) at a specific location, depth, and time. All reported constituents are the annual mean of laboratory analytical values of water sampled monthly from January through December. When an analytical result for a constituent is a "non-detect," the annual mean for the constituent is calculated using "0" for the non-detect result, which accounts for some mean values that are less than the reporting limit. Unless noted otherwise, data in the table represents the dissolved (filtered) fraction for each analyte.

² mg/L = milligrams per liter; µS/cm = microsiemens per centimeter; NTU = nephelometric turbidity unit; NR = No data recorded at this location; <RL = Value is less than lab's reporting limit.

Table 4-2 Pesticides, Herbicides, and Other Organic Substances Detected in the SWP in 2018

| Sampling Location¹ | Sampling Station ID Number | Sample Date | Chemical Detected² | Concentration (micrograms per liter) |
|--|-----------------------------------|--------------------|--------------------------------------|---|
| North Bay Aqueduct, Barker Slough Pumping Plant | KG000000 | 3/21/18 | none | — |
| | | 6/19/18 | Metolachlor | 0.07 |
| | | 9/19/20 | 2,4-D ³ | 0.11 |
| Delta-Mendota Canal upstream of McCabe Road | DMC06716 | 3/20/18 | none | — |
| | | 6/19/18 | Metolachlor | 0.1 |
| | | 9/18/18 | 2,4-D ³ | 0.11 |
| California Aqueduct at Banks Pumping Plant | KA000331 | 3/21/18 | none | — |
| | | 6/19/18 | Metolachlor | 0.06 |
| | | 9/19/18 | 2,4-D ³ | 0.1 |
| California Aqueduct at O'Neill Forebay Outlet (Check 13) | KA007089 | 3/20/18 | none | — |
| | | 6/19/18 | Metolachlor | 0.1 |
| | | 9/18/18 | none | — |
| California Aqueduct near Kettleman City (Check 21) | KA017226 | 3/20/18 | none | — |
| | | 6/19/18 | none | — |
| | | 9/18/18 | 2,4-D ³ | 0.2 |
| Teerink Pumping Plant | KA027813 | 3/20/18 | none | — |
| | | 9/18/18 | 2,4-D ³ | 0.12 |
| California Aqueduct at Tehachapi Afterbay (Check 41) | KA030341 | 3/28/18 | none | — |
| | | 6/20/18 | none | — |
| | | 9/18/18 | 2,4-D ³ | 0.11 |
| East Branch Aqueduct at Check 66 | KA040341 | 3/21/18 | none | — |
| | | 6/20/18 | none | — |
| | | 9/19/18 | 2,4-D ³ | 0.1 |
| California Aqueduct at Devil Canyon Powerplant Second Afterbay | KA041323 | 3/21/18 | none | — |
| | | 6/20/18 | none | — |
| | | 9/19/18 | 2,4-D ³ | 0.1 |

¹ Water at these locations was sampled in March, June, and September 2018.² Only chemicals found in detectable amounts at the sampling stations are included in this table.³ 2,4-D = dichlorophenoxyacetic acid

from 0.1 to 0.12 µg/L. The detected amounts of pesticides were below established maximum contaminant levels.

In addition to the March, June, and September samples, select volatile organic

compounds were sampled monthly at Barker Slough Pumping Plant, the Clifton Court Forebay, Banks Pumping Plant, and South Bay Aqueduct at Check 7. As is typical for these samples, there were no detections for any compounds.

Taste and Odor

DWR routinely monitors taste and odor compounds produced by algae. Chemical substances in water that are often associated with earthy, musty smelling or tasting water include geosmin and 2-methylisoborneol, which are produced in water bodies by cyanobacteria. Geosmin and methylisoborneol are natural by-products of algal chlorophyll production.

DWR's evaluation of a taste and odor event is based on microscopic examination of samples, and most importantly, the chemical analysis of methylisoborneol and geosmin. When sampling results indicate that concentrations of these compounds in SWP waters are increasing within the 10 nanograms per liter range, DWR responds by searching for the location of the source of the geosmin or methylisoborneol. To do this, water quality samples are collected and analyzed to ascertain the presence of possible algal sources. If an algal source is identified, DWR develops an aquatic herbicide application plan to control the specific algae associated with the elevated geosmin and/or methylisoborneol concentrations. In 2018, DWR applied aquatic algaecides to control taste- and odor-producing cyanobacteria in Castaic Lake, East Branch Aqueduct, Silverwood Lake, and Lake Perris.

Cyanotoxin Monitoring

DWR routinely monitors cyanotoxins at SWP water quality monitoring stations. Samples are analyzed by microscopy for the presence of potentially toxigenic cyanobacteria, followed by cyanotoxin analysis if recommended based on the microscopy results. Monitoring results are shared with water contractors so that they may proactively make water treatment adjustments to remove cyanotoxins in their source water. During 2018, cyanotoxins were detected at water quality monitoring stations in Clifton Court Forebay, O'Neill Forebay,

San Luis Reservoir, Pyramid Lake, and Lake Perris.

Non-SWP Water

Non-SWP water is considered to be any input to the SWP that is not directly diverted from the Delta. Most non-SWP water originates as groundwater pumped into the California Aqueduct through turn-in structures in the southern San Joaquin Valley. Non-SWP water, including groundwater turn-ins, can be admitted to the California Aqueduct for conveyance and redistribution provided it does not result in the degradation of SWP water quality, cause toxicity to fish and wildlife, or adversely affect beneficial users. Turn-in water is used for local redistribution or in transfers to other water contractors. Participants of an approved turn-in program can use available aqueduct capacity to move candidate waters from a point of availability to a point of need.

Turn-in Volumes

A total of 115,142 acre-feet of non-SWP turn-in water was admitted to the California Aqueduct during 2018 (Table 4-3). This water originated as groundwater from several agencies in the San Joaquin Field Division. The Kern Water Bank Authority contributed 48 percent of the total volume through the Kern Water Bank Canal. The Kern County Water Agency contributed 28 percent of the total volume through the Cross Valley Canal. Arvin-Edison Water Storage District and Wheeler Ridge-Maricopa Water Storage District both contributed less volume, 12 percent and 11 percent, respectively. West Kern Water District briefly contributed water totaling 0.6 percent of the total volume.

Turn-in Water Quality

The turn-in waters were typically higher in concentration for arsenic, chromium, and nitrate compared to the California Aqueduct. Others such as salinity, sulfate, and radiological constituents tended to have mixed results compared to the California

Aqueduct, while bromide, chloride, and organic carbon tended to be lower than the California Aqueduct. Monitoring in the California Aqueduct upstream and downstream of the turn-ins showed water quality was affected, both positively and negatively, but the effects were sometimes inconsistent and depended on a variety of factors such as water quality parameter, upstream concentration, turn-in source, and relative flows. Yet, those parameters with prevailing higher-than-California Aqueduct concentrations in the turn-in water (namely arsenic and chromium) primarily showed increases in the California Aqueduct while those with prevailing lower-than-California Aqueduct concentrations (bromide, chloride, and organic carbon) primarily showed decreases in the California Aqueduct. The former trend is a concern because of potential human health impacts, but this is countered by the latter trend which represents a decrease in potential human health impacts caused by the lowering of disinfection by-product precursor concentrations in the California Aqueduct.

San Joaquin Valley Agricultural Water Quality Programs

A number of programs conduct or support monitoring, research, training, or demonstration projects related to San Joaquin Valley agricultural water quality. For information about these programs, see the chapters about Local Assistance in previous Bulletins.

Municipal Water Quality Program Branch

The Municipal Water Quality Program Branch includes the Municipal Water Quality Investigations (MWQI) Program and the Quality Assurance/Quality Control Program (Quality Assurance Program).

Table 4-3 Inflows to the California Aqueduct in 2018

| Water Agency | Amount (acre-feet) |
|---|--------------------|
| Arvin-Edison Water Storage District | 13,893 |
| Kern County Water Agency | 31,899 |
| Kern Water Bank Authority | 55,692 |
| West Kern Water District | 748 |
| Wheeler Ridge-Maricopa Water Storage District | 12,910 |
| Total | 115,142 |

Municipal Water Quality Investigations Program

The MWQI Program conducts water quality monitoring in the Delta for municipal and industrial uses. Since its inception in 1983, the program has provided information and expertise to the SWP Contractors and other agencies delivering Delta-sourced drinking water. The program's data are used to identify long-term trends in water quality, to develop research and mitigation measures to reduce drinking water contaminants, and to provide advance notice to Delta water users of possible drinking water source problems.

Municipal Water Quality Investigations Discrete Monitoring and Special Studies

During 2018, the MWQI Program continued collecting monthly discrete samples at key locations in the Delta region. Monthly monitoring occurred for the routine Delta Monitoring Program, DSM2 Nutrient Monitoring Project, and the Cache Slough Complex Pre-Restoration Baseline Monitoring Project.

The intensive Cache Slough and DSM2 monitoring activities closed in 2018. For these projects, data analysis showed that baseline conditions have been adequately described, as was the intent of the studies. Less intensive monitoring will continue in 2019 to ensure concentrations continue to fall within expected ranges. Additionally,

specific locations that contributed high nutrient loads will be further assessed.

The *Fluorescence of Dissolved Organic Matter (FDOM): Proof of Concept Study* is nearing completion. The study concludes that a fluorescence of dissolved organic matter probe can be used as a proxy to measure organic carbon in place of more expensive organic carbon analyzers, as long as discrete organic carbon samples are collected regularly. The discrete data is used to develop and adjust the regression equation between fluorescence of dissolved organic matter and organic carbon.

Real Time Data and Forecasting Comprehensive Program

The Real Time Data and Forecasting Comprehensive Program is a central element of the MWQI Program. The program provides real-time water quality monitoring data and associated modeled (predictive and non-predictive) water quality data to urban SWP Contractors. This data informs contractors of Delta and SWP water quality prior to it reaching their treatment facilities. The program continually works to further develop real-time system capabilities and improve Delta and SWP forecast modeling.

Measured constituents at the real-time monitoring stations include organic carbon and bromide, which can contribute to the formation of disinfection by-products during treatment at drinking water facilities. Other constituents reported are by-products of bromide analysis and include chloride, nitrate, and sulfate.

The Real Time Data and Forecasting Comprehensive Program entails the following elements:

- real-time water quality monitoring at key locations, providing stakeholders and interested parties with timely data

- field operations that ensure proper operation of all automated sampling equipment
- consistent modeling to provide the best forecasts possible
- data quality assurance/quality control
- centralized information management and dissemination

The real-time monitoring network includes stations located at Banks Pumping Plant, Jones Pumping Plant, the Sacramento River at Hood, the San Joaquin River near Vernalis (McCune Station), and the Gianelli Pumping-Generating Plant at San Luis Reservoir. During 2018, the forecasting program accomplished the following:

- continuous operation of five real-time water quality stations
- continuous data dissemination of water quality reports
- weekly distribution of short-term water quality forecasts
- monthly distribution of volumetric, specific conductance, and organic carbon source fingerprints and aqueduct seasonal forecasts

Quality Assurance Program

The Quality Assurance Program is responsible for ensuring all DWR water-related data are collected in a way that is scientifically sound, legally defensible, and are of known and documented quality. The guiding policy for the program is the Quality Assurance/Control Policy for Water-Related Monitoring Programs (Water Resources Engineering Memorandum No. 60, September 18, 1992). DWR collaborates with monitoring programs to engage them in following standardized procedures, including quality control measurements in their sampling protocols.

This program identifies quality assurance processes and quality control practices necessary to ensure valid data from the time

a project is planned through the final stages of data interpretation, dissemination, and reporting. The program also provides quality assurance/quality control documentation support, guidance, and training to employees who conduct environmental measurements. The strategic objectives of the program are to

- develop staff with a common working knowledge of quality assurance and quality control;
- provide quality assurance tools for project managers to utilize in developing projects and validating data;
- support DWR in consistent, high-quality data management;
- collaborate with other agencies and partners to work toward consistencies; and
- comparability of data quality and data management between agencies and partnerships.

Collaboration and Outreach

Internal Collaboration. The Quality Assurance Program's activities are primarily driven by the Quality Assurance Committee. The Quality Assurance Committee meets monthly and is open to staff across DWR to engage and discuss quality assurance issues, help guide the direction for the Quality Assurance Program, and to collaborate in the development of quality assurance processes and procedures. In 2018, this involved general quality assurance topic discussion and troubleshooting, and the development of a standard operating procedure for all discrete samples collected in the field and processed at Bryte Laboratory or its subcontracted laboratories. In addition to discrete samples, the collection of sensor data has also been standardized through implementation of a published U.S. Geological Survey guidance (USGS, 2006) for calibration, maintenance, and operation of multi-parameter sensors. To engage and inform a broader audience about quality

assurance, the Quality Assurance Program launched a quarterly newsletter called *The Quality Compass* and published a fact sheet on the program.

External collaboration. The Quality Assurance Program engages external partners to advocate for quality assurance across all agencies in an effort to have more comparability and compatibility between datasets. In 2018, this involved collaboration with the Open and Transparent Data Act (Assembly Bill 1755, Dodd, 2016) implementation team; the California Water Quality Monitoring Council and its data management and estuaries working groups with the State Water Board Quality Assurance Program; and the National Water Quality Monitoring Council aquatic sensors working group.

In addition, the program presented at the DWR Environmental Scientist Workshop and the Bay-Delta Conference to further advocate for quality assurance and to engage with other DWR programs not aware of the Quality Assurance Program.

Guidance and Training. A major effort of the Quality Assurance Program is to provide guidance and training for DWR staff. Some of the guidance is discussed at Quality Assurance Committee or other formal or informal meetings. In 2018, guidance was issued through these venues, but also included standard operating procedure review from individual programs, joining staff on field runs and providing suggestions for quality improvements. DWR also provided information sessions including topics on root cause analysis (a formal method for investigating quality issues), advice on selecting appropriate quality control samples, and fluorescence of dissolved organic matter (a state of the art water quality parameter that is being used more widely). In addition, DWR developed a checklist and associated spreadsheet tool for reviewing and validating discrete water

quality data prior to public release and a standard operating procedure development and release strategy approved by the DWR Governance Board.

DWR places a high priority on training. In 2018, this involved reinstating the statistical training program and hosting the basic environmental statistics and multivariate statistics classes.

Bryte Chemical Laboratory

Established in 1951, Bryte Chemical Laboratory is DWR's primary analytical laboratory. Its main function is to analyze drinking, surface, waste and groundwater for the various water quality programs within DWR. Since 1990, the laboratory has been certified biennially by the State Water Board's Environmental Laboratory Accreditation Program to perform water quality analyses following U.S. Environmental Protection Agency or American Water Works Association procedures and analytical methods. This certification allows the laboratory to perform analyses that generate legally defensible data that can be used for regulatory or compliance purposes. The laboratory continues to perform the vast majority of chemical and other related analyses required to support DWR's water quality programs. Each year, thousands of water samples are routinely analyzed for inorganic and organic constituents such as standard minerals, cations, anions, nutrients, metals, chlorophyll, pesticides, herbicides, and volatile organic compounds.

In 2018, the laboratory upgraded its capability and capacity to detect and analyze trace levels of herbicides with the purchase of a high performance liquid chromatograph. It is a fully automated and computer-controlled analytical instrument

equipped with a 120-position autosampler that generates highly stable, accurate, and reproducible data. The instrument's detection limit has been established at 10 parts per billion.

The laboratory has continued to manage a variety of analytical contracts with other State agencies and several outside laboratories in accordance with the master contract policy approved in fiscal year 1994–1995. These contracts are used to perform analyses beyond the capability and capacity of the laboratory, such as solids and fish tissues. The laboratory works in conjunction with the DWR MWQI Program Quality Assurance/Quality Control Section to replace these contracts as they expire each fiscal year. On July 1, 2018, the contract for analytical services for water and solids was awarded to Test America Laboratories, Inc. for \$1.5 million over three years.

With SWP security and protection as an ongoing priority, Bryte Chemical Laboratory continues to be an active member in a group of laboratories called the California Association of Mutual Aid Laboratories Network (CAMAL Net) headed by CDPH. The laboratory network's main objective is to voluntarily assist the CDPH in the analysis of chemical agents in water quality samples should a natural disaster or terrorist event occur in California. The assistance is only required should the analytical capacity of the CDPH be exceeded or to confirm the presence or absence of chemical agents in water quality samples provided by CDPH. In 2007, Bryte Chemical Laboratory was classified as a Level II participating laboratory in the California Association of Mutual Aid Laboratories Network organization. Level II only allows the laboratory to receive samples that are prescreened and determined nonhazardous to laboratory personnel.

Suisun Marsh Program Activities

Suisun Marsh consists of approximately 59,000 acres of tidal and managed brackish water wetlands and 30,000 acres of bays and sloughs. It is the largest contiguous brackish marsh remaining in the United States.

Situated in southern Solano County, west of the Delta and north of Suisun Bay, the marsh encompasses more than 10 percent of California's remaining natural wetlands. The marsh is the resting and feeding ground for thousands of waterfowl and shorebirds migrating on the Pacific Flyway. It provides important habitat for more than 221 bird species, 45 mammal species, 16 reptile and amphibian species, and more than 40 fish species.

DWR became involved in Suisun Marsh in response to State Water Board Water Right Decision 1485, which required DWR and Reclamation to operate the SWP and CVP to meet salinity standards as specified in the State Water Board's 1978 *Water Quality Control Plan for the Delta and Suisun Marsh*, which established revised water quality objectives for flow and salinity in the Delta and Suisun Marsh. Water Right Decision 1485 also required DWR and Reclamation, in cooperation with other agencies, to develop a plan for Suisun Marsh that would ensure the long-term standards for full protection of Suisun Marsh would be met. The 1984 *Plan of Protection for Suisun Marsh*, completed by DWR, included construction of a series of facilities to distribute lower-salinity water to managed wetlands and monitoring in relation to these facilities. Today, DWR operates and maintains these water management facilities, including the Roaring River Slough Distribution System, Morrow Island Distribution System (MIDS), Goodyear Slough Outfall, and the Suisun Marsh Salinity Control Gates (SMSCG). Figure 4-2 shows the water quality compliance and

monitoring sampling locations and the water management facilities.

Through agreements and plans, DWR has been working in coordination with Reclamation, DFW, Suisun Resource Conservation District, USFWS, and other agencies, on habitat management, preservation, and restoration of Suisun Marsh.

Revised Suisun Marsh Preservation Agreement

In 1987, DWR, Reclamation, DFW, and the Suisun Resource Conservation District signed the *Suisun Marsh Preservation Agreement* (SMPA), a contractual framework for implementation of the *Plan of Protection for Suisun Marsh*. It required Reclamation and DWR to meet salinity standards as specified in the State Water Board's 1978 WQCP, set a timeline for implementing the *Plan of Protection for the Suisun Marsh*, and delineated monitoring and mitigation requirements. A revised SMPA and *Revised Mitigation and Monitoring Agreement* were signed in 2005 to include actions to meet channel water salinity standards consistent with D-1641 and to implement landowner-based management activities in lieu of the western marsh facilities proposed in the plan of protection.

The revised SMPA included the following actions: operate facilities to meet channel water salinity standards consistent with D-1641; implement a Water Manager Program; provide portable pumps; update Individual Ownership Adaptive Management Habitat Plans; establish a Drought Response Fund; and replace turnouts on the Roaring River Slough Distribution System. The monitoring agreement included monitoring for the salt marsh harvest mouse (*Reithrodontomys raviventris*), Ridgway's rail (*Rallus obsoletus*; formerly known as the California clapper rail), fish, vegetation, and other biological monitoring.

SMPA 2015

SMPA 2015 is the most recent revision of the SMPA, which includes new provisions, including September SMSCG operation and the preservation agreement implementation funding. DWR and Reclamation provided preservation agreement implementation funds to improve managed wetlands infrastructure for flooding and draining and joint-use facilities infrastructure.

Facility Operations, Maintenance, and Related Activities

Morrow Island Distribution System

MIDS is an interior ditch bordered by levees that was created to distribute water to managed wetlands on the western edge of Suisun Marsh. Water with relatively lower salinity is taken from Goodyear Slough in the west through water control structures that transport the water into MIDS. Water is then distributed to managed wetlands through private landowner water control structures along the ditch. Water not used by the landowners exits into Grizzly Bay through water control structures in the east (see Figure 4-2). Routine maintenance during 2018 included mowing, spraying, and drying out and distributing vegetation spoils to an adjacent landowner. In 2018, DWR's Delta Field Division added 420 cubic yards of aggregate base for road maintenance.

Fish Screen and Alternatives. Based on previous study results, a fish screen at MIDS would likely have negligible benefits to sensitive fish populations (see Bulletin 132-07, Chapter 4, Water Quality). DWR and Reclamation are proposing to fulfill the outstanding terms and conditions of the USFWS 1997 BiOp for the MIDS maintenance project by acquiring and protecting, in perpetuity, aquatic habitat in Suisun Marsh. (For additional information about the BiOp, see Bulletin 132-08.) This proposal is ongoing.

Longfin Smelt Incidental Take Permit. On February 23, 2009, DFW issued an incidental take permit for the ongoing and long-term operation of existing SWP facilities in the Delta for the protection of longfin smelt. MIDS is included as one of these facilities.

To minimize the take of longfin smelt at the MIDS diversion, DFW specifies the average intake velocities each year to adequately protect these fish.

Also, as a requirement of the incidental take permit, DWR is developing a study to confirm that the aforementioned operation prevents or substantially reduces the entrainment of longfin smelt at MIDS.

Reclamation and DWR continue to coordinate with USFWS, National Marine Fisheries Service, and DFW regarding fish entrainment and annual flow restrictions at MIDS.

Suisun Marsh Salinity Control Gates

The SMSCG are operated as needed to meet salinity standards. When they are not in operation, they are placed in an open position to minimize fish concerns related to predation and impedance. Installation or removal of the flashboards and operation of the gates vary depending on salinity conditions, fisheries agencies' requests for sensitive species concerns, or repairs.

Status of SMSCG in 2017–2018. The control season (generally October 2017 through May 2018) started in September 2017. The flashboards were installed and the boat locks became operational on September 30, 2017. The SMSCG were tidally operated beginning on October 17. Salinity was within the 12–14 mS/cm range for the compliance stations, so operations ceased. The flashboards were removed on May 17, 2018, and the gates were set to the open position.



Figure 4-2 Compliance and Monitoring Stations and Water Management Facilities in Suisun Marsh

Roaring River Slough Distribution System

The Roaring River Slough Distribution System is operated and maintained as needed to provide lower-salinity water to managed wetland properties. Interior ditch cleaning and road maintenance projects were completed in 2018.

Goodyear Slough Outfall

The Goodyear Slough Outfall is operated and maintained as needed to provide lower-salinity water to managed wetland

properties. In 2018, maintenance activities included mowing, spraying, ditch clearing, road maintenance, and removing floating debris.

S-49 Beldon's Landing Station Rebuild

S-49 Beldon's Landing Water Quality Station was destroyed by the Branscombe Fire on October 7, 2018. Temporary monitoring equipment was set up in November 2018 on an existing piling left standing after the fire. It began transmitting data to the

California Data Exchange Center when the new equipment was set up. Planning for a permanent replacement of this station began in December 2018.

Water Quality and Compliance

Salinity levels for the 2017–2018 control season were below monthly standards for all five compliance stations.

Details about salinity levels in the marsh are available in a monthly report entitled *Suisun Marsh Monitoring Program Channel Water Salinity Report*.

Suisun Marsh Expenditure History

Suisun Marsh expenditures and reimbursements administered by DWR for calendar years 1968 through 2018 are summarized in Table 4-4. From 1968 through December 31, 2018, DWR disbursed more than \$196.2 million of SWP funds for planning, design, environmental documentation, construction, maintenance, monitoring, mitigation, and permit compliance in support of implementing the *Plan of Protection for the Suisun Marsh*,

Table 4-4 Suisun Marsh Expenditures and Reimbursements Administered by DWR, Calendar Years 1968–2018 (in dollars)

| Year [1] | Reach 305 Costs [2] | General Fund Payment [3] | Adjustment for General Fund Payment ¹ [4] | Reclamation Invoice Payment ³ [5] | Interest Payment Credited Back to Contractors [6] | Net SWP Costs [2] through [6] [7] | Recreation Costs ² [8] | SWP Contractors' Costs [7] minus [8] [9] |
|-------------|---------------------------|-----------------------------------|--|---|--|--|---|--|
| 1968 | 10,571 | | | | | 10,571 | 359 | 10,212 |
| 1969 | 34,181 | | | | | 34,181 | 1,162 | 33,019 |
| 1970 | 23,343 | | | | | 23,343 | 794 | 22,549 |
| 1971 | 1,042 | | | | | 1,042 | 35 | 1,007 |
| 1972 | 47 | | | | | 47 | 2 | 45 |
| 1973 | 0 | | | | | 0 | 0 | 0 |
| 1974 | 0 | | | | | 0 | 0 | 0 |
| 1975 | 2,709 | | | | | 2,709 | 92 | 2,617 |
| 1976 | 32,960 | | | | | 32,960 | 1,121 | 31,839 |
| 1977 | 37,475 | | | | | 37,475 | 1,274 | 36,201 |
| 1978 | 350,831 | | | | | 350,831 | 11,928 | 338,903 |
| 1979 | 3,660,099 | | | | | 3,660,099 | 124,618 | 3,535,481 |
| 1980 | 5,005,759 | | | | | 5,005,759 | 170,772 | 4,834,987 |
| 1981 | 2,964,974 | | | | | 2,964,974 | 101,311 | 2,863,663 |
| 1982 | 2,955,705 | | (2,500,000) | | | 455,705 | 101,111 | 354,594 |
| 1983 | 2,754,094 | | | | | 2,754,094 | 93,643 | 2,660,451 |
| 1984 | 2,418,344 | | | | | 2,418,344 | 82,388 | 2,335,956 |
| 1985 | 2,332,773 | | | | | 2,332,773 | 79,432 | 2,253,341 |
| 1986 | 6,495,322 | | | | | 6,495,322 | 220,843 | 6,274,479 |
| 1987 | 13,600,701 | | | | | 13,600,701 | 462,424 | 13,138,277 |
| 1988 | 7,456,364 | | | (17,368,725) ^a | (2,039,752) | (11,952,113) | 253,516 | (12,205,629) |
| 1989 | 2,341,960 | (9,478,000) | 6,634,600 | (1,219,691) ^a | (283,857) | (2,004,988) | 79,643 | (2,084,631) |
| 1990 | 3,030,010 | | | (695,450) | | 2,334,560 | 101,460 | 2,233,100 |
| 1991 | 6,223,042 | | | (2,925,429) | | 3,297,613 | 210,454 | 3,087,159 |
| 1992 | 2,737,259 | | | (1,174,655) | | 1,562,604 | 91,951 | 1,470,653 |
| 1993 | 2,979,255 | | | (238,130) | | 2,741,125 | 99,897 | 2,641,228 |
| 1994 | 3,192,213 | | | (1,962,549) | | 1,229,664 | 107,281 | 1,122,383 |
| 1995 | 2,721,978 | | | (647,138) | | 2,074,840 | 91,218 | 1,983,622 |
| 1996 | 3,391,678 | | | (1,482,396) | | 1,909,282 | 113,244 | 1,796,038 |

through the SMPA and for meeting standards set by the State Water Board. Reclamation has reimbursed DWR about \$64.9 million (33 percent), and the State's General Fund has reimbursed about \$9.5 million (4.8 percent). These figures do not include up-front payments made by Reclamation for DWR and other direct costs, as well as about \$5.7 million in Reclamation interest payments during 1988 and 1989.

Annual figures are reported in Table 4-4 for DWR's up-front payments, Reclamation's reimbursements, General Fund

reimbursements, and DWR's cumulative expenditure balance.

Table 4-4 Suisun Marsh Expenditures and Reimbursements Administered by DWR, Calendar Years 1968–2018 (in dollars)

| Year [1] | Reach 305 Costs [2] | General Fund Payment [3] | Adjustment for General Fund Payment ¹ [4] | Reclamation Invoice Payment ³ [5] | Interest Payment Credited Back to Contractors [6] | Net SWP Costs [2] through [6] [7] | Recreation Costs ² [8] | SWP Contractors' Costs [7] minus [8] [9] |
|--------------|---------------------------|-----------------------------------|--|---|--|--|---|--|
| 1997 | 3,634,267 | | | (1,520,219) | | 2,114,048 | 121,132 | 1,992,916 |
| 1998 | 5,342,834 | | | (1,107,501) | | 4,235,333 | 177,132 | 4,058,201 |
| 1999 | 8,867,742 | | | (2,696,200) | | 6,171,542 | 301,424 | 5,870,118 |
| 2000 | 2,857,534 | | | (3,300,053) | | (442,519) | 98,146 | (540,665) |
| 2001 | 2,621,301 | | | (444,009) | | 2,177,292 | 89,431 | 2,087,861 |
| 2002 | 3,752,486 | | | (791,319) | | 2,961,167 | 124,387 | 2,836,780 |
| 2003 | 3,258,583 | | | (2,389,979) | | 868,604 | 107,566 | 761,038 |
| 2004 | 2,874,629 | | | (952,940) | | 1,921,689 | 94,885 | 1,826,804 |
| 2005 | 3,940,876 | | | (1,409,296) | | 2,531,580 | 130,049 | 2,401,531 |
| 2006 | 5,796,008 | | | (868,449) | | 4,927,559 | 193,478 | 4,734,081 |
| 2007 | 4,113,515 | | | (939,879) | | 3,173,636 | 135,753 | 3,037,883 |
| 2008 | 3,827,189 | | | (1,670,278) | | 2,156,911 | 125,783 | 2,031,128 |
| 2009 | 4,696,688 | | | (1,123,705) | | 3,572,983 | 154,991 | 3,417,991 |
| 2010 | 2,834,952 | | | (1,663,530) | | 1,171,422 | 93,553 | 1,077,869 |
| 2011 | 3,772,476 | | | (1,748,136) | | 2,024,340 | 124,492 | 1,899,848 |
| 2012 | 6,370,822 | | | (1,860,585) | | 4,510,237 | 186,973 | 4,323,263 |
| 2013 | 5,665,863 | | | 0 | | 5,665,863 | 186,973 | 5,478,889 |
| 2014 | 4,992,333 | | | 0 | | 4,992,333 | 164,747 | 4,827,586 |
| 2015 | 5,553,741 | | | (6,431,161) | | (877,421) | 183,273 | (1,060,694) |
| 2016 | 8,765,481 | | | (388,253) | | 8,377,228 | 289,289 | 8,087,940 |
| 2017 | 13,231,132 | | | (2,136,908) | | 11,094,224 | 436,647 | 10,657,576 |
| 2018 | 12,679,468 | | | (1,204,000) | | 11,475,468 | 418,464 | 11,057,004 |
| Total | 196,208,705 | (9,478,000) | 6,634,600 | (64,860,563) | (2,323,609) | 126,181,133 | 6,563,940 | 119,617,193 |

¹ Under California Water Code section 12912.5 (Chapter 716, Statutes of 1989 [Assembly Bill 1442, Baker]), the General Fund paid 20 percent of the Suisun Marsh costs through June 1988, which totaled \$9,478,000. This \$9,478,000 payment included \$2,843,400, which represents 5.2 percent of the Suisun Marsh costs through June 1988 paid by the General Fund. The Suisun Marsh costs billed to the SWP Contractors have been reduced by \$2,843,000. The remaining \$6,634,600 received from the General Fund represents DWR's recreation project purpose share of 14 percent.

² Allocation factors for capital recreation costs have changed from 14 percent to 3.4 percent, and operations and maintenance recreation costs from 14 percent to 3.3 percent.

³ No payments were made by Reclamation in 2013 and 2014 due to disputed invoices. All disputed charges were resolved and paid in July 2015.

^a Excludes interest payments made by Reclamation.



Chapter 5

Legislation and Litigation

A bald eagle (Haliaeetus leucocephalus) flies above its nest located near the Lake Oroville service spillway site in Butte County, California.

Significant Events in 2018

*D*uring 2018 there was no significant State or federal legislation affecting management of the State Water Project.

Information for this chapter was provided by the Legislative Affairs Office and the Office of the General Counsel.

The Department of Water Resources (DWR) monitors State and federal legislation that affects management of the State Water Project (SWP). Legislative bill tracking involves reviewing legislation at its introduction, evaluating amendments in State Assembly and Senate committee hearings, and monitoring its enactment into law. The DWR Assistant Director for Legislation monitors proposed legislation. The Office of the General Counsel tracks State and federal litigation that impacts management of the SWP. The DWR General Counsel also manages legal cases that involve SWP operations.

Legislation

State Legislation

Senate Bill 955 (Nielsen, Chapter 509, Statutes of 2018)

Senate Bill 955 created the Citizens Advisory Commission for Oroville Dam within the Natural Resources Agency. The commission is to be comprised of locals, local government, and State officials who are to discuss the challenges and opportunities at the dam. DWR is required to assist in providing the commission with information and to provide onsite visits of the Oroville facility.

Senate Bill 100 (De León; Chapter 312, Statutes of 2018)—The 100 Percent Clean Energy Act of 2018

Senate Bill 100 revises California's Renewable Portfolio Standard, changing the program's goal to a 50 percent renewable resources target by December 31, 2026, and a 60 percent target by December 31, 2030. This bill also establishes a policy of the State that eligible renewable energy resources and zero-carbon resources supply 100 percent of retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. The bill requires California to achieve this policy by not increasing carbon emissions elsewhere in the western grid and that the achievement not allow resource shuffling. Senate Bill 100 also requires the California Public Utilities Commission, the California

Energy Commission, the California Air Resources Board, and all other State agencies to incorporate the new policy into all relevant planning.

Litigation

As of December 31, 2018, DWR was involved in, or closely monitored, a number of court cases and other actions related to the management of the SWP.

Sacramento-San Joaquin Delta (Delta)

Water Supply Contract Extension Amendments Validation Action

California Department of Water Resources v. All Persons Interested in the Matter of the State Water Project Water Supply Contract Amendments for Continued Service and the Terms and Conditions Thereof (Case No. 34-2018-0246183). On December 11, 2018, DWR filed a validation action in Sacramento County Superior Court to confirm the legality and validity of the contract extension amendments, which would extend the terms of the water supply contracts between DWR and the SWP Contractors until 2085 and also amend certain financial provisions in the contracts.

State Water Resources Control Board

California Sportfishing Protection Alliance, et al. v. California State Water Resources Control Board, et al., California Department of Water Resources and United States Bureau of Reclamation, Real Parties in Interest (Case No. RG15-780498). On August 4, 2015,

the California Sportfishing Protection Alliance filed a petition for writ of mandate challenging the State Water Resources Control Board's (State Water Board) orders granting temporary urgency change petitions to DWR and U.S. Bureau of Reclamation (Reclamation) in 2014 and 2015. (For information about the temporary urgency change petitions, see Bulletin 132-16, Chapter 4, Water Quality Programs.) DWR and Reclamation are named as real parties in interest.

On September 16, 2015, the California Sportfishing Protection Alliance filed a first amended complaint claiming that the State Water Board's orders violate the federal Clean Water Act, the Central Valley Basin Plan, and the public trust doctrine. On October 21, 2015, the State Water Board filed a demurrer to dismiss the action. A hearing on the matter was held in January 2016. In April 2016, a second amended complaint was filed by the California Sportfishing Protection Alliance, et al.

On February 6, 2017, defendants filed a motion for judgment on the pleadings for failure to join Reclamation as an indispensable party; the motion was denied by the court on March 14, 2017. On May 2, 2017, the court issued an order granting in part and denying in part the State Water Board's motion. In part, the trial court specified that "National Audubon states the standard." Cross-motions for summary judgment and summary adjudication were filed by the State Water Board and the plaintiffs, respectively, on July 25 and 27, 2017. A hearing on the cross-motions was held November 11, 2017, and the court issued an order on January 29, 2018, denying both motions. On February 13, 2018, the State Water Board filed a motion for clarification of order denying motions for summary judgment, related to whether triable issues of fact exist and for clarification on the legal standard for trial of the public trust doctrine cause of action.

California WaterFix/Bay-Delta Conservation Plan

Property Reserve, Inc. v. The Superior Court of San Joaquin County (C067758); California Department of Water Resources, Real Party in Interest; The Carolyn Nichols Revocable Living Trust v. The Superior Court of San Joaquin County (C067765); California Department of Water Resources, Real Party in Interest; Coordinated Proceedings Special Title (Rule 3.550) California Department of Water Resources Cases (C068469); (Judicial Council Coordination Proceeding No. 4594); (2016)

1 Cal. 5th 151. Twenty-four Delta property owners declined DWR's request to gain temporary entry onto their properties to perform environmental and geological surveys. DWR sought orders for temporary entry onto the respondents' properties under Code of Civil Procedure Section 1245.010 et seq. (More information about this litigation is available in Bulletin 132-14 and earlier bulletins.)

On March 13, 2014, the Third District Court of Appeal determined that the precondemnation entry order process was not sufficient to give DWR access to private properties to conduct the surveys. The court ruled that both the geotechnical studies and less disruptive environmental surveys would constitute takings, and therefore, DWR would need to bring condemnation actions to get the access it sought. By the end of 2014, an appeal had been filed with the Supreme Court of California, where briefing was completed in early 2015. On August 22, 2016, the Supreme Court reversed the Court of Appeal decision and remanded the case for further proceedings. Supplemental briefs have been submitted by the parties. In June 2017, the plaintiff's motion for attorney fees and costs was denied. The court further issued orders allowing the California WaterFix (CWF) geotechnical and environmental studies to move forward.

In 2018, there were no updates on this case.

Delta Stewardship Council Cases (Super. Ct. Sacramento County, Coordinated Proceedings Special Title (Rule 3.550), Judicial Council Coordination Proceeding No. 4758; C082944, application pending).

The following cases were coordinated into this proceeding: (1) *San Luis & Delta-Mendota Water Authority v. Delta Stewardship Council* (Super. Ct. Sacramento County, No. 34-2013-80001500); (2) *State Water Contractors, et al. v. Delta Stewardship Council* (Super. Ct. Sacramento County, No. 34-2013-80001530); (3) *North Coast Rivers Alliance, et al. v. Delta Stewardship Council* (Super. Ct. Sacramento County, No. 34-2013-80001534); (4) *California Water Impact Network, et al. v. Delta Stewardship Council* (Super. Ct. San Francisco County, No. CPF13513047); (5) *Central Delta Water Agency, et al. v. Delta Stewardship Council* (Super. Ct. San Francisco County, No. CPF13513048); (6) *Save the California Delta Alliance v. Delta Stewardship Council* (Super. Ct. San Francisco County, No. CPF13513049); (7) *City of Stockton v. Delta Stewardship Council* (Super. Ct. San Joaquin County, No. 39-2013-00298188).

In May 2013, the Delta Stewardship Council adopted its *Delta Plan* after approving and certifying a programmatic environmental impact report (EIR) for the plan. Subsequently, the Delta Stewardship Council adopted the implementing regulations to make the *Delta Plan*'s 14 policies legally enforceable. The regulations were approved by the Office of Administrative Law (California Code of Regulations, Title 23, Sections 5001-5016) and became legally effective on September 1, 2013. In May and June 2013, several public water agencies, environmental organizations, and the City of Stockton filed seven separate lawsuits challenging the *Delta Plan*, the programmatic EIR, and the associated regulations. The cases were consolidated in Sacramento County Superior Court.

In June 2016, the court ruled that the *Delta Plan* did not comply with the Delta Reform Act (2009), failed to promote options for conveyance and storage, and failed to include quantified or measurable targets for achieving reduced Delta reliance. The Delta Stewardship Council and the State and federal water contractors filed appeals in November and December 2016 with the Third District Court of Appeal. The filing of the appeals means that the lower court's judgment vacating the *Delta Plan* is automatically stayed pending the outcome of the appeals.

In January 2017, the Court of Appeal approved a settlement between the City of Stockton and the Delta Stewardship Council, meaning that Stockton will not be participating in the case on appeal. The stipulated judgment resolved Stockton's lawsuit in exchange for some assurances regarding the application and meaning of *Delta Plan* Policy WR P1 (Reduce Reliance on the Delta through Improved Regional Water Self-Reliance, [California Code of Regulations, Title 23, Section 5003]) related to Stockton General Plan definitions and future public works projects.

The parties in the litigation earlier agreed by stipulation to preserve the petitioners' California Environmental Quality Act claims while the Delta Stewardship Council takes steps to remedy the deficiencies identified in the lower court ruling.

In April 2018, while the appeals were pending, the Delta Stewardship Council adopted amendments to the *Delta Plan* (*Delta Plan Amendments*) and certified the programmatic EIR for the *Delta Plan Amendments*.

Hydropower

Oroville Facilities Relicensing—Federal Energy Regulatory Commission Project No. 2100

Butte County, et al. v. California Department of Water Resources (C071785, application pending). DWR is seeking renewal of the Federal Energy Regulatory Commission license for its hydroelectric generation facilities at Oroville (Project No. 2100). DWR filed its relicensing application in 2005. The original 50-year Federal Energy Regulatory Commission license expired on January 31, 2007. In February 2008, the Federal Energy Regulatory Commission authorized continued operation by issuing an annual license—under the same terms and conditions—that renews each year until the Federal Energy Regulatory Commission issues a new license. (Details of the license renewal negotiations and earlier litigation are described in previous bulletins.)

In January 2012, the court denied the petitioners' requests to set aside the EIR prepared by DWR and upheld the award to DWR of \$675,087 in charges for the administrative record required to proceed with the suit. The court found that the EIR was legally adequate and noted that the record preparation complied with the California Environmental Quality Act and was reasonable and necessary. The petitioners, Butte and Plumas counties, appealed the judgment in August 2012, and the appellate briefs were filed in 2013 and 2014.

In 2016, the Court of Appeal ordered the parties to file supplemental briefs on the issue of whether federal law, United States Code: Federal Power Act, preempts State law (California Environmental Quality Act). All parties filed briefs, and Friends of the River and the California Sportfishing Protection Alliance filed amicus curiae briefs. The plaintiffs/appellants and the defendant/respondent filed a response to

the amicus curiae briefs. In 2017, appellants filed additional citations for oral arguments and requested oral arguments be scheduled. In 2018, oral arguments were heard. In late December, the court issued its opinion finding that the California Environmental Quality Act suit was preempted by federal law. The Supreme Court ordered the lower court to vacate its judgment and dismiss the case for lack of subject matter jurisdiction.

Oroville Spillway

Bechtel, et al. v. California Department of Water Resources (Superior Ct. Butte County, Case No. 17 CV. 00298). On August 25, 2017, Francis Bechtel, et al. v. California Department of Water Resources was filed. This is a class action lawsuit on behalf of the approximately 188,000 residents of Oroville, Marysville, Yuba City, and other areas near the Feather River who were ordered to evacuate their homes on February 12, 2017, in response to the “failing emergency spillway” at the Oroville Dam. Plaintiffs seek damages for loss of use of their property, diminution in value, relocation expenses, and other incidental and consequential damages, including litigation costs and injunctive relief. DWR has filed a petition seeking coordination with other Oroville cases and is currently awaiting a venue decision from the Butte County Superior Court.

There was no new activity to report on this case in 2018.

Whitney v. California Department of Water Resources (Superior Ct. Tehama County, Case No. 17C100209). On October 6, 2017, plaintiffs George and Virginia Whitney, owners of an RV park in Corning, California, filed a lawsuit against DWR alleging flood damages caused by the Oroville Dam spillways incident.

In 2018, there was no new activity on this case.

Mission Springs Water District v. Desert Water Agency (Superior Ct. Riverside County, Case No. PSC 1600676). In March 2017, Mission Springs Water District amended its petition for writ of mandate and writ of administrative mandate against Desert Water Agency to name DWR as a real party in interest. In the petition, originally filed in February 2016, Mission Springs challenged the decision of Desert Water Agency to elect to become a Groundwater Sustainability Agency in an area that Mission Springs claimed to be outside the statutory boundaries of Desert Water Agency. Under the Sustainable Groundwater Management Act, Desert Water Agency is deemed to be an exclusive Groundwater Sustainability Agency, but only within its statutory boundaries.

There were no updates on this case to report in 2018.

California WaterFix State Litigation

The following litigation regarding CWF filed in State court were coordinated in one proceeding.

California Environmental Quality Act

California Department of Water Resources Environmental Impact Cases (Super. Ct. Sacramento County, Coordinated Proceedings Special Title (Rule 3.550). Judicial Council Coordination Proceeding No. 4942).

In July 2017, DWR certified the EIR, approved CWF (Alternative 4a), and filed a notice of determination. In August 2017, several different petitioners filed petitions for writ of mandate in four different superior court venues within the State of California challenging DWR's project approval. The cases have been coordinated in Sacramento County Superior Court. The coordinated cases are in the pretrial phase. In 2018, the motions filed by the Metropolitan Water District of Southern California and State Water Contractors to intervene as defendants

in the actions coordinated in this proceeding were granted.

Validation

California Department of Water Resources v. All Persons Interested in the Matter of the Authorization of Revenue Bonds, the Issuance, Sale and Delivery of CWF's Revenue Bonds Series A.

On July, 21, 2017, DWR filed a validation action in Sacramento County Superior Court to confirm the validity of a proposed financing approach for CWF. Numerous entities and organizations supporting and opposing the CWF have filed answers to this action. The case has been coordinated with environmental impact cases in Sacramento County Superior Court. The coordinated cases are in the pretrial phase.

In 2018, there were no updates on this case.

California Endangered Species Act: Incidental Take Permit

County of San Joaquin, et al., v. California Department of Water Resources and California Department of Fish and Wildlife (Case No. 34-2017-80002677); CWF Bay.Org et al. v. California Department of Fish and Wildlife and Department of Water Resources (Case No. 34.2017.80002695); North Delta Water Agency v. California Department of Fish and Wildlife and DWR as Real Party in Interest (Case No. 34-2017-80002725).

After the Department of Fish and Wildlife issued an incidental take permit for CWF to DWR on July 28, 2017, two lawsuits were filed that challenged the adequacy of the incidental take permit. The incidental take permit provided coverage for incidental take to DWR for construction and operation of CWF for several State-listed species found in the Sacramento-San Joaquin Delta (Delta).

In November 2017, the cases were ruled to be related, designated complex cases, and assigned in Sacramento County Superior Court. These cases were coordinated with the environmental impact cases and the

validation case. The coordinated cases are in the pretrial phase.

There were no updates or activity on this case in 2018.

California WaterFix Federal Litigation

Endangered Species Act: Biological Opinions

Bay.Org, et al., v. Ryan Zinke, et al. (Case No. 4:17-cv-3739-YGR); Golden Gate Salmon Association, et al., v. Wilbur Ross, et al. (Case No. 4:17-cv-3742-YGR). On June 29, 2017, environmental groups and water districts filed two lawsuits in federal court challenging the adequacy of the biological opinions for CWF. The claims allege that the federal fish agencies did not adequately analyze the impacts of CWF operations on the listed endangered species in the Delta.

The U.S. Fish and Wildlife Service's biological opinion on CWF analyzed potential impacts to 16 Endangered Species Act listed species and critical habitat and determined that CWF was not likely to jeopardize the continued existence of the species nor destroy or adversely modify the critical habitats.

The National Marine Fisheries Service's biological opinion on CWF analyzed potential impacts to the listed winter-run and spring-run salmon and their critical habitat and determined that CWF was not likely to jeopardize the continued existence of the species nor destroy or adversely modify the critical habitats.

On August 30, 2017, the cases were transferred to the Eastern District Court of California. On October 10, 2017, the Eastern District Court granted motions of DWR, the State Water Contractors, and The Metropolitan Water District of Southern California to intervene in the cases in support of the biological opinions.

Also in October 2017, the court issued a schedule for preparing the administrative records for the cases in spring 2018 and for filing briefs in the fall and winter of 2018, with the schedule dates for the National Marine Fisheries Service's case preceding the U.S. Fish and Wildlife Service's case by about two months. The federal agencies are in the process of preparing the administrative record.

California WaterFix State Water Resources Control Board Proceedings

DWR submitted its application to the State Water Board for a change of point of diversion for the CWF project on May 31, 2016. The evidentiary hearing in response to this application was scheduled in two parts, with the first part focusing on impacts to water user rights and the second part focusing on fish and wildlife. These evidentiary hearings are necessary for the State Water Board to obtain pertinent evidence to ascertain whether it should approve the joint (DWR and Bureau of Reclamation) petition to add three new points of diversion/redirection to specified water rights permits in connection with CWF. There were more than 70 named parties at the close of 2017, including water districts, State agencies, environmental groups, counties, cities, and private individuals. Part 1 of the proceedings commenced on December 2016 and was completed in June 2017.

In August 2017, the State Water Board granted DWR's request to establish a schedule for Part 2 of the hearing. All parties were required to submit their cases-in-chief by November 30, 2017, with a prehearing conference on October 19, 2017.

In 2018, there were no updates or activity to report on this case.

Other Cases

The Monterey Amendment

Central Delta Water Agency, et al. v. California Department of Water Resources (Super. Ct. Sacramento County, No. 34-2010-80000561) (Central Delta I) (C078249 and C080572, app. pending); Central Delta Water Agency, et al. v. Kern County Water Agency et al., California Department of Water Resources et al., Real Parties in Interest (Super. Ct. Kern County, No. S-1500-CV-270965) (Central Delta II); Rosedale-Rio Bravo Water Storage District and Buena Vista Water Storage District v. California Department of Water Resources (Super. Ct. Kern County, No. S-1500-CV-270635-KCT/Super. Ct. Sacramento County, No. 34-2010-80000703) (Rosedale-Rio Bravo).

After lengthy negotiations conducted in Monterey, the Monterey Agreement was signed in December 1994 by DWR, five SWP Contractors, and the Central Coast Water Authority. The agreement contained principles to guide the amendment of Water Supply Contracts to address water allocation and issues related to SWP management and financing.

From 1995 to 1999, 27 of the 29 SWP Contractors executed Monterey Amendments. The Monterey Agreement EIR was certified in October 1995, and in December 1995, a lawsuit was filed (*Planning and Conservation League v. DWR*) challenging the EIR. A new "Monterey Plus EIR" was prepared, certified in 2010, and challenged in court (*Central Delta I*, *Central Delta II*, and *Rosedale-Rio Bravo*).

In November 2014, the court ordered DWR to decertify the Monterey Plus EIR and revise and certify it by December 31, 2015 (*Central Delta I* and *Rosedale-Rio Bravo*). In October and December 2014, appeals were filed in *Central Delta I*. On August 10, 2015, the court granted DWR's request for an extension and set a new deadline of June 30, 2016, for completion of a revised Monterey Plus EIR. (For more information about the Monterey Agreement, the Monterey amendments,

and related litigation, see Bulletins 132-95 through 132-04 and 132-10 through 132-17.)

In April 2016, a draft revised Monterey Plus EIR was released, and in May 2016, at DWR's request, the court extended the deadline for completion of the revised Monterey Plus EIR to September 28, 2016. In September 2016, DWR certified the revised Monterey Plus EIR, filed a notice of decision, and returned the writ to the court. In 2017, the Central Delta plaintiffs appealed the lower court's ruling to the Third District Court of Appeal.

In 2018, there were no updates on this case.

For more information about the revised Monterey Plus EIR, see Chapter 8, Water Contracts and Deliveries.

Center for Food Safety, et al. v. California Department of Water Resources (Super. Ct. Sacramento County, No. 34-2016-800002469) (C086215 app. pending). After DWR certified the revised Monterey Plus EIR and returned the writ to the court in September 2016, the Center for Food Safety, Center for Biological Diversity, California Sportfishing Protection Alliance, California Water Impact Network, Central Delta Water Agency, and South Delta Water Agency filed a new lawsuit on October 21, 2016, challenging the revised Monterey Plus EIR. In October 2017, the court denied petitioners' petition for writ of mandate and discharged the writ against DWR. In December 2017, petitioners filed an appeal at the Third District Court of Appeal.

There were no updates or developments on this case to report in 2018.

City of Antioch v. California Department of Water Resources (Case No. 34-2017-00218154). On August 28, 2017, the City of Antioch (Antioch) filed a complaint against DWR for breach of contract. A provision of the 1968 water supply agreement between Antioch and DWR provides that the State will not grant compensation for damages caused

by the SWP to other Delta entities that would be "substantially more favorable" than the terms of the 1968 agreement with Antioch. In 2016, DWR entered into an agreement with Contra Costa Water District that Antioch alleges violates this provision.

DWR filed a demurrer on December 15, 2017, arguing that Antioch failed to state facts sufficient to constitute a cause of action.

In 2018, there were no updates on this case.

Construction Arbitration

D.A. McCosker Construction Co., dba Independent Construction Company v. California Department of Water Resources (OAH/PWCA No. A-0021-2013).

This dispute arose out of the construction of Dyer Reservoir under a contract for \$11 million. The work concluded in 2012, nearly two years behind schedule. In September 2013, the contractor brought a binding arbitration action seeking additional compensation in the amount of \$12 million due to alleged defective specifications, differing site conditions, and owner-caused delay. DWR withheld over \$1 million in liquidated damages for late completion. Limited discovery was conducted in 2014, and a mediation that took place in December 2014 was unsuccessful. A 32-day arbitration commenced on January 11, 2016. The arbitrator issued a decision on November 21, 2016, finding DWR responsible for \$1.5 million of the contractor's contract claims.

In January 2018, an arbitration hearing was held and a settlement was reached. In February 2018, DWR filed a petition to vacate the amended arbitration award. After briefing by the parties on May 3, 2018, the Sacramento County Superior Court issued a tentative ruling in DWR's favor, vacating the amended arbitration award and ruling that the contractor would get no recovery at all. The basis for the court's ruling was that, due to the failure of the contractor to fulfill

its legal obligations under the California Contractor's License Law (Business and Professions Code, Sec. 7068), the contractor was deemed to be without a contractor's license for purposes of this project, a necessary condition under California law for a construction contractor to receive payment for any work. The contractor requested a continuance (deferral) of the tentative ruling on technical grounds, which the judge granted.

Spiniello Companies v. Department of Water Resources (OAH/PWCA No. A-0016-2016).

Spiniello Companies, which completed the Mentone Pipeline project and related East Branch Extension facilities, filed an arbitration complaint against DWR in July 2016, seeking approximately \$16 million in damages. The complaint alleged differing site conditions as well as damages for owner-caused delay due to a flash flood, among several other claims. DWR contested the matter and withheld \$4.5 million due to the contractor's late completion of the project. In September 2017, discovery started with the exchange of hundreds of thousands of pages of project and environmental records in anticipation of a two-day mediation.

At a mediation on June 12, 2018, the parties reached a settlement of this litigation, whereby DWR agreed (a) to return to Spiniello the \$4.5 million being withheld, and (b) pay an additional \$3.2 million for Spiniello's affirmative contract claims, for a total payment of \$7.7 million in full settlement of the case. The final settlement payment was made and the case was dismissed on July 23, 2018.

Clean Water Act

Catskill Mountains Chapter of Trout Unlimited, Inc., et al. v. United States Environmental Protection Agency, et al. (N.Y.Dist.Ct., No. 7:08-CV-05606-KMK, app. pending).

A number of environmental groups, private entities, and governmental agencies

controlling or utilizing water filed an action challenging the application of the U.S. Environmental Protection Agency's Water Transfer Rule under the Clean Water Act. The Clean Water Act provides that the discharge of any pollutant by any person without a National Pollution Discharge Elimination System Permit is unlawful (33 U.S.C. Section 1311(a)). The federal statute defines a discharge of a pollutant to mean any addition of any pollutant to navigable water from any point source. The Environmental Protection Agency has applied the Clean Water Act provisions to transfers of water between navigable bodies of water and not to "water transfers." According to the Clean Water Act, "water transfers" are "an activity that conveys or connects waters of the United States without subjecting the transferred water to intervening industrial, municipal, or commercial use."

On March 28, 2014, the court found the Environmental Protection Agency Water Transfer Rule to be inconsistent with the Clean Water Act. The decision was appealed. As the outcome of the case will have a direct and material effect on the operations of the SWP, DWR filed an amicus curiae brief in June 2014 to advise the court of relevant information and arguments the court might wish to consider. Following oral arguments on December 1, 2015, the appellate court reversed the trial court and reinstated the Water Transfer Rule. On March 6, 2017, a petition for rehearing was filed by the plaintiffs.

There was no activity or updates on this case to report in 2018.

Drought-Related Actions

***San Joaquin River Exchange Contractors Water Authority, et al. v. State of California, State Water Board, et al., California
Department of Water Resources and United States Bureau of Reclamation, Real Parties in Interest (Super. Ct. Sacramento County,***

No. 34-2016-80002277). In 2014 and 2015, due to severe drought, the Governor issued various executive orders, declarations, and emergency proclamations directing State and local agencies to take all necessary actions to conserve water, enhance and protect water supplies, and reduce harmful effects of the drought. In 2015, DWR and Reclamation submitted temporary urgency change petitions to the State Water Board, requesting temporary modification of certain requirements in Water Right Decision 1641 to allow management of reservoir releases on a pattern that would conserve upstream storage for fish and wildlife protection and provide for Delta salinity control later in the year while providing critical water for supply needs.

The State Water Board issued orders in response to the temporary urgency change petitions. The State Water Board received numerous comments and objections to the temporary urgency change petition orders and 10 petitions for reconsideration. In December 2015, the State Water Board issued water right order WR 2015-0043 affirming the temporary urgency change petition orders and renewing them for another 180 days. The order also denied in part and granted in part the petitions for reconsideration. A petition for writ of administrative mandamus and complaint for declaratory relief was filed January 14, 2016.

For 2017 and 2018, there are no new developments or changes in this case.

DWR and U.S. Department of the Interior and Reclamation are named as real parties in interest. The issues include impacts to fish and wildlife and the exchange contractors' and others' water supply, and whether the State Water Board acted outside its authority in authorizing the changes specified in the temporary urgency change petition orders.

California Water Curtailment Cases (Super. Ct. Santa Clara County, No. 1-15-CV-285182,

**Coordinated Proceedings Special Title
[Rule 3.550], Judicial Council Coordination
Proceeding No. 4838.** The following cases were coordinated into this proceeding:

(1) *Byron-Bethany Irrigation District v. California State Water Resources Control Board, et al.* (Super. Ct. Contra Costa County, No. N150967); (2) *West Side Irrigation District, Central Delta Water Agency, South Delta Water Agency, and Woods Irrigation Company v. California State Water Resources Control Board, et al.* (Super. Ct. Sacramento County, No. 34-2015-80002121); (3) *Banta-Carbona Irrigation District v. California State Water Resources Control Board, et al.* (Super. Ct. San Joaquin County, No. 39-2015-00326421); (4) *Patterson Irrigation District v. California State Water Resources Control Board, et al.* (Super. Ct. Stanislaus County, No. 2015307); (5) *San Joaquin Tributaries Authority, Oakdale Irrigation District, and South San Joaquin Irrigation District v. California State Water Resources Control Board, et al.* (Super. Ct. Stanislaus County, No. 2015366). On January 17, 2014, the Governor proclaimed a state of emergency to address the record dry conditions around the state. On the same day, as directed by the proclamation, the State Water Board issued a statewide notice of water shortages and potential for future curtailment of water right diversions. If necessary, the State Water Board would curtail diversions of water on a water right priority basis to prevent unreasonable diversion or use of water so that appropriate minimum amounts of water would be available for public trust needs for minimum flows for State- and federally- listed anadromous fish, to protect senior water rights, and for minimum health and safety needs.

In May 2014, the State Water Board issued curtailment notices. A statewide notice of water shortages and potential for future curtailment of water right diversions was issued again in January 2015, followed by curtailment notices issued in April, May, and June 2015. In July 2015, the State Water Board began rescinding the curtailment

notices through dismissal orders and all notices were rescinded by the end of the year.

In June and September 2015, five complaints were filed by different water districts in several different county superior courts. The plaintiffs requested a writ of mandate, declaratory and injunctive relief, and damages. The cases were consolidated in Santa Clara County Superior Court. After the State Water Board's first round of demurrers, which were partially granted (allowed: issues related to due process violations and the scope of the State Water Board's authority; not allowed: takings claims, claims for declaratory and injunctive relief, and the Delta pool), the plaintiffs amended their complaints, and the State Water Board filed another round of demurrers. These demurrers and motions by plaintiffs were heard on April 28, 2017. On May 4, 2017, the court ruled on all demurrers and motions in favor of the State Water Board. The first phase of the trial was scheduled for January 26, 2018. DWR has intervened in the litigation, joining in parts with the State Water Board and the State Water Contractors.

The first phase of the trial was held on January 26, 2018, and the court issued a final statement of decision phase one trial on April 3, 2018. The court rejected petitioners' claims challenging the State Water Board dismissal orders, holding that: (1) petitioners lacked standing to challenge the dismissal orders, as they were not aggrieved by the orders which imposed no consequences on them; (2) petitioners failed to show that the State Water Board failed to conduct enforcement proceeding in the manner required by law; and (3) the curtailment notices were a "final agency action" under Water Code Section 1126.

Although the court found petitioners' substantive claims moot in light of the dismissal orders ending the enforcement

actions, it addressed the jurisdictional scope of the State Water Board's authority due to its continued public interest and importance, holding that (1) the State Water Board does not have jurisdiction to curtail pre-1914 appropriators under Water Code Section 1052 based on a general lack of available water under their priorities of right; and (2) the curtailment notices violated due process and, for future droughts, the State Water Board was advised to fashion a curtailment process that gives water users a meaningful opportunity to challenge the underlying findings before they are ordered to curtail their water use and before fines for noncompliance begin to accrue against them.



Chapter 6

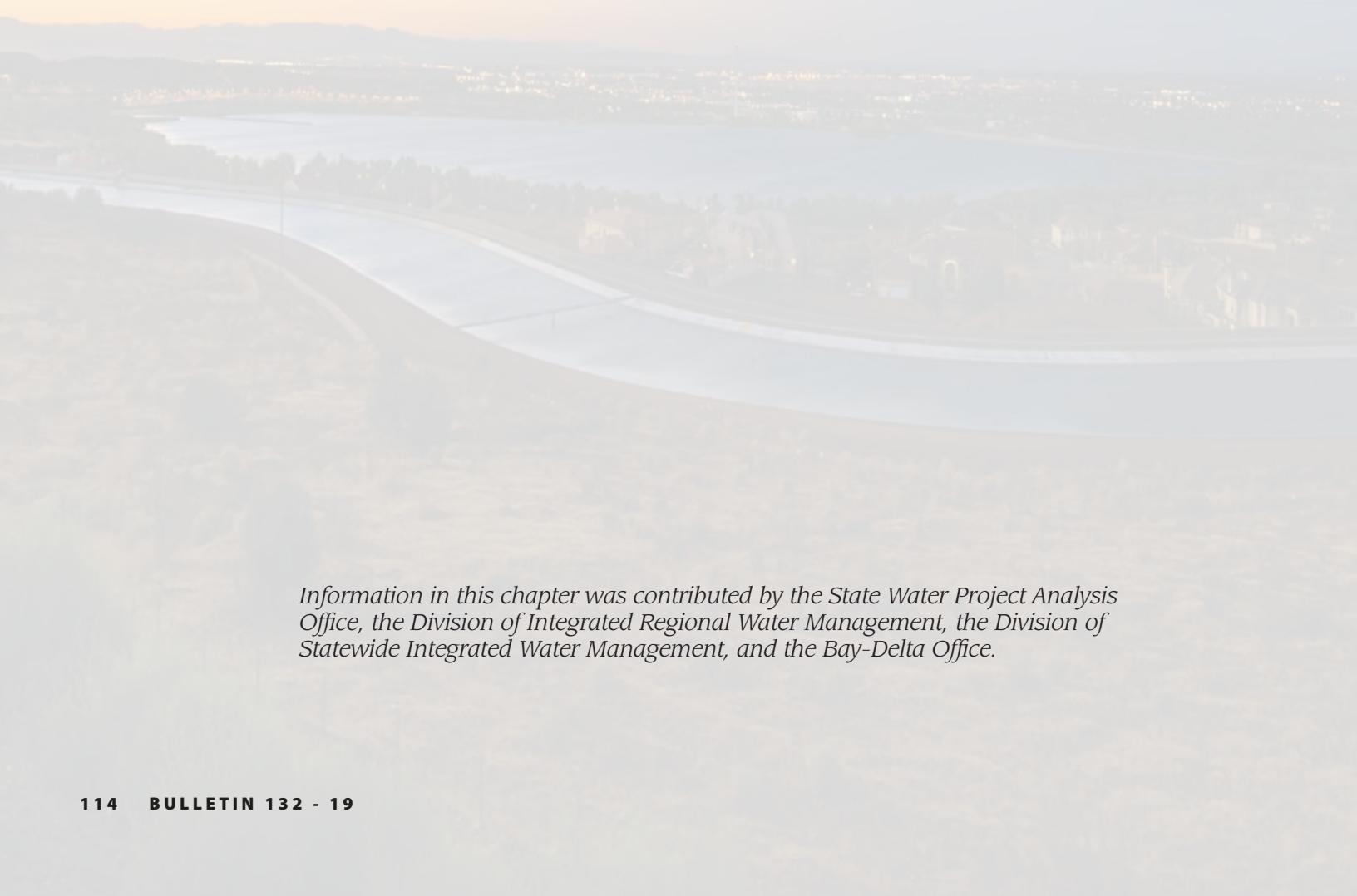
Water Supply Development and Reliability

East Branch of the California Aqueduct in northern Los Angeles County.

Significant Events in 2018

The State Water Board change petition hearing for California Waterfix that began in July 2016 continued in 2018 with a final hearing on October 1.

The State Water Board adopted the current *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) on December 12, 2018 (Resolution No. 2018-0059).



Information in this chapter was contributed by the State Water Project Analysis Office, the Division of Integrated Regional Water Management, the Division of Statewide Integrated Water Management, and the Bay-Delta Office.

The Department of Water Resources (DWR) works to improve the reliability of State Water Project (SWP) water supplies and the annual Table A water allocations delivered to SWP Contractors. DWR is engaged in planning activities to develop additional water supplies and storage capacity.

Developing new water supplies and storage projects that are economically, environmentally, and technically sound, while satisfying institutional requirements and political concerns, presents significant challenges. Many concerns center on possible adverse effects that additional storage and delivery facilities may have locally and on the Sacramento-San Joaquin Delta (Delta). In the SWP conveyance system, the Delta is the critical link between water supplies in the Sacramento Valley and deliveries to the rest of the Central Valley and Southern California. DWR works with State and federal governments, local agencies, and public interest stakeholder groups to ensure water supply reliability now and in the future.

Supply Development and Reliability

To meet SWP Contractors' needs for sufficient water supplies, DWR is engaged in planning, developing, and providing local assistance with the objective of augmenting future SWP water supplies. This includes the following activities:

- facilitating transfers between SWP Contractors and other agencies, including Central Valley Project (CVP) contractors
- funding studies on the giant garter snake (*Thamnophis gigas*), a protected species known to inhabit rice growing regions of the Sacramento Valley, and on rice evapotranspiration, to better understand issues related to the transfer of water made available by crop idling
- supporting the planning and implementation of local and regional

conjunctive use projects in the Sacramento Valley

- constructing, operating, and maintaining groundwater and land subsidence monitoring networks to detect potential impacts caused by groundwater substitution transfers and other groundwater management activities in the Sacramento Valley
- developing analytical tools to improve estimates on the effects of streamflow depletion due to groundwater substitution transfers on the SWP
- developing analytical tools to support and enhance sustainable groundwater management in the Sacramento Valley
- assisting with the development and implementation of restoration projects in the Feather River watershed to reduce sedimentation in Lake Oroville and preserve watershed storage capacity
- investigating and evaluating storage projects

Water Conveyance Through the SWP

DWR encourages and facilitates temporary transfers of water using SWP conveyance facilities for SWP Contractors and other agencies to help meet local, State, and environmental water supply needs. As a practical matter, SWP facilities are often needed to convey transfer water from the existing place of use to the place of use of the transferee. State law requires DWR to make unused SWP capacity available for transfers upon payment of fair compensation, provided that (1) no legal user of water will be injured; (2) there will be no unreasonable effect on fish, wildlife, or other instream beneficial uses; and (3) there

will be no unreasonable effect on the overall economy or the environment of the county from which the water is being transferred (California Water Code [CWC] Section 1810). Water transfers can involve transfers and exchanges among SWP Contractors, between SWP Contractors and non-SWP entities, or between two or more non-SWP

entities. For more information, see the sidebar, Transfer and Exchange Evaluations.

For information about 2018 water transfers, see Chapter 8, Water Contracts and Deliveries.

Transfer and Exchange Evaluations

An important element of any water transfer is to determine what quantity of water, if any, is transferable.

The transferability of water depends on many factors including the source of the water being transferred, what actions are taken to make water available, when the water can be made available, and the type of water rights the existing user holds. Several California Water Code (CWC) provisions authorize temporary transfers of water under rights issued by the State Water Resources Control Board (State Water Board) (appropriative water rights issued after 1914) and place conditions on the transfers to protect those not involved in them.

Short-term transfers, of less than one year, are authorized under CWC Sections 1725–1732. Long-term transfers, for periods greater than one year, are authorized by CWC Sections 1735–1737. Other CWC sections specify conditions under which water can be transferred and legal protections for those transferring water.

Transfers based on water rights obtained before 1914 are not under State Water Board jurisdiction but must comply with the requirements of the California Environmental Quality Act (CEQA) and possibly the National Environmental Policy Act (NEPA).

The CWC sections noted above contain provisions intended to protect other legal users of water and fish and wildlife from the possible adverse effects of a water transfer. These provisions reflect the concept that changes can be made to the authorized place and purpose of use or point of diversion of a water supply as long as there is no injury to others as a result of the change (the “no injury rule”). The no injury rule in State water law is intended to protect other legal users from the potential expansion of water use beyond what would have been consumed by the original users in the absence of the transfer. Hence, under the no injury rule, only “new water” is transferable (i.e., water added to the downstream water supply only as a result of the transfer). To protect other users, a transfer would not be authorized to the extent that it would reduce the amount or timing of water that would otherwise be available to downstream users, regardless of the water right priority of those users.

CWC Section 1810(d) requires the Department of Water Resources (DWR) to consider potential impacts of a transfer on legal users, instream uses, and the economy of the area from which the water would be transferred. DWR must determine whether to allow the use of any unused available water conveyance capacity for a transfer under this section. DWR reviews each request to transfer water through State Water Project (SWP) facilities to assure that only new water will be transferred. This requirement applies to transfers based on both pre-1914 and post-1914 water rights.

Transfer water is most commonly developed through one of four methods: surplus water release from storage facilities, substituting groundwater for transferred surface water, idling agricultural land, and undertaking conservation activities that reduce consumptive use of water. Because transfers may result in direct impacts and third-party impacts (impacts to parties not involved in the transfer), certain CWC provisions were enacted to limit potential impacts. For example, since additional groundwater pumping from a groundwater substitution project may potentially affect other groundwater users in the area, CWC Section 1745.10 requires that the groundwater substitution project: (1) be consistent with a groundwater management plan adopted pursuant to State law for the affected area or (2) if a management plan has not been adopted, the transfer project proponent determines the transfer would not create or contribute to conditions of long-term overdraft in the affected groundwater basin.

Injury can also occur due to streamflow depletion induced by increased pumping from wells for groundwater substitution transfers. Consequently, to mitigate possible impacts from groundwater substitution transfers, DWR assesses a streamflow depletion factor, which represents an estimate of the potential effects of the additional groundwater pumping on the surface water system. Each type of transfer has its own set of potential impacts that must be evaluated to protect parties not involved in the transfer.

With the exception of short-term transfers under CWC Section 1725 et seq. (which provides for an expedited process for water transfers based on rights issued by the State Water Board), water transfers are subject to compliance with CEQA and, possibly, NEPA. The CEQA/NEPA and State Water Board processes provide opportunities for public review and comment on water transfer proposals.

Staff in DWR's State Water Project Analysis Office, Division of Operations and Maintenance, Division of Integrated Regional Water Management, and the Office of the General Counsel evaluate proposed water transfers to determine whether the transfers will impact the SWP, other water users, the environment, or the area from which the water will be transferred. In 2016, DWR and the U.S. Bureau of Reclamation issued a white paper providing technical information about water transfers requiring use of water project facilities.

SWP Delivery Capability Report

During 2018 there were no updates.

SWP Future Water Supply Program

The Future Water Supply Program's goal is to improve and protect the water supply reliability of the SWP while protecting the environment and other legal users of water. The program consists of two main components: Sacramento Valley groundwater and upper Feather River watershed management.

The Sacramento Valley groundwater component provides technical support for the Lower Yuba River Accord, monitors other groundwater and conjunctive-use projects, and assesses conditions of the Sacramento Valley Groundwater Basin that may affect SWP yield. The four primary objectives of the Sacramento Valley groundwater component are to (1) collect, analyze, and report data to determine the effects of groundwater substitution transfers on the SWP; (2) analyze and report on groundwater substitution transfers that use SWP facilities; (3) monitor groundwater management planning and implementation activities that may affect SWP yield; and (4) develop and utilize analytical tools to support the estimation of streamflow depletion due to groundwater substitution transfers and enhance sustainable groundwater management in the Sacramento Valley.

The upper Feather River watershed management component of the program evaluates the Feather River watershed above Lake Oroville with respect to watershed management and restoration actions being planned or implemented. These actions are intended to improve the ecological and hydrologic functions of watersheds, thus affecting base flow, improving flood attenuation, and reducing erosion and sedimentation. DWR continued collaborative efforts with local stakeholders in 2018 to implement and enhance monitoring

activities for assessing the immediate and long-term hydrologic effects of these actions.

SWP Water Rights Activities

Water Right Permits and Licenses

During 2018 there were no updates.

For more information on DWR's water rights, see Bulletin 132-18 and earlier versions.

Petition for Temporary Change to Consolidate Place of Use

On April 23, 2018, DWR and the U.S. Bureau of Reclamation (Reclamation) submitted a petition for temporary change under CWC Section 1725, et seq., to the State Water Resources Control Board (State Water Board). In the petition, DWR and Reclamation requested changes to their water right permits that would temporarily consolidate the SWP and CVP authorized places of use.

Although California experienced historic wet conditions in 2017, hydrologic conditions in 2018 were below normal. The consolidated place of use enhanced operational flexibility and reduced energy consumption for both SWP and CVP without increasing Delta exports and injuring other legal water users. The State Water Board issued an order on July 2, 2018, approving the requested changes; the order remains in effect for one year.

For more information about transfers and exchanges, please see Chapter 8, Water Contracts and Deliveries.

Water Right Change Petition for California WaterFix

On August 25, 2015, DWR and Reclamation submitted a joint petition to the State Water Board requesting changes in SWP and CVP water right permit conditions. The petition proposes adding points of diversion of

water for the SWP and CVP associated with California WaterFix. The State Water Board change petition hearing for California WaterFix that began in July 2016 continued in 2018.

For additional information about California WaterFix, see Chapter 3, Environmental Programs.

Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary

The Delta and Suisun Marsh are located where California's two major river systems, the Sacramento and the San Joaquin, converge and flow westward to meet incoming seawater tides flowing through the San Francisco Bay. The watershed of the Delta is a critical source of water supply for much of California. It's a source of drinking water for two-thirds of the state's population; it supplies some of the state's most productive agricultural areas; and it provides water for fish, wildlife, and other public trust uses of water within and upstream of the Delta.

Water originating in the Delta watershed is delivered to areas within the watershed and to areas south and west of the Delta. The largest water distribution systems that release stored water into the Delta and directly divert water from the Delta are the SWP, operated by DWR, and the federal CVP, operated by Reclamation. Numerous other water storage and diversion projects also influence Delta inflows, outflows, water quality, and other hydrologic characteristics.

The State Water Board regulates the quality of water in the Delta, the diversion and use of water within the Delta, and the diversion of water from the Delta for water supply. The State Water Board coordinates its regulatory authorities under State laws governing water

quality and water rights, ensuring that water quality is protected for all beneficial uses when water is diverted from the Delta. The State Water Board establishes water quality objectives to protect a variety of beneficial uses of water. The objectives are contained in a water quality control plan adopted by the State Water Board.

The State Water Board adopted the current *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) on December 12, 2018 (Resolution No. 2018-0059). Water Right Decision 1641, adopted by the State Water Board in 1999, implements the objectives of the Bay-Delta Plan by placing conditions on water right permits and licenses for the SWP and CVP that require the projects to meet certain objectives in the Bay-Delta Plan.

Adoption of 2018 Bay-Delta Plan

CWC Section 13240 requires that the water quality control plan be periodically reviewed. Federal Clean Water Act Section 303(c) (33 U.S.C. Section 1313(c)) requires a triennial review of State water quality "standards," as defined in the act. Formal review of the 2006 Bay-Delta Plan began in October 2008. The review consisted of a four-phased process to develop and implement updates to the Bay-Delta Plan and flow objectives for priority tributaries to the Delta.

The review and amendment process for the 2006 Bay-Delta Plan included the following components:

- identifying elements that may need to be amended or new elements that may need to be added
- preparing any amendments to or revisions of the entire water quality control plan
- State Water Board's adoption of some or all of the amendments or revisions

State Water Board information-gathering activities affected the scope of the 2006 Bay-Delta Plan review and included evidentiary hearings on critical issues concerning the Delta's ecology.

On September 15, 2016, the State Water Board released the draft revised *Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary: San Joaquin River Flows and Southern Delta Water Quality* (Substitute Environmental Document).

The State Water Board proposed to update two elements of the 2006 Bay-Delta Plan.

- (1) San Joaquin River flow objectives for the protection of fish and wildlife: the flow element of the proposed plan update would increase the required flows left in the rivers and would change the area currently protected by flow requirements by adding compliance locations on the Stanislaus, Tuolumne, and Merced Rivers, instead of only on the San Joaquin River at Vernalis.
- (2) Southern Delta salinity objectives for the protection of agriculture: the southern Delta salinity element of the proposed plan update would increase salinity objectives while generally maintaining existing conditions and changing compliance locations.

The State Water Board also proposed to update the program of implementation to achieve these objectives, which would include monitoring and special studies to fulfill information needs and to evaluate the effectiveness of the new objectives and their implementation.

The revised Substitute Environmental Document and associated appendices were prepared in compliance with the

California Environmental Quality Act, the CWC, and other applicable State and federal requirements. The document included an analysis of the expected environmental, water supply, economic, and hydropower effects of the Lower San Joaquin River flow and southern Delta salinity alternatives.

In July 2018, the State Water Board issued the final Substitute Environmental Document.

On July 27, 2018, Reclamation issued its comments on the State Water Board document and indicated that the U.S. Secretary of the Interior may determine that the new water quality standards are not consistent with the congressional directives for the CVP and New Melones Project.

On August 15, 2018, the California Secretary for Natural Resources requested that the State Water Board give DWR and the California Department of Fish and Wildlife the opportunity to discuss information they could present on scientific methods available to evaluate the relative benefits of flow and non-flow actions to protect native salmonid fish species in the San Joaquin River basin.

On December 12, 2018, the State Water Board adopted amendments to the Bay-Delta Plan.

For more information about the water quality control plan, see Chapter 4, Water Quality Programs.

Delta Compliance Program

The Delta Compliance Program (originally named the Delta Conveyance Program) previously consisted of projects proposed in the North and South Delta. As a result of the efforts associated with the California WaterFix and the Delta Stewardship Council's *Delta Plan*, many of these efforts were suspended as staff was redirected to work on the SWP Delta Compliance Program. The SWP Delta Compliance

Program addresses regulatory requirements under the National Marine Fisheries Service's and U.S. Fish and Wildlife Service's biological opinions and the Department of Fish and Wildlife's incidental take permit for the CVP and SWP Long-term Operations Criteria and Plan. For more information about the SWP Delta Compliance Program, see Chapter 2, Delta Resources.



Chapter 7

Water Supply

Minimal snow was found during 2018's first manual snow survey, held on January 3. The survey site, Phillips Station, is approximately 90 miles east of Sacramento off Highway 50 in El Dorado County.

Significant Events in 2018

Water year 2017–2018 was a below average year for precipitation and mountain snowpack. This was a significant change from last year, which had above average precipitation and mountain snowpack. California received precipitation at 73 percent of average in water year 2017–2018 compared to 164, 105, and 75 percent of average in water years 2016–2017, 2015–2016, and 2014–2015, respectively. Overall, the annual percent of average precipitation followed a decreasing gradient from north to south. Central California experienced the greatest percent of average snowpack, while Southern California experienced the greatest percent of average runoff.

The Northern Sierra 8-Station Precipitation Index had 41.0 inches of precipitation, which represents 79 percent of the index average. Rainfall in the months of November, January, and March represented 75 percent of this total. The San Joaquin 5-Station Precipitation and Tulare Basin 6-Station Precipitation indices totaled 29.7 inches (74 percent of average), and 18.1 inches (63 percent of average), respectively. The statewide mountain snowpack on April 1 was 54 percent of average based on the automated snow sensor network, but peaked five days prior on March 27 at 58 percent (16.2 inches of snow water equivalent) of the April 1 average.

Statewide river runoff totaled 68 percent of average in the 2017–2018 water year, which was a dramatic decrease after the previous water year's total of 217 percent of average. The Feather River runoff totaled 77 percent of average. Water year runoff totals for the Sacramento River Region (SRR), San Joaquin 4 Rivers (SJR), and Tulare Lake Region (TLR) were 72, 82, and 68 percent of average, respectively.

The Sacramento Valley Water Year Hydrologic Classification (Sacramento Valley 40-30-30 Index) and the San Joaquin Valley Water Year Hydrologic Classification (San Joaquin Valley 60-20-20 Index) were both "below normal," based on observed data for water year 2017–2018.

A net decrease in average reservoir storage was realized in water year 2017–2018. The year began at 107 percent of average on October 1 and finished at 99 percent of average at the end of September.

Information in this chapter was contributed by the Division of Flood Management and the Division of Operations and Maintenance.

The Department of Water Resources (DWR) monitors precipitation and mountain snowpack, calculates river runoff, and operates storage facilities during each water year. The official California water year runs from October 1 through September 30.

California's Hydrology

DWR divides California into 10 hydrologic regions. Each hydrologic region corresponds to the state's major water drainage basins. Annual precipitation, mountain snowpack, and runoff data are collected and analyzed for the hydrologic regions and used to determine water year type classifications and forecasts for the state's water supply outlook.

The state's precipitation is measured using three primary indices, the Northern Sierra 8-Station Precipitation Index, the San Joaquin 5-Station Precipitation Index, and the Tulare Basin 6-Station Precipitation Index. For more information, see the sidebar, Precipitation Indices.

Runoff estimates are determined for the Sacramento River Region (SRR), the San Joaquin 4 Rivers (SJR), and the Tulare Lake Region (TLR). For more information, see the sidebar, Runoff Estimates.

The Eight River Index is used to determine the duration of fish and wildlife salinity and flow standards at Chipps Island or Port Chicago from February through June (see Chapter 4, Water Quality Programs). This index is the sum of the unimpaired runoff from the eight rivers in the SRR and SJR.

Two water supply indices, the Sacramento Valley Water Year Hydrologic Classification (Sacramento Valley 40-30-30 Index) and the San Joaquin Valley Water Year Hydrologic Classification (San Joaquin Valley 60-20-20 Index), are used to derive the water year classification for the Sacramento Valley and the San Joaquin Valley, respectively. The water supply indices are used by various water agencies to formulate water supply

decisions. For more information, see the sidebar, Water Supply Indices.

DWR continually updates hydrologic data and information. If your research requires more current data than was available at the time of publication, please consult the most recent edition of Bulletin 120, Bulletin 132, and/or contact DWR's Hydrology and Flood Operations Office.

Water Year 2017–2018

California experiences extreme variability in year-to-year outcomes of seasonal precipitation accumulation. A recent example was the transition from the 2012–2016 drought to the very wet water year of 2016–2017, when all gauge stations received well over average precipitation. Water year 2017–2018 again demonstrated that variability can manifest itself year-to-year, as well as within a season: water year 2017–2018 showed that the accumulation of seasonal precipitation does not have to follow the expectations of averages.

Autumn and Winter

October was warm and dry, receiving 27 percent of average statewide precipitation. Conditions shifted rapidly in November when a trio of atmospheric rivers resulted in California experiencing 111 percent of average statewide precipitation and 168 percent of the Northern Sierra 8-Station Precipitation Index monthly average. However, the abundant precipitation vanished in December, leading to the first of two dry spells during the normal height of precipitation accumulation for California.

On average, December, January, and February typically account for half the annual precipitation accumulation in a water year. That was not the case in water year 2017–2018, as minimal precipitation fell in December and February. Statewide, 8 percent of average precipitation fell in December, and 19 percent of average fell in February. January was below average as well, at 83 percent of average statewide, but a few storms provided some important input for the season. Overall, the winter season defined by these three months was the fifth driest on record for the Northern Sierra 8-Station Precipitation Index. The only winter seasons that were drier were (listed from most dry to least dry) 1991, 1977, 1985, and 1976.

Spring and Summer

At the beginning of March, precipitation for the Northern Sierra 8-Station Precipitation Index was 59 percent of average, and the snowpack was only 23 percent of average statewide. Four atmospheric river events in March provided significant increases in streamflow, and combined with cold air entrained in the storms, the snowpack increased notably: the statewide snowpack in March jumped up to 58 percent of average at its peak. March precipitation eventually totaled 169 percent of average statewide, joining November as the primary months of precipitation input for the water year.

A decaying super typhoon's moisture was entrained into an atmospheric river that made landfall on the evening of April 5 and lasted through April 6. Heavy rain fell over much of the state, causing flooding in Yosemite National Park that forced the park to close for the weekend. This event boosted the April precipitation total to 121 percent of average, but snowpack increased only at the highest elevations due to the extremely warm nature of the storm. Statewide precipitation totals for May, June, July, August, and September were 74, 19, 57, 9, and 13 percent of average, respectively.

Precipitation

California experienced below average rainfall (73 percent of average) for the water year, and regionally, precipitation varied widely. Figure 7-1 presents water year precipitation for the various regions of the state. The largest amounts of precipitation fell in the North Lahontan and Sacramento River watersheds during the months November and March, but all watersheds had below average total precipitation for the water year.

Table 7-1 presents monthly precipitation totals for water year 2017–2018 at various gauges located throughout the state, listed north to south. Statewide, the wettest months, as measured by inches of precipitation, were November and March when most stations in the list received above average precipitation. In March, precipitation at every station listed in Table 7-1 was above normal except San Diego, with Blue Canyon accumulating the largest percent of average for the water year at 21.75 inches (256 percent of average).

Mount Shasta City in the north central part of California and Eureka Woodley Island on the north coast received 19.26 inches and 36.99 inches of precipitation, respectively.

Blue Canyon experienced precipitation above 200 percent of average in November and March. The total precipitation for the water year at this station was 65.69 inches (105 percent of average).

Areas of the Central Valley and the San Francisco Bay Area received the largest percent of average precipitation in March and April, respectively. In the Central Valley, March precipitation totals were 5.14 inches (215 percent of average) for Sacramento and 4.19 inches (226 percent of average) for Fresno. In San Francisco, April precipitation totals were 2.24 inches (138 percent of average). For the water year, Sacramento received 89 percent of its annual



Figure 7-1 Statewide Precipitation by Hydrologic Region, 2017–2018 Water Year, as Percent of Average

Table 7-1 Monthly Precipitation Totals at Various Locations in California, Water Year¹ 2017–2018 (inches)

| Station ² | Water Year 2017–2018 | | | | | | | | | | | | | Water Year 2018–2019 | | | |
|-------------------------------|----------------------|-------|------|-------|------|-------|------|------|------|------|------|------|--------------|----------------------|-------|------|-----|
| | 2017 | | | | | | 2018 | | | | | | | WY Total | Oct | Nov | Dec |
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | | | | | |
| Mount Shasta City | 0.61 | 4.13 | 0.29 | 4.08 | 0.78 | 4.61 | 2.29 | 2.07 | 0.02 | 0.14 | 0 | 0.24 | 19.26 | 0.57 | 4.16 | 3.68 | |
| percent of average | 26 | 90 | 5 | 64 | 14 | 105 | 81 | 122 | 2 | 56 | 0 | 30 | 53 | 24 | 91 | 62 | |
| Eureka Woodley Island | 1.64 | 7.4 | 1.94 | 7.86 | 2.87 | 8.5 | 5.02 | 0.79 | 0.7 | 0.03 | 0.05 | 0.19 | 36.99 | 0.85 | 4.94 | 4.95 | |
| percent of average | 55 | 134 | 30 | 121 | 56 | 163 | 175 | 44 | 115 | 27 | 21 | 25 | 97 | 28 | 89 | 77 | |
| Blue Canyon (DWR-2) | 1 | 18.75 | 0.98 | 11.19 | 2.14 | 21.75 | 8.09 | 1.67 | 0.02 | 0 | 0 | 0 | 65.59 | 1.33 | 10.59 | 5.2 | |
| percent of average | 27 | 238 | 9 | 90 | 22 | 256 | 161 | 61 | 2 | 0 | 0 | 0 | 105 | 35 | 134 | 50 | |
| Sacramento WB City | 0.15 | 2.13 | 0.14 | 5.2 | 0.6 | 5.14 | 2 | 0.6 | 0 | 0 | 0 | 0 | 15.96 | 0.04 | 2.66 | 2.65 | |
| percent of average | 16 | 105 | 4 | 139 | 18 | 215 | 135 | 130 | 0 | 0 | 0 | 0 | 89 | 4 | 131 | 83 | |
| San Francisco WB Airport | 0.21 | 2.77 | 0.07 | 4.85 | 0.39 | 3.32 | 2.24 | 0.01 | 0 | 0 | 0 | 0 | 13.86 | 0.16 | 3.07 | 1.65 | |
| percent of average | 21 | 100 | 2 | 99 | 9 | 110 | 138 | 3 | 0 | 0 | 0 | 0 | 61 | 16 | 111 | 37 | |
| Yosemite Headquarters | 0.52 | 4.28 | 0.24 | 3.36 | 0.49 | 13.97 | 3.76 | 0.73 | 0 | 0 | 0 | 0.15 | 27.5 | 1.28 | 5.1 | 2.16 | |
| percent of average | 30 | 101 | 4 | 50 | 8 | 283 | 116 | 52 | 0 | 0 | 0 | 24 | 75 | 74 | 121 | 33 | |
| Fresno WB Airport | 0.09 | 0.28 | 0.04 | 1.23 | 0.26 | 4.19 | 0.64 | 0 | 0 | 0 | 0 | 0 | 6.73 | 0.1 | 1.67 | 0.56 | |
| percent of average | 19 | 25 | 2 | 61 | 13 | 226 | 59 | 0 | 0 | 0 | 0 | 0 | 62 | 21 | 150 | 32 | |
| Grant Grove | 0.15 | 2.77 | 0.17 | 4.17 | 0.96 | 21.25 | 4.14 | 0.58 | 0 | 0 | 0 | 0 | 34.19 | 0 | 7.2 | 1.66 | |
| percent of average | 8 | 54 | 2 | 56 | 13 | 281 | 96 | 50 | 0 | 0 | 0 | 0 | 78 | 0 | 140 | 21 | |
| Los Angeles WSO Airport | 0 | 0.1 | 0.01 | 1.4 | 0.1 | 2.07 | 0.05 | 0.06 | 0 | 0 | 0 | 0 | 3.79 | 0.58 | 2.09 | 1.45 | |
| percent of average | 0 | 7 | 0 | 52 | 3 | 110 | 5 | 43 | 0 | 0 | 0 | 0 | 30 | 153 | 148 | 69 | |
| San Diego NWS Lindbergh Field | 0 | 0.02 | 0.07 | 1.78 | 0.36 | 0.95 | 0.02 | 0.12 | 0 | 0 | 0.02 | 0 | 3.34 | 0.57 | 0.81 | 3.02 | |
| percent of average | 0 | 2 | 4 | 87 | 19 | 59 | 3 | 57 | 0 | 0 | 22 | 0 | 32 | 136 | 72 | 158 | |

¹ Water Year = October 1–September 30² NWS = National Weather Service; WB = Weather Bureau; WSO = Weather Service Office

precipitation average, Fresno received 62 percent of its annual average, and San Francisco received 61 percent of average. Sacramento, Fresno, and San Francisco all received above average precipitation for one or more months out of the 12 months of the water year.

More than 65 percent of the water year precipitation fell during November and March for Yosemite Headquarters and Grant Grove. In March, Yosemite Headquarters measured about 283 percent of average precipitation, while Grant Grove measured about 281 percent. Nevertheless, water year precipitation totals at those two sites were 75 and 78 percent of their respective annual averages.

Further south, Los Angeles and San Diego were far below average for the 2017–2018 water year, totaling 3.79 inches (30 percent of average) and 3.34 inches (32 percent of average), respectively. Both Los Angeles and San Diego received over 90 percent of their total water year precipitation over January through March.

The monthly totals for the Northern Sierra 8-Station, San Joaquin 5-Station, and Tulare Basin 6-Station precipitation indices for the water year are presented in Table 7-2. Precipitation for the three indices totaled 41.0 inches (79 percent of average), 29.7 inches (74 percent of average), and 18.1 inches (63 percent of average), respectively.

Precipitation Indices

Northern Sierra 8-Station Precipitation Index (8SI)

In the northern Sierra Nevada, precipitation is indexed by averaging rain gauge totals at eight representative stations, creating what is known as the Northern Sierra 8-Station Precipitation Index. The index provides a representative sample of the major watersheds (upper Sacramento, Feather, Yuba, and American rivers) and serves as a wetness index for the Sacramento River hydrologic region. Precipitation from this region is a primary source for the State's water supply.

The rain gauge stations are listed below:

- | | | |
|----------------------|-------------------------------|------------------|
| 1) Mount Shasta City | 4) Quincy | 7) Blue Canyon |
| 2) Shasta Dam | 5) Brush Creek | 8) Pacific House |
| 3) Mineral | 6) Sierraville Ranger Station | |

San Joaquin 5-Station Precipitation Index (5SI)

In the central Sierra Nevada, precipitation is indexed by averaging rain gauge totals at five representative stations, creating what is known as the San Joaquin 5-Station Precipitation Index. The index provides a representative sample of the major watersheds (Stanislaus, Tuolumne, Merced, and San Joaquin rivers) and serves as a wetness index for the San Joaquin River hydrologic region.

The rain gauge stations are listed below:

- | | | |
|---------------------------|------------------------------|--------------------|
| 1) Calaveras Big Trees | 3) Yosemite Headquarters | 5) Huntington Lake |
| 2) Hetch Hetchy Reservoir | 4) North Fork Ranger Station | |

Tulare Basin 6-Station Precipitation Index (6SI)

In the southern Sierra Nevada, precipitation is indexed by averaging rain gauge totals at six representative stations, creating what is known as the Tulare Basin 6-Station Precipitation Index. The index provides a representative sample of the Kings, Kaweah, Tule, and Kern river watersheds.

The rain gauge stations are listed below:

- | | | |
|----------------------|-----------------|-----------------|
| 1) Balch Power House | 3) Giant Forest | 5) Ash Mountain |
| 2) Springville | 4) Pascoes | 6) Isabella |

Table 7-2 Regional Monthly Precipitation for Water Year 2017–2018

| | Northern Sierra 8-Station Precipitation Index | | San Joaquin 5-Station Precipitation Index | | Tulare Basin 6-Station Precipitation Index | | |
|------|--|---------------------------|--|---------------------------|---|---------------------------|----------------------------------|
| | Month | Precipitation (inches) | Percent of Monthly Average | Precipitation (inches) | Percent of Monthly Average | Precipitation (inches) | Percent of Monthly Average |
| 2017 | October | 0.8 | 28 | 0.4 | 18 | 0.1 | 8 |
| | November | 11.1 | 168 | 4.3 | 94 | 1.8 | 60 |
| | December | 0.7 | 8 | 0.3 | 5 | 0.1 | 2 |
| 2018 | January | 7.0 | 79 | 4.2 | 58 | 2.5 | 47 |
| | February | 1.7 | 21 | 1.1 | 16 | 0.7 | 14 |
| | March | 12.6 | 166 | 15.3 | 250 | 9.8 | 211 |
| | April | 4.8 | 126 | 3.7 | 107 | 2.4 | 95 |
| | May | 1.8 | 82 | 0.3 | 18 | 0.2 | 18 |
| | June | 0.3 | 30 | 0.0 | 0 | 0.0 | 0 |
| | July | 0.1 | 50 | 0.0 | 0 | 0.3 | 120 |
| | August | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| | September | 0.1 | 6 | 0.1 | 15 | 0.2 | 37 |
| | Total¹ | 41.0 | 79 | 29.7 | 74 | 18.1 | 63 |

¹Totals may not sum as expected due to rounding.

The four-month period from December through March is typically the wettest period in the Sierra Nevada.

For the Northern Sierra 8-Station Precipitation Index, November and March were very wet, registering 11.1 inches (168 percent of average) and 12.6 inches (166 percent of average), respectively. This station accumulated a total of 22.0 inches from December through March, which is 54 percent of the water year total for the index and 65 percent of the December-through-March index average (33.9 inches).

The San Joaquin 5-Station Precipitation Index accumulated a total of 20.9 inches from December through March, which is 70 percent of the water year total for the index and 79 percent of the December-through-March index average (26.4 inches).

The Tulare Basin 6-Station Precipitation Index accumulated a total of 13.1 inches

from December through March, which is 72 percent of the water year total for the index and 66 percent of the December-through-March index average (19.8 inches).

Mountain Snowpack

Precipitation that fell during water year 2017–2018 consisted of both rain and snow. Snow accumulation was below normal as of April 1. Monthly statewide snowpack for the water year is shown in Table 7-3. Snow water equivalents shown in the table were obtained from daily snow sensor reports corresponding to the first day of each month. The statewide average snow water equivalent reported for April 1 was 15.0 inches or 54 percent of average. This was a dramatic change relative to 2017, which was 163 percent of average. April 1 is typically the average annual date of peak snow accumulation; however, in 2018, mountain snowpack peaked on March 27 at 16.2 inches of snow water content or 58 percent of its April 1 average.

Table 7-3 Statewide Mountain Snowpack for Water Year 2017–2018

| | Date | Snow Water Equivalent (inches) | Percent of Average | Percent of April 1 Average ¹ |
|------|-------------|--------------------------------|--------------------|---|
| 2017 | October 1 | 0.0 | 0 | 0 |
| | November 1 | 0.1 | 0 | 0 |
| | December 1 | 2.2 | 48 | 8 |
| 2018 | January 1 | 3.0 | 31 | 11 |
| | February 1 | 4.9 | 29 | 18 |
| | March 1 | 5.7 | 23 | 20 |
| | April 1 | 15.0 | 54 | 54 |
| | May 1 | 6.7 | 31 | 24 |
| | June 1 | 0.4 | 7 | 2 |
| | July 1 | 0.0 | 0 | 0 |
| | August 1 | 0.0 | 0 | 0 |
| | September 1 | 0.0 | 0 | 0 |

¹April 1 is the average date of peak statewide mountain snowpack. This table is based on snow pillow (a device for measuring mountain snowpack at automated reporting stations) data.

River Runoff

Statewide river runoff totaled 68 percent of average in the 2017–2018 water year. The monthly runoff totals for the SRR, the SJR, the TLR, and the Feather River are shown in Table 7-4. As shown, the water year runoff

totals for these areas ranged from 68 to 82 percent of average.

From a water supply perspective, the most closely monitored period is April through July. By the end of July, the April–July runoff was 80, 81, and 67 percent of average, for the SRR, SJR, and TLR regions, respectively.

Water Supply Indices

The Sacramento Valley 40-30-30 Index and the San Joaquin Valley 60-20-20 Index were both “below normal,” based on observed data for water year 2017–2018.

For more information, see the sidebar, Water Supply Indices.

Water Year 2018–2019 October through December Water Conditions

The last three months of calendar year 2018 marked the beginning of a new water year, 2018–2019. October was a drier-than-average month at 68 percent of the statewide precipitation average, followed by a wetter-than-average November at

Table 7-4 Unimpaired Runoff for Water Year 2017–2018 (million acre-feet)

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | WY |
|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| SRR runoff | 0.44 | 1.14 | 0.64 | 1.26 | 0.71 | 2.90 | 2.81 | 1.16 | 0.63 | 0.44 | 0.38 | 0.35 | 12.86 |
| percent of average | 94 | 132 | 38 | 51 | 30 | 100 | 122 | 53 | 52 | 74 | 93 | 89 | 72 |
| SJR runoff | 0.08 | 0.20 | 0.09 | 0.21 | 0.11 | 0.95 | 1.42 | 0.97 | 0.47 | 0.15 | 0.07 | 0.04 | 4.76 |
| percent of average | 119 | 155 | 40 | 48 | 24 | 150 | 170 | 70 | 44 | 35 | 60 | 70 | 82 |
| TLR runoff | 0.06 | 0.07 | 0.06 | 0.08 | 0.05 | 0.28 | 0.55 | 0.45 | 0.24 | 0.11 | 0.09 | 0.03 | 2.06 |
| percent of average | 125 | 101 | 49 | 43 | 29 | 102 | 138 | 62 | 39 | 39 | 93 | 49 | 68 |
| Feather River runoff | 0.10 | 0.26 | 0.16 | 0.34 | 0.18 | 0.88 | 0.79 | 0.27 | 0.14 | 0.10 | 0.10 | 0.07 | 3.39 |
| percent of average | 100 | 127 | 41 | 61 | 33 | 119 | 127 | 45 | 44 | 68 | 97 | 83 | 77 |
| Statewide runoff | 96 | 123 | 28 | 47 | 27 | 98 | 134 | 59 | 45 | 52 | 84 | 82 | 68 |
| percent of average | | | | | | | | | | | | | |

SRR: Sacramento River Region

Sacramento River above Bend Bridge, Feather River at Oroville, Yuba River near Smartville, American River below Folsom Lake

SJR: San Joaquin 4 Rivers

Stanislaus River below Goodwin Dam, Tuolumne River below La Grange, Merced River below Merced Falls, San Joaquin River below Millerton Lake

TLR: Tulare Lake Region

Kings River below Pine Flat Reservoir, Kaweah River below Terminus Reservoir, Tule River below Lake Success, Kern River below Lake Isabella

WY: Water Year (October 1–September 30)

114 percent of the statewide precipitation average. December was a drier-than-average month at 67 percent of the statewide precipitation average. As a result, at the end

of December, water year runoff totals were 53 percent of average for the SRR, 49 percent of average for the SJR, and 55 percent of average for the TLR.

Runoff Estimates

Unimpaired runoff represents the natural water production in a river basin, unaltered by upstream diversions, storage, or export of water to or import of water from other basins.

Sacramento River Region (SRR)

The runoff estimate for the SRR is the sum of unimpaired flow in million acre-feet (maf) at the following gauging stations:

- | | |
|---|-------------------------------------|
| 1) Sacramento River above Bend Bridge | 3) Yuba River near Smartville |
| 2) Feather River at Oroville (inflow to Lake Oroville) | 4) American River below Folsom Lake |

San Joaquin 4 Rivers (SJR)

The runoff estimate for the SJR is the sum of unimpaired flow in maf at the following gauging stations:

- | | |
|--|---|
| 1) Stanislaus River below Goodwin Dam (inflow to New Melones Reservoir) | 3) Merced River below Merced Falls (inflow to Lake McClure) |
| 2) Tuolumne River below La Grange (inflow to New Don Pedro Reservoir) | 4) San Joaquin River below Millerton Lake (inflow to Millerton Lake) |

Tulare Lake Region (TLR)

The runoff estimate for the TLR is the sum of unimpaired flow in maf at the following gauging stations:

- | | |
|--|-----------------------------------|
| 1) Kings River below Pine Flat Reservoir | 3) Tule River below Lake Success |
| 2) Kaweah River below Terminus Reservoir | 4) Kern River below Lake Isabella |

Eight River Index

The Eight River Index is the sum of the unimpaired runoff from the eight rivers in the SRR and the SJR.

Water Supply Indices

Sacramento Valley 40-30-30 Index

State Water Resources Control Board, Water Right Decision 1641 (D-1641) defines the Sacramento Valley Water Year Hydrologic Classification (Sacramento Valley 40-30-30 Index), a water supply forecasting tool used to derive the water year type for the Sacramento Valley. The State Water Resources Control Board first introduced the Sacramento Valley 40-30-30 Index in the 1991 *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan), and continued using it with the 1995 and 2006 Bay-Delta Plans. D-1641 implements portions of the 2006 Bay-Delta Plan with respect to the operation of the State Water Project and the Central Valley Project.

The Sacramento Valley 40-30-30 Index is used to determine the Sacramento Valley water year type for the purpose of implementing water quality objectives defined in D-1641. It also provides an estimate of the potential water supply originating in the basin from rainfall and snowmelt runoff, groundwater accretion, and reservoir carryover storage. The index incorporates seasonal differences in water contribution for the year and includes the prior year's conditions in order to establish a more reliable index of water availability. The 40-30-30 factors represent the percentage weight given to the following:

- (1) 40%—the current year's April through July Sacramento Valley unimpaired runoff
- (2) 30%—the current year's October through March Sacramento Valley unimpaired runoff
- (3) 30%—the previous year's index with a cap of 10 million acre-feet
(to account for required flood control reservoir releases during wet years)

The water year type is determined by the index value on a scale specific to the Sacramento Valley (as defined in D-1641).

| Classification | Index (million acre-feet) |
|----------------|--|
| Wet | Equal to or greater than 9.2 |
| Above Normal | Greater than 7.8 and less than 9.2 |
| Below Normal | Equal to or less than 7.8 and greater than 6.5 |
| Dry | Equal to or less than 6.5 and greater than 5.4 |
| Critical | Equal to or less than 5.4 |

Water year type forecasts are made beginning in December. The Sacramento Valley 40-30-30 Index May 1 forecast (at the 50 percent exceedance level) determines the "official" water year type for implementing water quality and flow requirements contained in D-1641. The D-1641 objectives are conditioned by water year type and generally become less stringent during dryer years.

Water Supply Indices (*continued*)

San Joaquin Valley 60-20-20 Index

D-1641 uses a similar method in the San Joaquin Valley Water Year Hydrologic Classification (San Joaquin Valley 60-20-20 Index) to determine the water year type for the San Joaquin Valley. The 60-20-20 factors represent the percentage weight given to the following:

- (1) 60%—the current year's April through July San Joaquin Valley unimpaired runoff
- (2) 20%—the current year's October through March San Joaquin Valley unimpaired runoff
- (3) 20%—the previous year's index with a cap of 4 million acre-feet
(to account for required flood control reservoir releases during wet years)

The water year type is determined by the index value on a scale specific to the San Joaquin Valley (as defined in D-1641).

| Classification | Index (million acre-feet) |
|----------------|--|
| Wet | Equal to or greater than 3.8 |
| Above Normal | Greater than 3.1 and less than 3.8 |
| Below Normal | Equal to or less than 3.1 and greater than 2.5 |
| Dry | Equal to or less than 2.5 and greater than 2.1 |
| Critical | Equal to or less than 2.1 |

The San Joaquin Valley 60-20-20 Index May 1 forecast (at the 75 percent exceedance level) determines the “official” water year type for implementing D-1641 San Joaquin River Vernalis flow standards.

Storage

Statewide Storage

Monthly storage totals for the major Sierra Nevada reservoirs are shown in Table 7-5. Water year 2017–2018 began at 107 percent of average reservoir storage. Storage increased to 116 percent of average in November and subsequently remained in the range of 99 to 111 percent for the remainder of the water year. In September, the 2018 water year ended at 99 percent of average.

State Water Project Storage

The State Water Project (SWP) operates a complex system of dams, canals, and reservoirs to collect and store water for future deliveries. Lake Oroville is the first of two primary SWP conservation facilities. Lake Oroville inflow comes from tributaries of the Feather River.

San Luis Reservoir is the second primary SWP conservation facility. This Central California joint-use facility derives its inflow from pumping at the Gianelli Pumping-Generating Plant. San Luis is an off-stream storage reservoir. Most of the water is pumped into the reservoir from late

Table 7-5 Monthly Reservoir Storage for Water Year 2017–2018 (thousand acre-feet)

| Reservoir | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|-----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Shasta percent of average | 3,177 120 | 3,221 121 | 3,203 115 | 3,349 110 | 3,414 104 | 3,880 106 | 4,195 108 | 3,955 103 | 3,642 102 | 3,147 100 | 2,691 96 | 2,405 91 |
| Oroville percent of average | 1,218 58 | 1,268 61 | 1,231 57 | 1,408 61 | 1,460 60 | 2,093 78 | 2,433 85 | 2,410 82 | 2,253 79 | 1,944 77 | 1,597 70 | 1,365 64 |
| Folsom percent of average | 557 113 | 615 133 | 545 116 | 582 116 | 526 98 | 817 129 | 866 119 | 955 119 | 841 108 | 631 95 | 506 85 | 467 86 |
| San Luis percent of average | 1,502 143 | 1,522 127 | 1,638 120 | 1,736 110 | 1,538 91 | 1,774 98 | 1,756 99 | 1,528 97 | 1,206 96 | 906 94 | 971 116 | 1,115 120 |
| Pardee percent of average | 188 108 | 201 115 | 193 109 | 182 102 | 186 103 | 202 110 | 205 111 | 203 107 | 197 102 | 201 106 | 199 108 | 197 109 |
| New Melones percent of average | 2,000 151 | 1,998 149 | 1,981 144 | 1,981 140 | 1,920 132 | 2,019 135 | 2,062 139 | 1,960 132 | 1,908 128 | 1,871 131 | 1,825 135 | 1,785 137 |
| Don Pedro percent of average | 1,599 123 | 1,623 124 | 1,643 123 | 1,666 121 | 1,668 117 | 1,784 122 | 1,878 128 | 1,902 124 | 1,845 117 | 1,708 113 | 1,590 114 | 1,506 113 |
| Millerton percent of average | 314 154 | 339 150 | 355 129 | 372 112 | 329 98 | 406 112 | 451 126 | 464 117 | 450 110 | 347 105 | 279 114 | 280 127 |
| Pine Flat percent of average | 470 136 | 476 129 | 493 121 | 518 111 | 525 100 | 660 117 | 875 145 | 882 124 | 697 103 | 430 87 | 276 75 | 222 67 |
| Kaweah percent of average | 18 155 | 22 163 | 14 83 | 24 109 | 30 117 | 75 174 | 160 204 | 175 144 | 101 95 | 23 45 | 15 74 | 11 85 |
| Success percent of average | 7 82 | 9 96 | 11 82 | 14 79 | 16 68 | 37 112 | 51 120 | 55 107 | 52 111 | 14 43 | 8 44 | 7 57 |
| Isabella percent of average | 170 102 | 167 105 | 165 102 | 166 94 | 172 93 | 196 97 | 251 108 | 257 87 | 211 67 | 148 55 | 94 44 | 71 39 |
| Statewide percent of average | 107 | 116 | 109 | 106 | 100 | 107 | 111 | 106 | 102 | 99 | 100 | 99 |

fall to early spring. This water is temporarily stored, then released into the California Aqueduct to meet SWP water contractor peaking demands in the summer months. The remaining SWP dams and reservoirs regulate the stored water supply with delivery patterns that are designed to fit local water demands.

2018 Storage Totals in Major SWP Reservoirs

End-of-year storage on December 31, 2018, in major SWP reservoirs and the State's share of joint-use reservoirs was 2.5 million acre-feet (maf) or 47.36 percent of maximum storage, compared to 2.5 maf or 47.63 percent of maximum storage at the end of 2017. The average end-of-month total storage in major SWP reservoirs for 2018 was 3.0 maf.

Lake Oroville

Lake Oroville has a maximum water storage capacity of 3,537,577 acre-feet (af). Runoff from the upper Feather River drainage is collected and stored in this reservoir and released to the Sacramento-San Joaquin Delta (Delta) through Oroville Dam, Thermalito Diversion Dam, and Thermalito Afterbay.

2018 Inflow. Total Lake Oroville inflow for 2018 was 2.8 maf, which was 71 percent of the average (3.89 maf) over the last 30 years. Maximum daily inflow occurred on March 22 at 126,619 af. Minimum daily inflow occurred on October 3 at 235 af. Peak monthly total inflow occurred in March at 722,921 af, 26 percent of the 2018 total. The highest total inflow in the last 30 years (1988–2018) was in 2017 at 9,009,424 af. The lowest total inflow for the same period was in 2015 at 1,295,451 af.

Figure 7-2 shows monthly Lake Oroville inflow for 2016, 2017, and 2018.

Figure 7-3 shows historical maximum and minimum cumulative Lake Oroville inflow and the current cumulative inflow for 2018.

2018 Storage. Minimum storage occurred on December 15 at 997,135 af, 28 percent of lake capacity. Maximum storage occurred on May 9 at 2,475,721 af, 70 percent of lake capacity. End-of-year Lake Oroville storage was 1,031,727 af.

Figure 7-4 shows storage in Lake Oroville for 2017 and 2018.

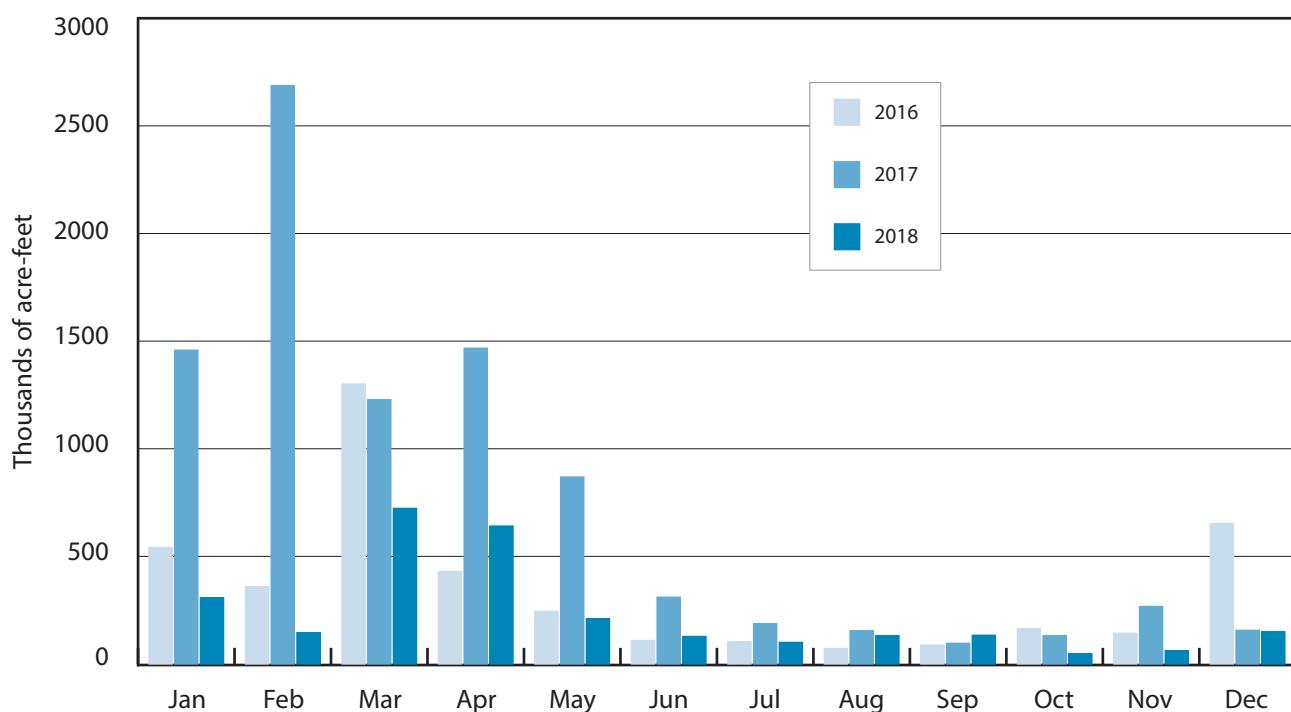


Figure 7-2 Monthly Inflow into Lake Oroville from the Feather River, 2016–2018

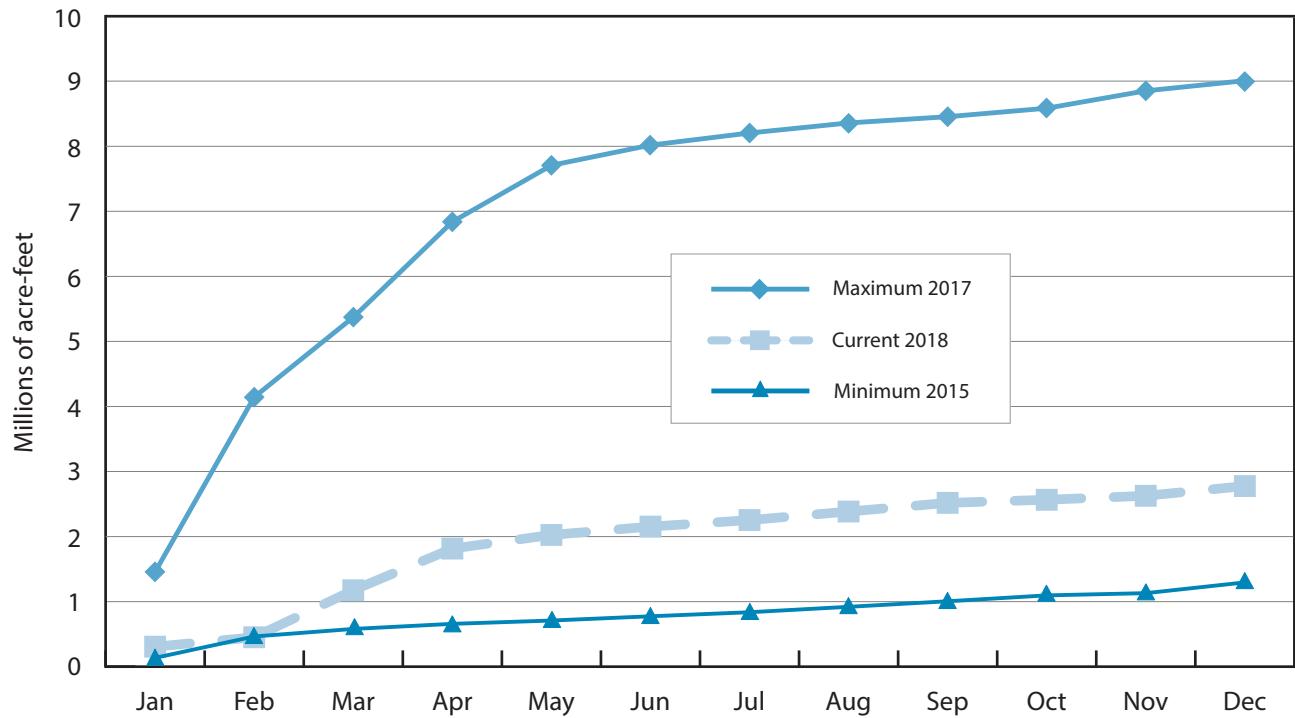


Figure 7-3 Lake Oroville Cumulative Inflow over the Last 30 Years—
Current and Historical Maximum and Minimum

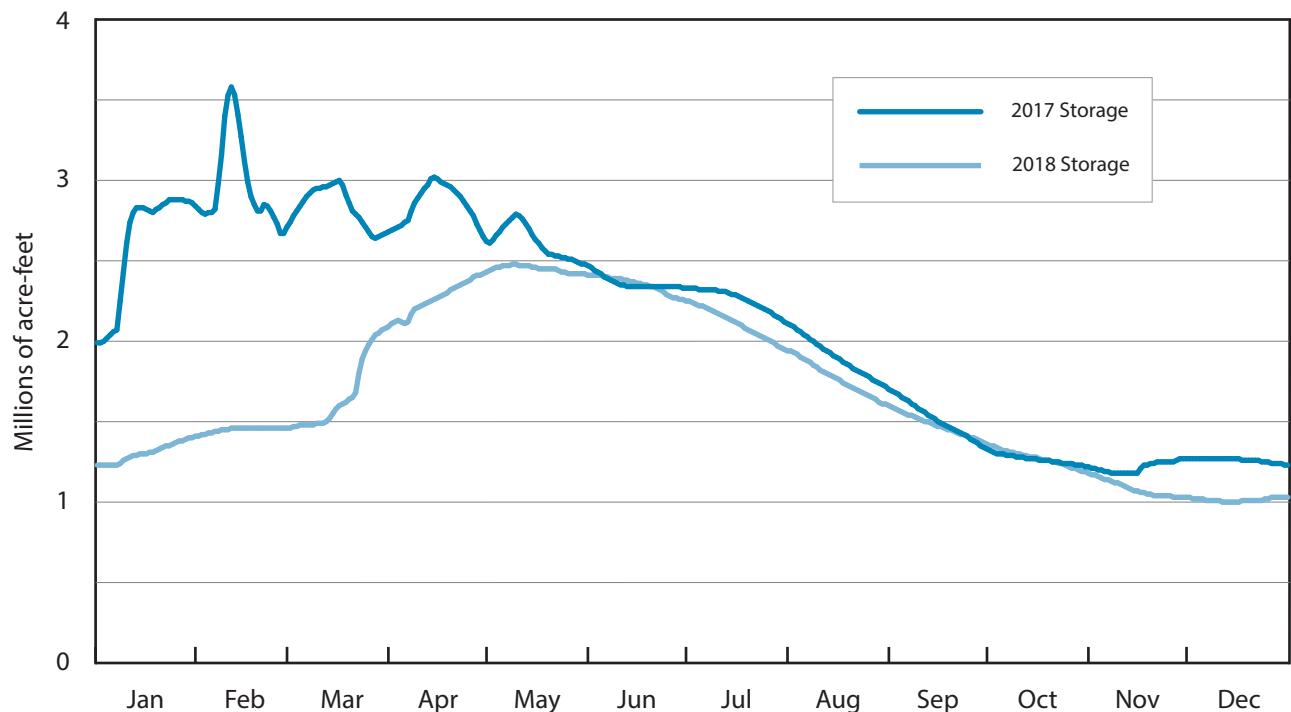


Figure 7-4 Daily Storage in Lake Oroville, 2017 and 2018

2018 San Luis Reservoir Operations

San Luis Reservoir is operated jointly by DWR and the Bureau of Reclamation pursuant to operating procedures adopted in June 1981. San Luis Reservoir has a normal operating capacity of 2,027,835 af. The SWP share of this capacity is 1,062,180 af.

San Luis Reservoir reached its maximum storage on April 11 at 1,842,712 af, 91 percent of its normal maximum operating capacity. At the beginning of 2018, San Luis Reservoir contained 1,638,022 af, 81 percent of its capacity. The SWP storage share was 728,815 af. The highest end-of-month SWP share of water storage occurred in March at 898,322 af.

Figure 7-5 shows the SWP share of storage and total storage in San Luis Reservoir for 2017 and 2018.

2018 Lake Del Valle Operations

Lake Del Valle, located off the South Bay Aqueduct, functions primarily as a storage facility for water delivery to Santa Clara and Alameda counties. At the beginning of 2018, Lake Del Valle held 25,417 af, which was about 33 percent of its maximum capacity of 77,111 af. Its highest storage occurred on May 26 at 40,006 af. Its lowest storage occurred on December 15 at 24,966 af.

On December 31, storage in Lake Del Valle was 24,985 af, 32 percent of its maximum capacity. There was 4,097 af of natural inflow into Lake Del Valle, and 16,215 af of inflow from the South Bay Aqueduct. There were no releases to Arroyo Valle, and releases for 2018 to the South Bay Aqueduct from Lake Del Valle totaled 17,662 af.

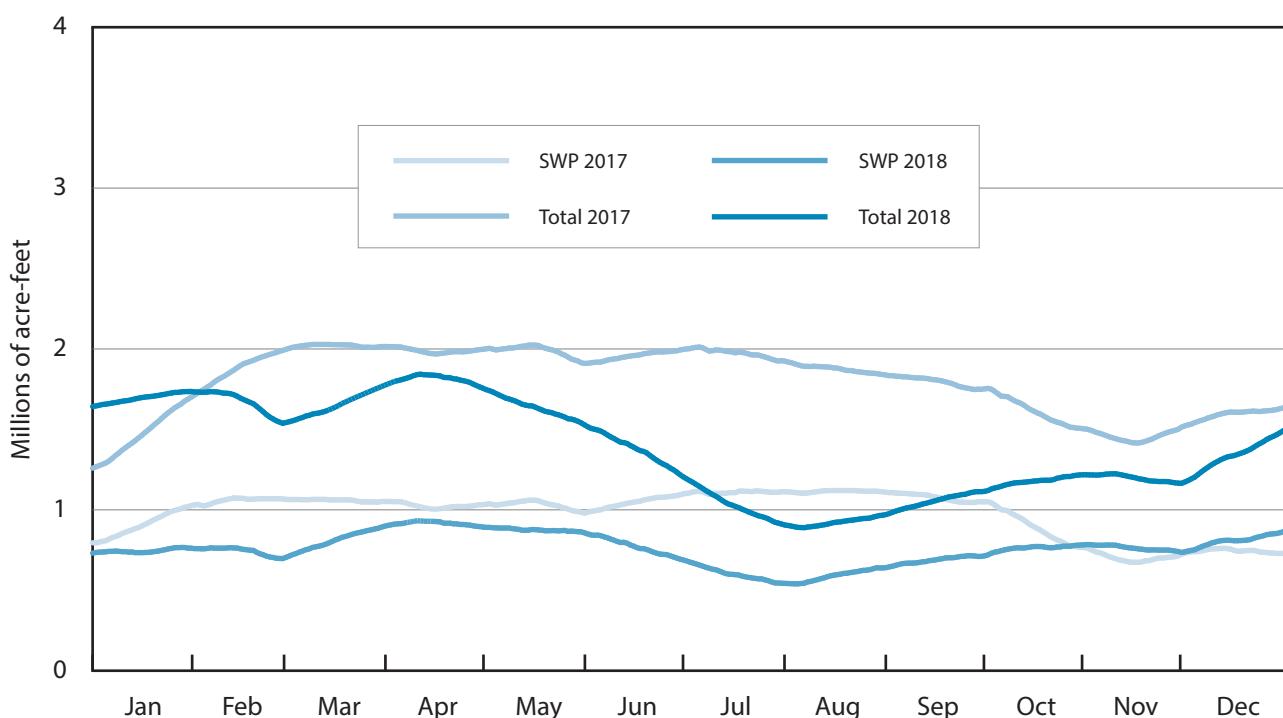


Figure 7-5 SWP Share of Storage and Total Storage in San Luis Reservoir, 2017 and 2018

2018 Southern Reservoir Operations

During normal operating conditions, DWR maintains its four southern reservoirs—Pyramid, Castaic, Silverwood, and Perris—at or near full operating capacity to ensure uninterrupted delivery of water to Southern California SWP water contractors.

At the beginning of 2018, these reservoirs held 551,871 af, which is 80 percent of their combined normal maximum operating capacity of 689,021 af. At the end of 2018, the reservoirs held 597,685 af, 87 percent of combined normal maximum operating capacity.

Diversions from the Delta

The SWP diverts water from the Delta, through the Barker Slough and Banks pumping plants, for delivery to SWP water contractors' storage facilities. The SWP

diverts water from Barker Slough Pumping Plant to the North Bay Aqueduct. Water is delivered from Banks Pumping Plant to the South Bay Area through the South Bay Aqueduct, and to the San Joaquin Valley, Central Coastal, and Southern California areas through the California Aqueduct. The Central Valley Project (CVP) diverts water to similar areas from the Delta through Jones Pumping Plant and Contra Costa Pumping Plant.

In 2018, the North Bay Aqueduct received 50,084 af of water from the Barker Slough Pumping Plant.

Figure 7-6 shows the amounts of water pumped each month for 2018 at Banks Pumping Plant, totaling 2,062,595 af. Of this amount, the SWP diverted 1,990,816 af. There was 38,657 af of water pumped for the Cross Valley Canal, and 33,122 af was wheeled for the CVP.

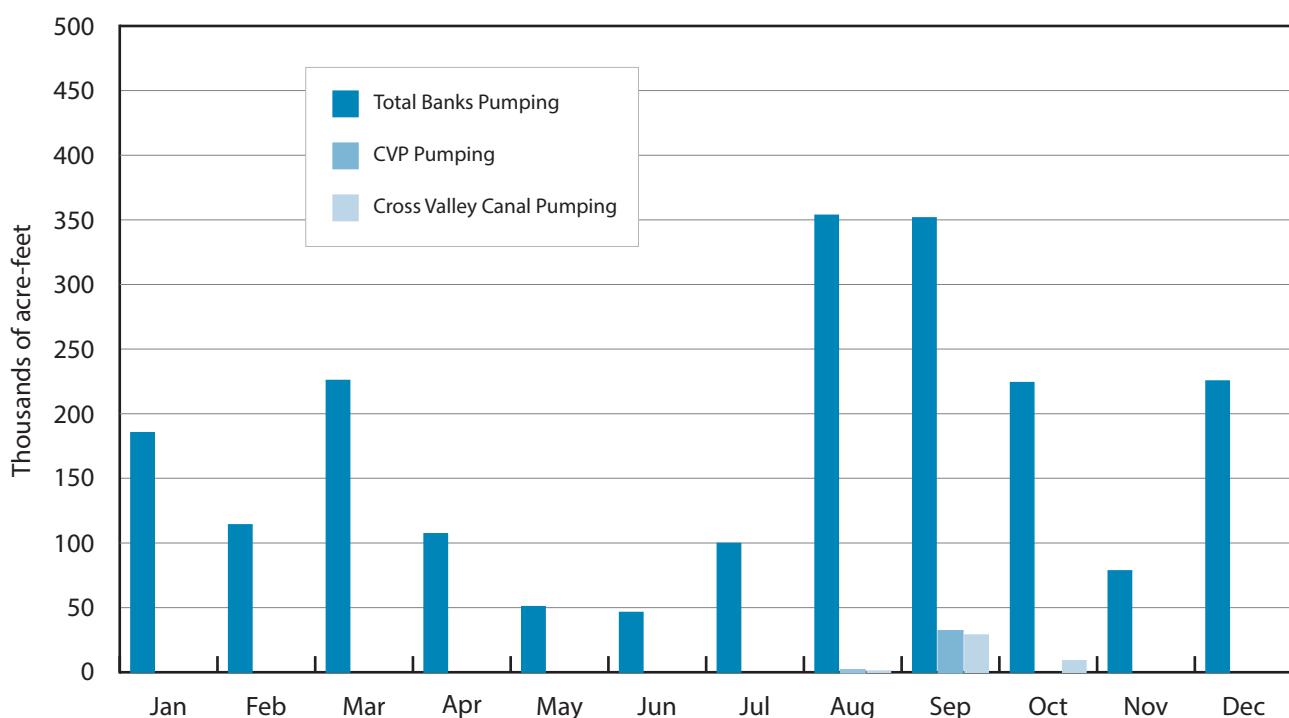


Figure 7-6 Water Pumped at Banks Pumping Plant, 2018

The CVP diverted 2,230,920 af at Jones Pumping Plant and 109,939 af at Contra Costa Pumping Plant in 2018.

The combined Delta exports include all of these plants. Figure 7-7 shows the monthly amounts of water diverted from the Delta in 2018 by the SWP and CVP. Maximum daily Delta exports occurred on August 8 at 22,515 af. Combined SWP and CVP monthly Delta exports in 2018 varied from a low of 165,989 af in May, to a high of 626,053 af in August. Delta exports totaled approximately 4.4 maf in 2018.

Figure 7-8 shows monthly total amounts pumped at Dos Amigos Pumping Plant for 2018. Dos Amigos Pumping Plant diverts water from O'Neill Forebay to the California Aqueduct. Dos Amigos pumped the largest amount in July at 398,307 af.

Figure 7-9 shows the amount of water pumped each month in 2018 at Edmonston Pumping Plant. Water pumped through the Edmonston Pumping Plant for delivery to Southern California totaled 1,116,573 af.

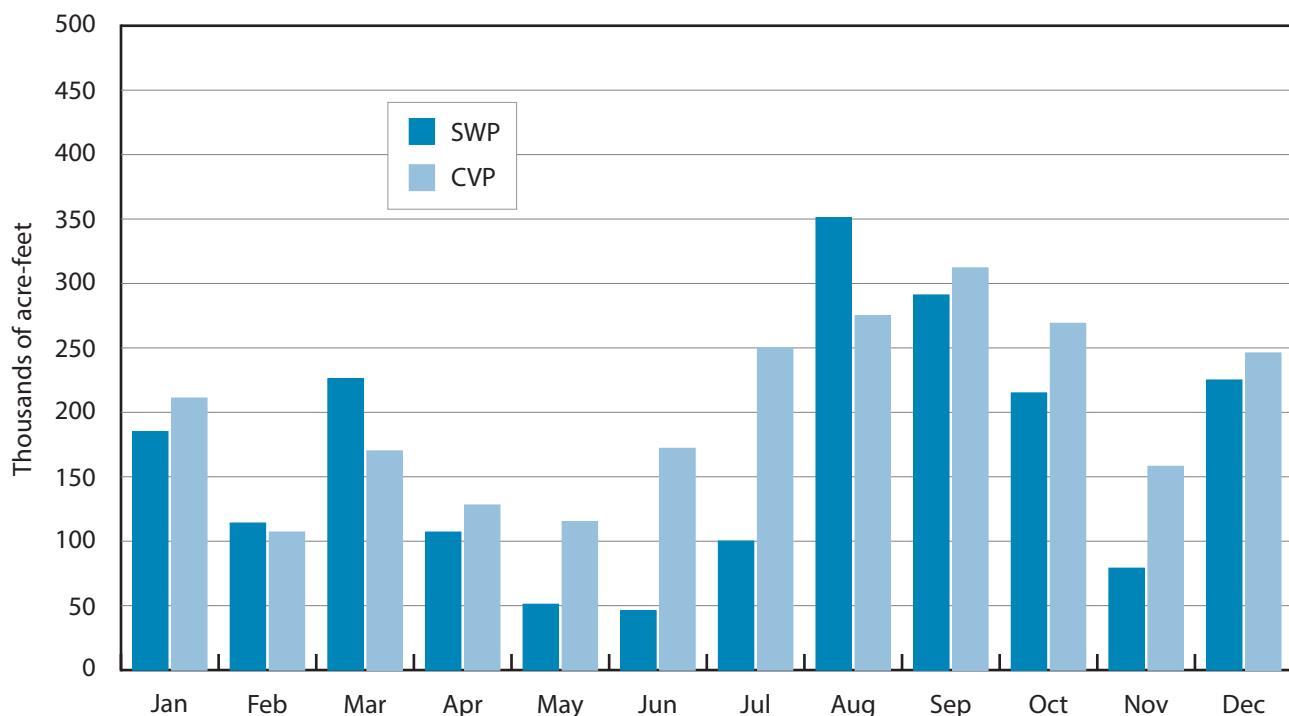


Figure 7-7 Sacramento-San Joaquin Delta Exports by State Water Project and Central Valley Project, 2018

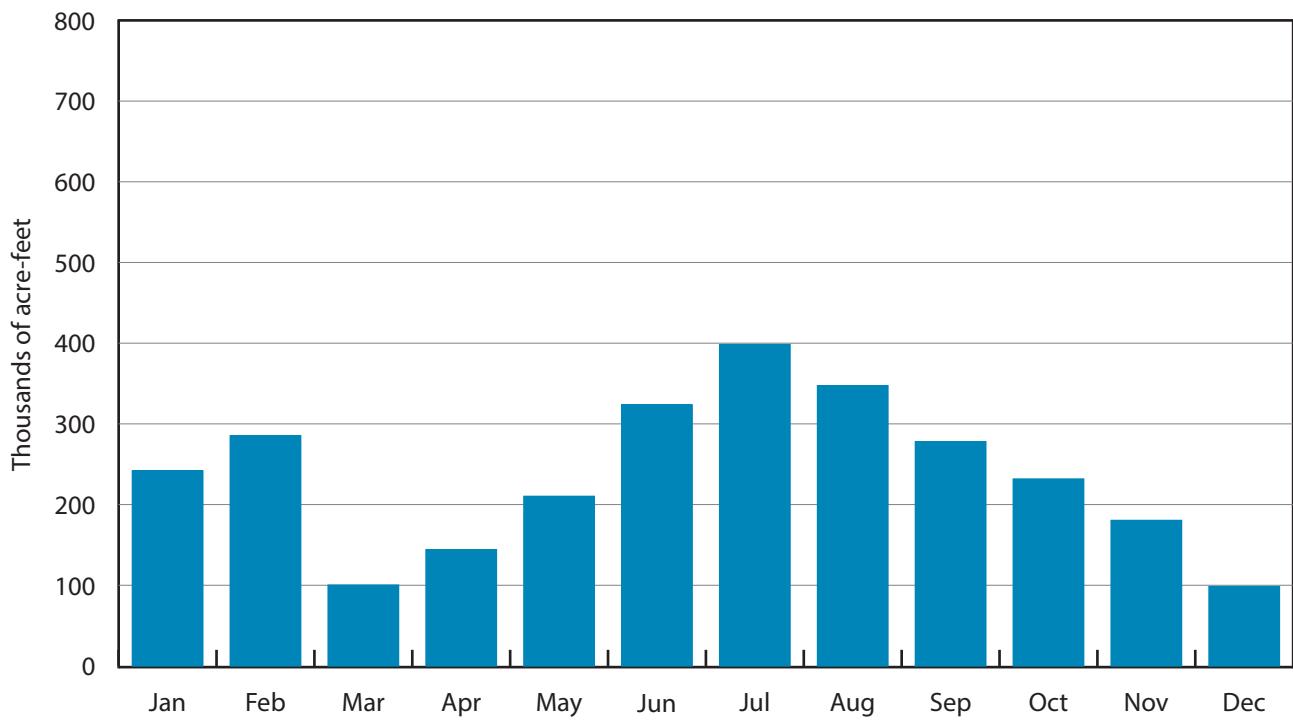


Figure 7-8 Water Pumped at Dos Amigos Pumping Plant, 2018

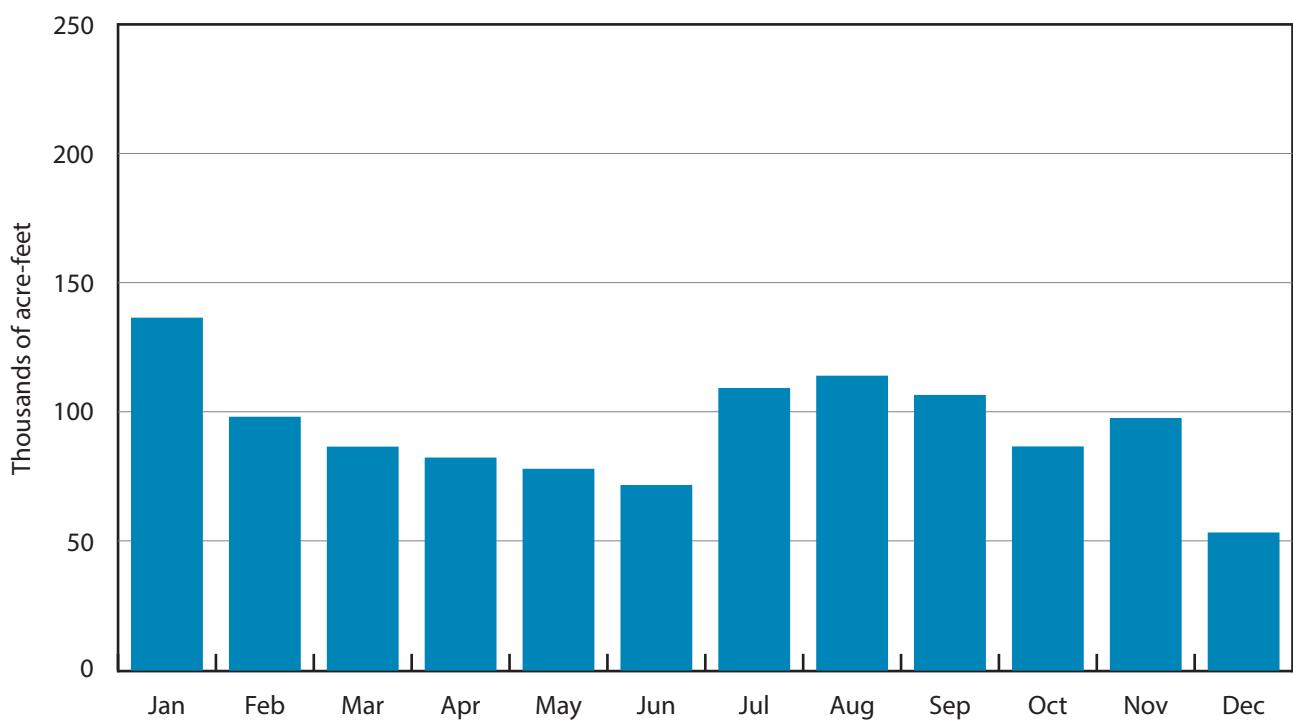


Figure 7-9 Water Pumped at Edmonston Pumping Plant, 2018



Chapter 8

Water Contracts and Deliveries

An aerial view of the Thermalito Diversion Pool, Lake Oroville, and the spillways construction site during Phase 2 of the Lake Oroville spillway recovery effort.

Significant Events in 2018

A total of 3,166,275 acre-feet (af) of State Water Project (SWP) and non-SWP water was delivered to 29 SWP Contractors and 26 other agencies. The portion delivered to SWP Contractors was 1,990,286 af; the portion delivered to non-SWP Contractors was 1,175,989 af.

The hydrologic conditions in the Sacramento and San Joaquin river watersheds were both classified as "Below Normal." As a result, the Department of Water Resources (DWR) approved 35 percent of the SWP Contractors' Table A allocation requests.

Four SWP Contractors recovered approximately 113,657 af of water from water banks in 2018.

Information for this chapter was provided by the State Water Project Analysis Office.

State Water Project (SWP) water supply contracts between the Department of Water Resources (DWR) and 29 public agencies and local water districts provide for water service from the SWP and are the basis for the SWP's construction and ongoing operations. The State provides SWP financing, capital construction, improvements, and all operations and maintenance of SWP facilities, and the agencies and local districts have contractually agreed to repay all associated costs.

SWP Water Supply Contracts

SWP Water Supply Contracts set forth the maximum amount of water an SWP Contractor may request each year from the SWP, and these water amounts are written within the contracts in a list format known as Table A. "Table A" or "Table A water" represents a portion or all of the annual Table A amount requested by SWP Contractors and approved for delivery by DWR based on hydrologic conditions, current reservoir storage, and combined requests from the SWP Contractors. Under certain water year conditions, DWR is not able to deliver the quantity of water requested by SWP Contractors. In those years, a proportional amount is allocated and delivered according to the SWP Water Supply Contracts by prorating the amount in proportion to each SWP Contractor's annual Table A amount. Table A amounts may also be used as a factor to allocate other available water supplies to each contractor. Approved Table A amounts may also be referred to in this chapter as "approved amounts," "approved water," or "allocated water."

SWP water provided under the SWP Water Supply Contracts include current year Table A amounts, transfer and exchange of Table A water, carryover water, Turn-Back Pools A and B water, Multiyear Water Pool Program water, and Article 21 water.

DWR enters into agreements with SWP Contractors and non-SWP Contractors; these agreements may be amended periodically, to convey SWP and non-SWP water through

the California Aqueduct. Using SWP facilities, DWR conveys non-SWP water for various agencies according to the terms of water rights and water transfer and exchange agreements. DWR also enters into agreements to approve construction, operation, and maintenance of SWP facilities, including turnouts and turn-ins.

The State Water Project Analysis Office (SWPAO) uses a numbering system for contracts, amendments, and agreements executed by DWR. These numbers, referred to as SWPAO numbers, are designated in Chapter 8 text as "SWPAO #XXXXX" and are located in parentheses in descending order, after each contract, amendment, or agreement description. These numbers can be used as identifiers to contact DWR staff for more detailed information on a particular document.

Contract Extension Negotiations

In May 2013, DWR and the SWP Contractors began negotiations in a public forum to develop contract amendments to extend the term and change certain financial provisions of the SWP Water Supply Contracts. In June 2014, the negotiators for DWR and the SWP Contractors reached a general agreement on principles for such an amendment (the "Agreement in Principle").

Currently, the SWP Water Supply Contracts remain in effect for whichever period is longest: (1) the project repayment period, which extends to December 31, 2035; (2) 75 years from the effective date of the

contract; or (3) until all bonds issued to finance construction costs of SWP facilities are repaid. Each SWP Contractor may elect to receive continued service under its SWP Water Supply Contract contingent upon

certain specified terms and conditions and other reasonable and equitable terms mutually agreed upon by DWR and the SWP Contractors.

SWP Water Supply Contracts

The first State Water Project (SWP) Water Supply Contract was signed with The Metropolitan Water District of Southern California (Metropolitan) on November 4, 1960. The contract was negotiated by the Department of Water Resources (DWR) and Metropolitan according to terms of the contracting principles for water service contracts announced by the Governor on January 20, 1960.

The Metropolitan contract became the prototype for all SWP Water Supply Contracts; by the end of 1967, 31 agencies had contracted for water. In addition, an SWP Water Supply Contract was executed with the City of West Covina in December 1963, but it was terminated in August 1965, and the city's Table A amount was transferred to Metropolitan through an amendment to its SWP Water Supply Contract with DWR. SWP Water Supply Contracts with Hacienda Water District and Devil's Den Water District were also terminated when those districts transferred their Table A amounts, through contract amendments, to Tulare Lake Basin Water Storage District (1981) and Castaic Lake Water Agency (1992), respectively. Senate Bill 634 (Wilk; Chapter 833, Statutes of 2017) created the Santa Clarita Valley Water Agency by reorganizing the Newhall County Water District and the Castaic Lake Water Agency into the Santa Clarita Valley Water Agency on January 1, 2018. Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018. Today DWR has contracts with 29 SWP contracting agencies. Those contracts have been amended periodically, and as needed, to incorporate mutually agreed upon modifications.

All SWP Water Supply Contracts signed in the 1960s included an estimated date for initial water deliveries and a schedule of the water delivery amount the SWP Contractor could expect annually (annual Table A amounts). That amount was designed to increase gradually until the maximum amount of annual Table A was reached. The total combined maximum annual Table A amount for all SWP Water Supply Contracting agencies was initially 4,230,000 acre-feet (af), assuming full development of the SWP.

The contracts were executed for 75 years or until all bonds sold as part of the California Water Resources Development Bond Act were repaid, whichever period was longer. As a result of amendments to contracts in the 1990s, the current combined maximum annual Table A amount totals 4,172,786 af, and the contracts are in effect for the longest of the following periods: (1) the project repayment period, which extends to December 31, 2035; (2) 75 years from the date of the contract; or (3) the period ending with the latest maturity date of any bond used to finance the construction costs of project facilities.

The 75-year SWP Water Supply Contract term results in the contracts having varying termination dates that range between December 31, 2035, and December 31, 2042. Under the Agreement in Principle, each SWP Contractor that signs an amendment would extend its contract term to December 31, 2085.

Also under the Agreement in Principle, payment provisions for capital costs and certain other costs will be amended from an amortized basis to an annual “pay as you go” basis. The “pay as you go” provisions will provide revenues needed by DWR to operate the SWP in a fiscally sound manner. The SWP Water Supply Contracts’ current provisions authorizing DWR to charge the SWP Contractors annually for the full amount of required annual debt service and coverage on the bonds will continue in any extended SWP Water Supply Contract.

The Agreement in Principle also provides for, among other things, the following:

- an increase in DWR’s operating reserves—a mechanism for financing capital projects with interest from the SWP Contractors
- the establishment of accounts to fund certain State Water Resources Development System expenses not chargeable to the SWP Contractors
- the establishment of a finance committee consisting of DWR and SWP Contractor representatives to serve as a forum for discussions and to provide a channel for recommendations concerning SWP financial policies

Before any SWP Water Supply Contract amendment is adopted, DWR must accomplish the following as part of the contract amendment process: (1) complete an environmental review pursuant to the California Environmental Quality Act; and (2) deliver a presentation in an informational hearing to the California Legislature. In

2018, DWR certified the final environmental impact report on November 13, 2018, and approved the proposed project on December 11, 2018. Informational hearings were held with the Senate Natural Resources and Water Committee and the Joint Legislative Budget Committee on July 3, 2018 and September 11, 2018, respectively.

Amendments to SWP Water Supply Contracts

All of the original SWP Water Supply Contracts signed by DWR and the 29 SWP Contractors have been amended to incorporate mutually desired changes. Most amendments fall under the following general categories:

- permanent transfers of Table A amounts from one SWP Contractor to another
- allocation of costs and benefits for the addition or enlargement of SWP facilities
- purchase of excess capacity in the California Aqueduct
- provisions to implement Monterey Agreement principles

2018 Amendments to SWP Water Supply Contracts

There was one amendment to the SWP Water Supply Contracts in 2018.

Castaic Lake/Santa Clarita Valley Water Agency

DWR executed Amendment No. 20 to the Water Supply Contract between Castaic Lake and DWR on November 2, 2018. On October 15, 2017, the Governor of California approved Senate Bill 634, (Wilk; Chapter 833, Statutes of 2017), the Santa Clarita Valley Water Agency Act, which reorganized Castaic Lake and Newhall County Water District into the Santa Clarita Valley Water Agency (Santa Clarita). Amendment No. 20 approved the transfer of Castaic Lake’s Water Supply Contract to Santa Clarita as successor

to Castaic Lake's Water Supply Contract with DWR. (SWPAO #18006)

Monterey Amendments

The primary elements of the Monterey Amendments included changes in water allocation procedures where shortages and surpluses would be shared among contractors in proportion to their Table A amounts, transfers of Table A amounts from agricultural contractors to municipal and industrial contractors, the transfer of ownership of approximately 20,000 acres of land known as the Kern Fan Element in exchange for the retirement of 45,000 acre-feet (af) of agricultural contractor Table A amounts, financial restructuring, and additional and preapproval of water supply management practices. The Monterey Amendments are discussed in detail in Bulletin 132-95, Chapter 1, Summary of Significant Events.

In 2018, DWR continued to operate the SWP according to the SWP Water Supply Contracts, the Monterey Amendments, and the May 5, 2003, settlement agreement for the *Planning and Conservation League v. DWR* (1995) lawsuit.

See Bulletin 132-18 for more information on the settlement agreement.

Miscellaneous Agreements with SWP Contractors

2018 Water Conveyance and Exchange Agreements

Water conveyance and exchange agreements that were executed or pending execution with SWP Contractors during 2018 are described below.

Antelope Valley-East Kern Water (AVEK)/Littlerock

A letter agreement among DWR, AVEK, and Littlerock, dated December 12, 2018, and

executed December 14, 2018, approved the delivery of up to 805 af of Littlerock's 2018 Table A water to AVEK through December 31, 2018. In exchange, AVEK will return an equal amount, up to 805 af, of its future Table A water to Littlerock by December 31, 2028. During 2018, a total of 805 af of Littlerock's Table A water was delivered to AVEK under this agreement. (SWPAO #18034)

Kern

A letter agreement between DWR and Kern, dated December 13, 2018, and executed December 26, 2018, approved the conveyance of up to 6,000 af of 2018 Central Valley Project (CVP) water (non-SWP water) to Kern through February 28, 2019. Wheeler Ridge-Maricopa Water Storage District, a member unit of Kern, acquired this non-SWP water from three CVP Friant Division districts (Orange Cove Irrigation District, Lindsay-Strathmore Irrigation District, and Tulare Irrigation District). The U.S. Bureau of Reclamation (Reclamation) made this non-SWP water available to DWR at O'Neill Forebay. DWR conveyed the non-SWP water to Kern under Article 55 of Kern's Water Supply Contract with DWR. During 2018, a total of 2,274 af of non-SWP water was conveyed to Kern under this agreement. (SWPAO #18033)

AVEK/Palmdale

A letter agreement among DWR, AVEK, and Palmdale, dated November 16, 2018, and executed November 19, 2018, approved the delivery of up to 5,000 af of Palmdale's 2018 Table A water to AVEK through December 31, 2018. In exchange, AVEK will return an equal amount, up to 5,000 af, of its future Table A water to Palmdale through December 31, 2028. During 2018, a total of 5,000 af of Palmdale's Table A water was delivered to AVEK under this agreement. (SWPAO #18032)

AVEK/Kern

A letter agreement among DWR, AVEK, and Kern, dated September 14, 2018, and executed October 4, 2018, approved the transfer of up to 16,000 af of AVEK's 2018 Table A water to Kern, on behalf of V Lions Operations, LP, which farms in both AVEK and Kern service areas. During 2018, no water was moved under this agreement. (SWPAO #18028)

Kern/Westlands

An agreement among DWR, Kern, and Westlands, executed November 26, 2018, approved the delivery of up to 15,000 af of Westlands' CVP water (non-SWP water) to Kern through February 28, 2019. This non-SWP water was delivered to Kern for storage in the Semitropic Water Storage District's Groundwater Banking Program. The stored water will be returned to Westlands by December 31, 2028. Reclamation made this non-SWP water available to DWR at O'Neill Forebay. DWR conveyed the non-SWP water to Kern under Article 55 of Kern's Water Supply Contract with DWR. In 2018, a total of 500 af of non-SWP water was delivered to Kern under this agreement. (SWPAO #18027)

Kern/Napa

A letter agreement among DWR, Kern, and Napa, dated August 30, 2018, and executed October 17, 2018, approved the delivery of up to 6,400 af of Napa's 2018 Table A water to Kern through December 31, 2018. In exchange, Kern will return up to 2,133 af, based on an unbalanced exchange ratio of 3:1, of its future Table A water to Napa through December 31, 2028. During 2018, a total of 6,400 af of Napa's Table A water was delivered to Kern under this agreement. (SWPAO #18026)

AVEK/Kern

A letter agreement among DWR, AVEK, and Kern, dated August 14, 2018, and executed September 10, 2018, approved the transfer

of up to 15,000 af of AVEK's 2018 Table A water to Kern through December 31, 2018, on behalf of landowner Homer, LLC, which farms in both AVEK and Kern service areas. During 2018, a total of 15,000 af of AVEK's Table A water was delivered to Kern under this agreement. (SWPAO #18025)

Tulare

A letter agreement between DWR and Tulare, dated August 17, 2018, and executed August 20, 2018, approved the conveyance of up to 5,300 af of CVP water (non-SWP water) to Tulare. This non-SWP water was acquired by Angiola Water District, a member unit of Tulare, from Fresno Slough Water District (up to 4,000 af) and Mercy Springs Water District (up to 1,300 af). Reclamation made the non-SWP water available to DWR at O'Neill Forebay. DWR conveyed this non-SWP water to Tulare under Article 55 of Tulare's Water Supply Contract with DWR. This agreement is effective through February 28, 2019. During 2018, a total of 2,650 af of non-SWP water was conveyed to Tulare under this agreement. (SWPAO #18024)

Dudley Ridge/Empire

A letter agreement among DWR, Dudley Ridge, and Empire, dated August 8, 2018, and executed August 28, 2018, approved the transfer of up to 1,500 af of Empire's 2018 Table A water to Dudley Ridge through December 31, 2018, on behalf of landowner Sandridge Partners Incorporated, which farms in both Dudley Ridge and Empire service areas. During 2018, a total of 438 af of Empire's Table A water was delivered to Dudley Ridge under this agreement. (SWPAO #18023)

Kern/Tulare

A change in point of delivery agreement among DWR, Kern, and Tulare, executed October 2, 2018, approved the delivery of up to 25,000 af of Tulare's 2018 Table A water to Kern through December 31, 2018. This is to facilitate the delivery of Kern's acquired

pre-1914 Kings River water rights water from J.G. Boswell Company, a landowner in Tulare, to Kern's service area. This pre-1914 Kings River water rights water, up to 25,000 af, would be delivered to Tulare for use in its service area. During 2018, no water was delivered to Kern under this agreement. (SWPAO #18022)

Dudley Ridge/Solano

A letter agreement among DWR, Dudley Ridge, and Solano, dated July 6, 2018, and executed August 9, 2018, approved the delivery of up to 1,000 af of Solano's 2018 Table A water to Dudley Ridge through December 31, 2018. In exchange, Dudley Ridge will return up to 250 af, based on an unbalanced exchange ratio of 4:1, of its future Table A water to Solano by December 31, 2028. During 2018, a total of 1,000 af of Solano's Table A water was delivered to Dudley Ridge under this agreement. (SWPAO #18020)

Tulare/Pleasant Valley Water District/San Luis Water District/Westlands

A change in point of delivery agreement among DWR, Tulare, Pleasant Valley Water District (Pleasant Valley), San Luis Water District (San Luis), and Westlands, executed August 27, 2018, approved the delivery of up to a total of 65,000 af of Tulare's Table A water to Pleasant Valley, San Luis, and Westlands through July 1, 2019. This was to facilitate the delivery of pre-1914 Kings River water rights water acquired by Pleasant Valley, San Luis, and Westlands from J.G. Boswell Company, a landowner in Tulare, to their respective service areas. J.G. Boswell Company's pre-1914 Kings River water rights water, up to 65,000 af, will be delivered to Tulare for use in its service area. DWR filed a petition with the State Water Resources Control Board (State Water Board) and received a one-year approval effective July 2, 2018, for the consolidation of SWP and CVP places of use. During 2018,

no water was moved under this agreement. (SWPAO #18019)

Santa Clara/Solano

A letter agreement among DWR, Santa Clara, and Solano, dated August 13, 2018, and executed September 13, 2018, approved the delivery of up to 8,000 af of Solano's 2018 Table A water to Santa Clara through December 31, 2018. In exchange, Santa Clara will return up to 2,000 af, based on an unbalanced exchange ratio of 4:1, of its future Table A water to Solano through December 31, 2028. During 2018, a total of 8,000 af of Solano's Table A water was delivered to Santa Clara under this agreement. (SWPAO #18018)

Mojave/Santa Barbara

A letter agreement among DWR, Mojave, and Santa Barbara, dated June 8, 2018, and executed June 11, 2018, approved the delivery of up to 5,633 af of Mojave's 2018 Table A water to Santa Barbara through December 31, 2018. In exchange, Santa Barbara will return up to 1,409 af, based on an unbalanced exchange ratio of 4:1, of its future Table A water to Mojave through December 31, 2028. During 2018, a total of 5,633 af of Mojave's Table A water was delivered to Santa Barbara under this agreement. (SWPAO #18016)

AVEK/Kern

A letter agreement among DWR, AVEK, and Kern, dated June 5, 2018, and executed July 12, 2018, approved the transfer of up to 6,000 af of AVEK's 2018 Table A water to Kern through December 31, 2018, on behalf of landowner Tejon Ranch Company, which farms in both AVEK and Kern service areas. During 2018, a total of 5,889 af of AVEK's Table A water was delivered to Kern under this agreement. (SWPAO #18015)

Kern

A letter agreement between DWR and Kern, dated April 26, 2018, and executed May 15, 2018, approved the conveyance of up to 3,212 af of Westlands' CVP water (non-SWP water) to Kern through December 31, 2018. Reclamation made the non-SWP water available to DWR at O'Neill Forebay. DWR conveyed the non-SWP water to Kern under Article 55 of Kern's Water Supply Contract with DWR. During 2018, a total of 3,203 af of non-SWP water was conveyed to Kern under this agreement. (SWPAO #18014)

Santa Clara

A letter agreement between DWR and Santa Clara, dated July 16, 2018, and executed August 23, 2018, approved the exchange of up to 75,000 af of SWP water with Santa Clara's CVP water (non-SWP water). Reclamation would make up to 75,000 af of Santa Clara's non-SWP water available to DWR at O'Neill Forebay. DWR would deliver the non-SWP water to SWP service areas south of O'Neill Forebay. In exchange, DWR would deliver an equal amount of SWP water to Santa Clara. DWR filed a petition with the State Water Board and received a one-year approval effective July 2, 2018, for the consolidation of CVP and SWP places of use. This agreement terminates on July 1, 2019. During 2018, no water was moved under this agreement. (SWPAO #18013)

Kern

A letter agreement between DWR and Kern, dated July 6, 2018, and executed July 12, 2018, approved the conveyance of up to 50,000 af of Kern-Tulare Water District's CVP water (non-SWP water) to Kern. Reclamation made the non-SWP water available to DWR at O'Neill Forebay and/or Banks Pumping Plant. DWR conveyed the non-SWP water to Kern under Article 55 of Kern's Water Supply Contract with DWR. DWR filed a petition with the State Water Board and received a one-year approval effective July 2, 2018, for the consolidation of CVP and SWP places of

use. This agreement terminates on July 1, 2019. During 2018, a total of 25,105 af of non-SWP water was conveyed to Kern under this agreement. (SWPAO #18012)

Metropolitan/San Gorgonio

An agreement among DWR, Metropolitan, and San Gorgonio, executed July 23, 2018, approved the delivery of up to 5,000 af of San Gorgonio's 2018 Table A water to Devil Canyon Powerplant Afterbay for subsequent delivery by Metropolitan to either San Gorgonio and/or Metropolitan service areas via Metropolitan's delivery facilities, through December 31, 2018. Due to a planned temporary outage of the East Branch Extension, DWR was not able to deliver SWP water to San Gorgonio. Metropolitan offered to assist in the delivery of San Gorgonio's approved Table A water to San Gorgonio during this outage.

DWR would facilitate the water delivery to San Gorgonio by making San Gorgonio's 2018 Table A water available to Metropolitan at Devil Canyon Afterbay. Metropolitan would then deliver the water from Devil Canyon Afterbay to San Gorgonio using a combination of two methods: (1) delivery of San Gorgonio's Table A water to San Gorgonio's service area via Metropolitan's Inland Feeder; and/or (2) delivery of San Gorgonio's Table A water to Metropolitan's service area via Metropolitan's Rialto Pipeline, and in exchange, an equal amount of Metropolitan's water stored in Diamond Valley Lake would be delivered to San Gorgonio's service area using Metropolitan's Inland Feeder. During 2018, no water was moved under this agreement. (SWPAO #18009)

Metropolitan/San Bernardino

An agreement among DWR, Metropolitan, and San Bernardino, executed July 24, 2018, approved the delivery of up to 20,000 af of San Bernardino's 2018 Table A water to Devil Canyon Powerplant Afterbay for

subsequent delivery by Metropolitan to either San Bernardino and/or Metropolitan service areas via Metropolitan's delivery facilities, through December 31, 2018. Due to a planned temporary outage of the East Branch Extension, DWR was not able to deliver SWP water to San Bernardino. Metropolitan offered to assist in the delivery of San Bernardino's approved Table A water to San Bernardino during this outage.

DWR would facilitate the water delivery to San Bernardino by making San Bernardino's 2018 Table A water available to Metropolitan at Devil Canyon Powerplant Afterbay. Metropolitan would then deliver the water from Devil Canyon Powerplant Afterbay to San Bernardino using a combination of two methods: (1) delivery of San Bernardino's Table A water to San Bernardino's service area via Metropolitan's Inland Feeder; and/or (2) delivery of San Bernardino's Table A water to Metropolitan's service area via Metropolitan's Rialto Pipeline, and in exchange, an equal amount of Metropolitan's water stored in Diamond Valley Lake would be delivered to San Bernardino's service area using Metropolitan's Inland Feeder. During 2018, no water was moved under this agreement. (SWPAO #18008)

San Gorgonio/Ventura

A letter agreement among DWR, San Gorgonio, Ventura, City of San Buenaventura (San Buenaventura), and Casitas Municipal Water District (Casitas), dated June 14, 2018, and executed July 9, 2018, approved the delivery of up to 5,250 af of Ventura's 2018 Table A water to San Gorgonio through December 31, 2018. This amount was proportioned between two of Ventura's member agencies, San Buenaventura and Casitas. Up to 3,500 af came from San Buenaventura and up to 1,750 af came from Casitas. In exchange, San Gorgonio will return up to 2,100 af, based on an unbalanced exchange ratio of 2.5 to 1, of its future approved Table A water to San Buenaventura and Casitas through

December 31, 2028. During 2018, a total of 5,250 af of Ventura's Table A water was delivered to San Gorgonio under this agreement. (SWPAO #18007)

AVEK/Kern/San Gorgonio

A letter agreement among DWR, AVEK, Kern, and San Gorgonio, dated May 4, 2018, and executed July 20, 2018, approved the conveyance of up to 1,700 af of non-SWP water to San Gorgonio. This non-SWP water was Nickel Family LLC's pre-1914 water rights water that San Gorgonio acquired from AVEK and was made available to DWR at Reach 12E of the California Aqueduct for subsequent delivery by DWR to San Gorgonio under Article 55 of San Gorgonio's Water Supply Contract with DWR. This agreement was effective through December 31, 2018. During 2018, a total of 1,700 af of non-SWP water was conveyed to San Gorgonio under this agreement. (SWPAO #18005)

Kern/Tulare

A letter agreement among DWR, Kern, and Tulare, dated March 2, 2018, and executed April 18, 2018, approved the transfer of up to 10,000 af of Tulare's 2018 Table A water to Kern through December 31, 2018, on behalf of landowner Sandridge Partners Incorporated, which farms in both Tulare and Kern service areas. During 2018, a total of 900 af of Tulare's Table A water was delivered to Kern under this agreement. (SWPAO #18004)

A letter agreement among DWR, Kern, and Tulare, dated March 2, 2018, and executed March 29, 2018, approved the transfer of up to 10,000 af of Tulare's 2018 Table A water to Kern through December 31, 2018, on behalf of landowner J.G. Boswell Company, which farms in both Tulare and Kern service areas. During 2018, no water was moved under this agreement. (SWPAO #18002)

Tulare/Westlands

A letter agreement among DWR, Tulare, and Westlands, dated March 2, 2018, and executed March 5, 2018, approved the transfer of up to 1,500 af of Tulare's 2018 Table A water to Westlands through December 31, 2018, on behalf of landowner Westlake Farms Incorporated, which farms in both Tulare and Westlands service areas. During 2018, no water was moved under this agreement. (SWPAO #18001)

Tulare

A letter agreement between DWR and Tulare, dated and executed February 12, 2018, approved the conveyance of up to 1,300 af of non-SWP water to Tulare. This non-SWP water was CVP water acquired by Angiola Water District, a member unit of Tulare, from Mercy Springs Water District. Reclamation made the non-SWP water available to DWR at O'Neill Forebay for subsequent delivery by DWR to Tulare under Article 55 of Tulare's Water Supply Contract with DWR. This agreement was effective through February 28, 2018. During 2018, a total of 1,300 af of non-SWP water was conveyed to Tulare under this agreement. (SWPAO #17035)

A letter agreement (SWPAO #17034) between DWR and Tulare, dated and executed January 8, 2018, approved the conveyance of up to 5,000 af of non-SWP water to Tulare through February 28, 2018. This non-SWP water was Friant Recirculation Water associated with the San Joaquin River Restoration Program and was made available at O'Neill Forebay by Reclamation to DWR for subsequent delivery by DWR to Tulare's turnout(s) under Article 55 of Tulare's Water Supply Contract with DWR.

An amendment (SWPAO #17034-A), dated February 23, 2018, and executed February 26, 2018, approved an increase in the amount of the non-SWP water delivered to Tulare from up to 5,000 af, (as specified

in SWPAO #17034), to up to 15,000 af, and approved the conveyance of the non-SWP water by DWR from O'Neill Forebay and/or San Luis Reservoir to Tulare's service area through December 31, 2018. During 2018, a total of 13,000 af of non-SWP water was delivered to Tulare under this agreement. (SWPAO #17034-A, #17034)

Dudley Ridge/Kern/Metropolitan

A multiyear exchange and change in point of delivery agreement among DWR, Dudley Ridge, Kern, and Metropolitan, executed June 7, 2018, approved the delivery of up to 12,240 af of Dudley Ridge's approved Table A water to Metropolitan through December 31, 2027. In exchange, Metropolitan will return up to 6,120 af, based on an unbalanced exchange ratio of 2:1, of its future approved Table A water to Dudley Ridge within 10 years of delivery to Metropolitan or by December 31, 2035, whichever comes earlier. This agreement allows for the delivery of a portion of Dudley Ridge's approved Table A water to either Metropolitan's service area and/or to Kern's turnout(s) for storage in the Irvine Ranch Water District's banking facilities in Kern County. Water delivered to Kern County for storage will be returned to Metropolitan for later use in its own service area by December 31, 2035. During 2018, a total of 621 af of Dudley Ridge's Table A water was delivered to Kern under this agreement. (SWPAO #17030)

Kern/Santa Barbara

A long-term change in point of delivery agreement among DWR, Kern, and Santa Barbara, executed March 8, 2018, approved the delivery of a portion of Santa Barbara's approved SWP water for storage in the groundwater basin underlying Semitropic Water Storage District, a member unit of Kern, and the return of the stored water to Santa Barbara through December 31, 2035. During 2018, a total of 900 af of Santa

Barbara's Table A water was delivered to Kern under this agreement. (SWPAO #17022)

Butte

An agreement between DWR and Butte, executed March 26, 2018, approved the conveyance of up to 3,000 af per year of non-SWP water to California Water Service, a member agency of Butte, through December 31, 2027. This non-SWP water is made available to DWR at Lake Oroville by Pacific Gas & Electric Company through its Lime Saddle Powerhouse for subsequent delivery by DWR to California Water Service's turnout(s) via the Thermalito Power Canal under Article 55 of Butte's Water Supply Contract with DWR. During 2018, a total of 2,835 af of non-SWP water was conveyed to Butte under this agreement. (SWPAO #17021)

AVEK/Littlerock

An amendment (SWPAO #10035-A) among DWR, AVEK, and Littlerock, dated March 15, 2018, and executed March 20, 2018, extends the term of a letter agreement among DWR, AVEK, and Littlerock (SWPAO #10035), originally executed on December 14, 2010, to December 31, 2021. The original agreement (SWPAO #10035) approved the delivery of up to 1,150 af of Littlerock's 2010 Table A water to AVEK through December 31, 2010. In exchange, AVEK will return an equal amount of its future Table A water to Littlerock through December 31, 2020. During 2018, no water was moved under this agreement. (SWPAO #10035-A, SWPAO #10035)

An amendment (SWPAO #09081-A) among DWR, AVEK, and Littlerock, dated March 15, 2018, and executed March 20, 2018, extends the term of a letter agreement among DWR, AVEK, and Littlerock (SWPAO #09081), originally executed on December 30, 2009, to December 31, 2021. The original agreement (SWPAO #09081) approved the delivery of up to 920 af of Littlerock's 2009 Table A water to AVEK through December 31, 2009. In exchange, AVEK will return an equal

amount of its future approved Table A water to Littlerock through December 31, 2019. During 2018, no water was moved under this agreement. (SWPAO #09081-A, SWPAO #09081)

An amendment (SWPAO #08059-A) among DWR, AVEK, and Littlerock, dated March 15, 2018, and executed March 20, 2018, extends the term of a letter agreement among DWR, AVEK, and Littlerock (SWPAO #08059), originally executed October 23, 2008, to December 31, 2021. The original agreement (SWPAO #08059) approved the delivery of up to 805 af of Littlerock's 2008 Table A water to AVEK through December 31, 2008. In exchange, AVEK will return an equal amount of AVEK's future approved Table A water to Littlerock through December 31, 2018. During 2018, no water was moved under this agreement. (SWPAO #08059-A, SWPAO #08059)

Water Conveyance and Exchange Agreements Prior to 2018

Kern

A letter agreement between DWR and Kern, dated July 7, 2017, and executed July 12, 2017, approved the delivery of up to 50,000 af of Westlands' CVP water (non-SWP water) to Kern through February 28, 2018. This non-SWP water was delivered to Kern for storage in the Semitropic Water Storage District's Groundwater Banking Program. The stored water will be returned to Westlands by December 31, 2028. Reclamation made this non-SWP water available to DWR at O'Neill Forebay. DWR conveyed the non-SWP water to Kern under Article 55 of Kern's Water Supply Contract with DWR. In 2018, a total of 12,832 af of non-SWP water was delivered to Kern under this agreement. (SWPAO #17020)

Santa Clara

A letter agreement between DWR and Santa Clara, dated July 31, 2017, and executed

August 21, 2017, approved the exchange of up to 75,000 af of SWP water with Santa Clara's CVP water (non-SWP water). Reclamation would make up to 75,000 af of Santa Clara's non-SWP water available to DWR at O'Neill Forebay. DWR would deliver this non-SWP water to SWP service areas south of O'Neill Forebay. In exchange, DWR would deliver an equal amount of SWP water to Santa Clara. DWR filed a petition with the State Water Board and received a one-year approval effective June 8, 2017, for the consolidation of CVP and SWP places of use. This agreement terminated on June 7, 2018. During 2018, a total of 11,399 af of non-SWP water was made available to DWR at O'Neil Forebay, and a total of 11,399 af of SWP water was delivered to Santa Clara under this agreement. (SWPAO #17019)

San Bernardino/San Gorgonio

An agreement among DWR, San Bernardino, and San Gorgonio, pending execution, provides for a change in point of delivery of up 2,400 af annually of San Gorgonio's Table A water to San Bernardino's turnout(s) located on the East Branch Extension of the California Aqueduct. Yucaipa Valley Water District (Yucaipa Valley) serves customers located in both San Bernardino and San Gorgonio service areas. However, Yucaipa Valley's only physical connection to the SWP system is located at San Bernardino's turnout at Reach 3A of the California Aqueduct's East Branch Extension (Reach EBX-3A) from which SWP water is conveyed to Yucaipa Valley's service area. This agreement allows Yucaipa Valley to receive San Gorgonio's Table A water for use in the San Gorgonio portion of Yucaipa Valley's service area. This agreement terminates on December 31, 2035. During 2018, a total of 553 af of San Gorgonio's Table A water was delivered to San Bernardino's turnout(s) under this agreement. (SWPAO #16030)

Santa Clara

An agreement (SWPAO #15016) between DWR and Santa Clara, executed September 21, 2015, allowed for additional temporary points of delivery of a portion of Santa Clara's SWP water at San Luis Reservoir and/or O'Neill Forebay through December 31, 2017. Santa Clara's water delivered to San Luis Reservoir and/or O'Neill Forebay under this agreement would be used within the SWP place of use in Santa Clara's service area. A subsequent amendment (SWPAO #15016-A), executed November 21, 2017, extended the term of the agreement to December 31, 2020. During 2018, a total of 2,000 af of Santa Clara's Table A water was delivered to San Luis Reservoir under this agreement. (SWPAO #15016, #15016-A)

San Bernardino/Santa Clara

A letter agreement among DWR, San Bernardino, and Santa Clara, dated July 16, 2015, and executed August 4, 2015, approved the delivery of up to 2,500 af of San Bernardino's 2015 Table A water to Santa Clara by December 31, 2015. In exchange, Santa Clara would return up to 5,000 af, based on an exchange ratio of 1:2, of its future approved SWP water to San Bernardino. Santa Clara will return to San Bernardino up to 2,500 af of its future SWP water by December 31, 2018, and up to 2,500 af of its future SWP water through December 31, 2023. Santa Clara returned a total of 2,500 af of its Table A water to San Bernardino in 2017 and, during 2018, a total of 2,500 af of Santa Clara's Table A water was delivered to San Bernardino, thereby completing this agreement. (SWPAO #15014)

Palmdale/San Bernardino

A letter agreement among DWR, Palmdale, and San Bernardino, dated August 1, 2014, and executed August 14, 2014, approved the delivery of up to 2,500 af of San Bernardino's SWP water to Palmdale through December 31, 2014. In exchange,

Palmdale would return up to 5,625 af, based on an unbalanced exchange ratio of 1:2.25, of its future approved SWP water to San Bernardino through December 31, 2018. During 2018, a total of 375 af of Palmdale's Table A water was delivered to San Bernardino, thereby completing this agreement. (SWPAO #14013)

Dudley Ridge/Santa Clara

A letter agreement among DWR, Dudley Ridge, and Santa Clara, dated June 28, 2013, and executed July 12, 2013, approved the annual conveyance of up to 3,100 af, minus carriage water losses, of non-SWP water to Dudley Ridge and Santa Clara, on a 50/50 shared basis, through December 31, 2025. This non-SWP water is Browns Valley Irrigation District's pre-1914 water rights water. DWR conveys the non-SWP water to Dudley Ridge and Santa Clara under Article 55 of Dudley Ridge's and Santa Clara's respective Water Supply Contract with DWR. In 2018, Santa Clara elected to decline its share of the non-SWP water; subsequently, in a letter dated June 12, 2018, DWR approved the conveyance of up to 3,100 af of non-SWP water solely to Dudley Ridge for 2018. During 2018, a total of 1,593 af of non-SWP water was delivered to Dudley Ridge under this agreement. (SWPAO #13020)

Butte

Three multiyear agreements (SWPAO #13013, SWPAO #13014, and SWPAO #13015) were executed in 2014 among DWR, Butte, and several participating SWP Contractors. Butte's Water Supply Contract with DWR provides for Butte to have a maximum Table A amount of 27,500 af per year. Butte determined that 24,000 af per year of its Table A amount is not needed to meet its in-county demands for 2014 through 2021 and requested a transfer of up to 24,000 af per year of its Table A water to Palmdale, Dudley Ridge, and Kern. Up to 10,000 af of Butte's allocated Table A water

is made available to transfer to Palmdale. Up to 14,000 af of Butte's allocated Table A water is shared on a percentage basis of 85.66 and 14.34 percent for transfer to Kern and Dudley Ridge, respectively. Butte also determined that the difference of 3,500 af per year (27,500 af minus 24,000 af) may not be fully utilized by Butte for its in-county needs and requested a transfer of a portion of the 3,500 af per year on a percentage basis to Palmdale, Dudley Ridge, and Kern when it becomes available (Butte's Additional Water).

In 2018, Butte's allocated Table A water was transferred as follows:

Butte/Kern. A multiyear agreement among DWR, Butte, and Kern, executed August 5, 2014, approved the annual delivery of a portion of Butte's allocated Table A water plus a portion of Butte's Additional Water when it becomes available to four of Kern's member units (Belridge Water Storage District, Berrenda Mesa Water Storage District, Lost Hills Water District, and Wheeler Ridge-Maricopa Water Storage District) in years 2014 through 2021. During 2018, a total of 4,731 af of Butte's Table A water was delivered to Kern under this agreement. (SWPAO #13015)

Butte/Dudley Ridge. A multiyear agreement among DWR, Butte, and Dudley Ridge, executed August 5, 2014, approved the annual delivery of a portion of Butte's allocated Table A water plus a portion of Butte's Additional Water when it becomes available to Dudley Ridge in years 2014 through 2021. During 2018, a total of 800 af of Butte's Table A water was delivered to Dudley Ridge under this agreement. (SWPAO #13014)

Butte/Palmdale. A multiyear agreement among DWR, Butte, and Palmdale, executed August 5, 2014, approved the annual delivery of a portion of Butte's allocated Table A water plus a portion of Butte's Additional

Water when it becomes available to Palmdale in years 2014 through 2021. During 2018, a total of 3,500 af of Butte's Table A water was delivered to Palmdale under this agreement. (SWPAO #13013)

Dudley Ridge/Kern/Metropolitan

A multiyear exchange and change in point of delivery agreement among DWR, Dudley Ridge, Kern, and Metropolitan, executed December 16, 2013, approved the delivery of up to 8,700 af of Dudley Ridge's SWP water to Metropolitan by December 31, 2017. In exchange, Metropolitan will return up to 4,350 af, based on an unbalanced exchange ratio of 2:1, of its future SWP water to Dudley Ridge by December 31, 2022. This agreement allowed for the delivery of a portion of Dudley Ridge's SWP water to either Metropolitan's service area and/or to Kern's turnout for storage in the Rosedale-Rio Bravo/Irvine Ranch Water District Banking and Exchange Program, for later use by Metropolitan in its own service area. During 2018, a total of 295 af of Metropolitan's Table A water was delivered to Dudley Ridge under this agreement. (SWPAO #13012)

Coachella/Kern

A multiyear change in point of delivery and conveyance agreement among DWR, Coachella, and Kern, executed July 30, 2013, approved the annual delivery of up to 16,500 af of water, acquired by Coachella back to Coachella, through December 31, 2035. Glorious Land Company (GLC) and Rosedale-Rio Bravo executed an agreement in 2005 to provide a water supply from Rosedale-Rio Bravo to GLC's development project in Riverside County. GLC was not yet ready to receive the water to which it was entitled under the 2005 Rosedale-Rio Bravo/GLC Agreement. In 2012, GLC and Coachella executed an assignment agreement that allowed Coachella to annually acquire up to 16,500 af of Rosedale-Rio Bravo's water under the 2005 Rosedale-Rio Bravo/GLC Agreement (Assigned Water). This

agreement allows for the delivery of the Assigned Water to Coachella by (1) a change in point of delivery of a portion of Rosedale-Rio Bravo's allocation of Kern's Table A water as an exchange for a like amount of Assigned Water and/or (2) conveyance of the Assigned Water to Coachella under Article 55 of Coachella's Water Supply Contract with DWR by direct pump-in of the water into the California Aqueduct. During 2018, a total of 20,603 af was delivered to Coachella under this agreement. (SWPAO #12023)

Kern/City of Tracy

A multiyear conveyance agreement among DWR, Kern, and the City of Tracy (Tracy), executed December 14, 2011, approved the conveyance of up to 10,500 af annually of Tracy's CVP water to Kern for storage in the Semitropic Water Banking Program through December 31, 2029. Reclamation will make Tracy's CVP water available to DWR at O'Neill Forebay for subsequent delivery by DWR to Kern's turnout(s). Kern will return the stored water to Tracy, up to 3,500 af annually, by December 31, 2030. In 2018, a total of 10,500 af of Tracy's CVP water was conveyed to Kern under this agreement. (SWPAO #10031)

Dudley Ridge/Kern

A multiyear agreement among DWR, Dudley Ridge, and Kern, executed June 13, 2011, provided for the delivery of a portion of Dudley Ridge's approved Table A water for same landowner transfers to Kern through December 31, 2020. During 2018, a total of 28,300 af of Dudley Ridge's water was delivered to Kern under this agreement. (SWPAO #10030)

Empire/Westlands

A long-term change in place of use agreement among DWR, Empire, and Westlands, executed March 3, 2011, approved the annual delivery of up to 2,000 af of Empire's Table A water to

Westlands' turnout(s) through April 1, 2027. This transfer was made on behalf of two landowners, Brooks Farms and Newton Brothers Farms, who farm in both Empire and Westlands service areas. The State Water Board issued an order authorizing the long-term change in place of use on November 21, 2011. During 2018, a total of 301 af of Empire's Table A water was delivered to Westlands under this agreement. (SWPAO #10008)

Tulare/Westlands

A long-term change in place of use agreement among DWR, Tulare, and Westlands, executed January 7, 2011, approved the annual delivery of up to 8,000 af of Tulare's Table A water to Westlands' turnout(s) through April 1, 2027. The transfer was made on behalf of two landowners, Hansen Ranches and Newton Brothers Farms, who farm in both Tulare and Westlands service areas. The State Water Board issued an order authorizing the long-term change in place of use on November 21, 2011. In 2018, a total of 2,210 af of Tulare's Table A water was delivered to Westlands under this agreement. (SWPAO #10006)

Napa/Solano

A long-term agreement among DWR, Napa, and Solano, executed October 11, 2010, approved the conveyance of up to 500 af annually of the City of Vallejo's non-SWP water to Napa's turnout(s) located on the North Bay Aqueduct under Article 55 of Napa's Water Supply Contract with DWR. The City of Vallejo is a member agency of Solano and has water rights to this non-SWP water originating from tributaries Cache Slough and Lindsay Slough of the Sacramento River. This non-SWP water will be subsequently delivered to an area of the City of American Canyon. This agreement is effective through December 31, 2035. An amendment (SWPAO #10005-A) among DWR, Napa, and Solano, executed December 15, 2016,

increased the annual amount of the City of Vallejo's non-SWP water delivered to Napa's turnout(s), from 500 af under the original agreement (SWPAO #10005) to 1,000 af, retroactive January 1, 2014. During 2018, a total of 500 af of non-SWP water was conveyed to Napa's turnout(s) under this agreement. (SWPAO #10005 and #10005-A)

Crestline/San Bernardino

A letter agreement among DWR, Crestline, and San Bernardino, dated December 7, 2009, and executed December 8, 2009, approved the delivery of up to 1,000 af of Crestline's 2009 Table A water to San Bernardino by December 31, 2009. In exchange, San Bernardino will return up to 650 af of its future approved Table A water to Crestline by December 31, 2018. There was no monetary payment between Crestline and San Bernardino for this unbalanced water exchange. During 2018, a total of 390 af of San Bernardino's Table A water was delivered to Crestline, thereby completing this agreement. (SWPAO #09079)

A point of delivery agreement among DWR, Crestline, and San Bernardino, executed April 17, 2008, approved the delivery of a portion of San Bernardino's 2007 and future approved Table A water to Crestline. This agreement provided for an emergency water supply totaling 7,600 af to Lake Arrowhead Community Services District through December 31, 2020 or until all water has been delivered under this agreement, whichever comes first. During 2018, a total of 237 af of San Bernardino's Table A water was delivered to Crestline under this agreement. (SWPAO #07025)

Kings/Westlands

A long-term change in point of delivery agreement among DWR, Kings, and Westlands, executed May 6, 2008, approved the delivery of Kings' SWP water to Westlands' turnout(s) in Reaches 6 and 7 of the California Aqueduct for use on

Westlands' agricultural lands within the Kings service area. This agreement is effective through December 31, 2035. During 2018, a total of 42 af of Kings' Table A water was delivered to Westlands' turnout(s) under this agreement. (SWPAO #07010)

Kern/Santa Clarita

A long-term agreement among DWR, Santa Clarita (formal name change per SWPAO #18006), and Kern, executed February 5, 2008, approved the annual conveyance of up to 11,000 af of Kings River pre-1914 water rights water from Buena Vista Water Storage District (Buena Vista), a member unit of Kern, to Santa Clarita. The conveyance of this non-SWP water to Santa Clarita is accomplished by either (1) a change in point of delivery of a portion of Kern's Table A water to Santa Clarita as an exchange for a like amount of Buena Vista's water, or (2) by direct pump-in of the non-SWP water to the California Aqueduct and conveyed to Santa Clarita under Article 55 of Santa Clarita's Water Supply Contract with DWR. During 2018, a total of 6,000 af was delivered to Santa Clarita under this agreement. (SWPAO #07008)

Kings/Westlands

A long-term change in point of delivery agreement among DWR, Kings, and Westlands, executed March 24, 2004, approved the delivery of up to 5,000 af of Kings' Table A water annually through Westlands' turnout(s) for use within King's service area. This agreement is effective through December 31, 2035. During 2018, a total of 2,363 af of Kings' Article 56(c) carryover water was delivered to Westlands' turnout(s) under this agreement. (SWPAO #04005)

Solano/Cities of Fairfield, Vacaville, and Benicia

A settlement agreement among DWR, Solano, and the cities of Fairfield, Vacaville, and Benicia (three cities), which includes

conveyance service by Solano, was executed on May 19, 2003. This agreement provided for the delivery of up to 31,620 af per year of settlement water, through December 31, 2035, to Solano for delivery through the North Bay Aqueduct to the three cities to help meet their current and future municipal and industrial water needs. During 2018, a total of 2,997 af of settlement water was delivered to Solano for conveyance to the three cities. (SWPAO #03017)

Kings/Tulare

A long-term change in point of delivery agreement among DWR, Kings, and Tulare, executed March 10, 2006, provides for the annual delivery of up to 200 af of Kings' Table A water to Westlands' turnout(s). The water is conveyed to GWF Energy LLC, for use within Kings' service area. This agreement is effective through December 31, 2035. During 2018, a total of 4 af of Kings' Table A water was delivered to Westlands' turnout(s) under this agreement. (SWPAO #02031)

Kern

A long-term change in point of delivery agreement between DWR and Kern, executed June 8, 2000, approved the delivery of a portion of Kern's annual Table A water to Western Hills Water District (Western Hills). In exchange, Kern will receive a like amount of local water acquired by Western Hills in the Pioneer Groundwater Bank Project. The State Water Board approved Western Hills' service area to be included within the authorized SWP place of use on April 21, 2000. During 2018, a total 735 af of Kern's Table A water was delivered to Western Hills under this agreement. (SWPAO #01001)

Napa/Solano

A change in point of delivery agreement among DWR, Napa, and Solano, executed December 26, 2001, approved the annual delivery of up to 628 af of Napa's Table A

water to the City of Vallejo's Water Treatment Plant in Solano's service area; this water is subsequently conveyed to the City of American Canyon, a member agency of Napa. This agreement is effective through December 31, 2035. During 2018, a total of 22 af of Napa's Table A water was delivered to Solano's turnout(s) under this agreement. (SWPAO #00029)

AVEK/Mojave

A change in point of delivery agreement (SWPAO #97003) among DWR, AVEK, and Mojave, executed November 13, 1997, allowed for the delivery of up to 2,250 af of Mojave's Table A water annually to AVEK's turnout(s) through December 31, 2019. Mojave's water is delivered to the solar power generating plant that is located within Mojave's service area, but is not located near any of Mojave's delivery facilities. AVEK has the conveyance facilities and has agreed to provide water service on Mojave's behalf. An amendment (SWPAO #97003-A), executed January 12, 2012, extended the term of the original agreement to December 31, 2035, and increased the delivery amount, from up to 2,250 af, to up to 4,800 af annually, to AVEK's turnout(s). SWPAO #97003-A also allowed the delivery of up to 1,800 af annually of Mojave's Table A water through AVEK's turnout(s) for use by the solar power generating plant, and the delivery of up to 3,000 af annually of Mojave's Table A water to AVEK's groundwater basin as a backup water supply to the plant in the event of an outage on the SWP system. Another amendment (SWPAO #97003-B) among DWR, Mojave, and AVEK, executed April 30, 2015, approved an additional point of delivery of Mojave's SWP Table A water to AVEK's turnout(s) at Reach 20A of the California Aqueduct. During 2018, a total of 866 af of Mojave's Article 56(c) carryover water was delivered to AVEK under this agreement. (SWPAO #97003-B, #97003-A, and #97003)

Introduction of Local Water Agreements

No Introductions of Local Water Agreements were executed in 2018.

Turnout Agreements

San Luis Obispo County Flood Control and Water Conservation District

On January 2, 2018, DWR executed an agreement with San Luis Obispo County Flood Control and Water Conservation District and Central Coast Water Authority for the construction, operation, and maintenance of the Shandon Turnout, which is located at Milepost 38.23 of the California Aqueduct's Coastal Branch and has a design capacity of 0 to 3.3 cubic feet per second (cfs), depending on the operating conditions of the SWP. The Agreement supersedes the May 6, 2013, Agreement of the same title.

The Metropolitan Water District of Southern California

On August 17, 2018, DWR executed an amendment with The Metropolitan Water District of Southern California to extend the termination date of the May 15, 2017, Funding Agreement for the costs of environmental analysis, planning, and preliminary design of the Lake Perris Water Recovery Project from June 30, 2018, to June 30, 2020.

Antelope Valley-East Kern Water Agency

On October 10, 2018, DWR executed an agreement with AVEK for the construction, operation, and maintenance of the Upper Amargosa Creek Turnout, which is located at Milepost 342.73 of the California Aqueduct's East Branch and has a design capacity of 100 cfs.

San Gorgonio Pass Water Agency

On October 4, 2018, DWR executed an amendment with San Gorgonio Pass Water Agency for modification of the

Beaumont-Cherry Valley Turnout, which is located at Station 697+90 of the California Aqueduct's East Branch Extension. The turnout was enlarged from an initial design capacity of 20 cfs to 34 cfs.

Activities Related to the Monterey Amendments

Storage of Water Outside SWP Contractor Service Areas

Pursuant to Article 56(c) of the Monterey Amendments, eight SWP Contractors have separate agreements with DWR to convey approved water supplies outside their service areas for storage in existing and operational groundwater storage programs and for future recovery of water to use within their service areas. The active change in point of delivery agreements are listed in Table 8-1. These agreements include provisions for conveyance to and from storage, and recovery methods by exchange and/or pump-in to the California Aqueduct. During 2018, a total of 65,142 af was conveyed to storage, including losses, and 37,976 af was recovered from storage.

Water Pool Programs

In 2018, no SWP Contractor participated in the Turn-Back Water Pool Program.

Article 21 Water Program

Pursuant to the Monterey Amendments, Article 21 water replaces surplus, wet weather, and Article 12(d) water. The Article 21 Water Program allows an SWP Contractor to take delivery of water over the approved and scheduled Table A amounts for the current year. Article 21 water is only available for delivery on a short-term basis as determined by DWR when water is still available after operational requirements for SWP water deliveries, water quality, and Sacramento-San Joaquin Delta (Delta) requirements are met. During Delta excess conditions, Solano and Napa are contracted to receive Article 21 deliveries in all years.

During 2018, 2,180 af of Article 21 water was delivered to SWP Contractors.

Table 8-2 lists Article 21 water delivered to SWP Contractors.

Flexible Storage Program

Pursuant to Article 54 of the Monterey Amendments, the Flexible Storage Program provides the option to SWP Contractors participating in the repayment of the capital costs of Castaic Lake and Lake Perris to withdraw water in excess of approved deliveries. The program objective is to provide additional flexibility to benefit local water management activities. Participating SWP Contractors are given five years to replace withdrawn stored water with approved SWP or non-SWP water.

Flexible storage allows for withdrawal of up to 160,000 af at Castaic Lake and 65,000 af at Lake Perris. SWP Contractors participating in the Castaic Lake Flexible Storage Program include Metropolitan, Ventura, and Castaic. These contractors are allowed to withdraw up to a maximum of 153,940 af, 1,377 af, and 4,683 af, respectively. Metropolitan is the only SWP Contractor allowed to withdraw water, up to a maximum of 65,000 af, from Lake Perris.

In 2018, Metropolitan started the year with a flexible storage balance due of zero af. Metropolitan did not withdraw any flexible storage water in 2018 and replaced zero af, leaving Metropolitan with an end-of-year flexible storage balance due of zero. Castaic Lake started the year with a flexible storage balance due of zero af. Castaic Lake did not withdraw any flexible storage water in 2018, and replaced zero af, leaving Castaic Lake with an end-of-year flexible storage balance due of zero.

Carryover Program

Pursuant to Article 56(c) of the Monterey Amendments, SWP Contractors can elect to

Table 8-1 Storage of Water Outside SWP Contractor Service Areas in 2018 (acre-feet)¹

| Contractor | Contract Status | Storage Provider | To Storage (includes losses, if any) | From Storage | Return By |
|---|------------------------|-------------------------|---|---------------------|------------------|
| Alameda-Zone 7 | | | | | |
| SWPAO #00037 ^a | Continuing | Semitropic | 0 | 0 | 2035 |
| SWPAO #01035 ^a | Continuing | Semitropic | 0 | 0 | 2035 |
| SWPAO #02010 ^a | Continuing | Semitropic | 0 | 0 | 2035 |
| SWPAO #03008 ^a | Continuing | Semitropic | 0 | 0 | 2035 |
| SWPAO #04017 | Continuing | Semitropic | 0 | 0 | 2035 |
| SWPAO #06010 | Continuing | Cawelo | 0 | 0 | 2035 |
| Alameda County | | | | | |
| SWPAO #07005 | Continuing | Semitropic | 0 | 5,000 | 2035 |
| SWPAO #10009 | Continuing | Semitropic | 0 | 0 | 2035 |
| Dudley Ridge | | | | | |
| <i>SWP Water</i> | | | | | |
| SWPAO #08050 | Continuing | Kern Water Bank | 0 | 7,885 | 2035 |
| SWPAO #09002 | Continuing | Semitropic | 0 | 0 | 2035 |
| <i>Non-SWP Water</i> | | | | | |
| SWPAO #09040 ^a | Continuing | Kern Water Bank | 0 | 0 | 2020 |
| SWPAO #03053 | Continuing | Cawelo | 0 | 0 | 2035 |
| Metropolitan | | | | | |
| SWPAO #95010 | Continuing | Semitropic | 0 | 0 | 2035 |
| SWPAO #01013 ^a | Continuing | Arvin-Edison | 21,642 | 16,511 | 2035 |
| SWPAO #03019 | Continuing | Kern Delta | 0 | 0 | 2035 |
| SWPAO #11011 | Continuing | Mojave | 0 | 8,580 | 2035 |
| SWPAO #16006 | Continuing | AVEK | 0 | 0 | 2025 |
| Santa Barbara | | | | | |
| SWPAO #17022 | Continuing | Semitropic | 900 | 0 | 2035 |
| San Bernardino | | | | | |
| SWPAO #11015 | Continuing | Kern Delta | 0 | 0 | 2035 |
| Santa Clara | | | | | |
| <i>SWP Water</i> | | | | | |
| SWPAO #06011 | Continuing | Semitropic | 0 | 0 | 2035 |
| SWPAO #10012 | Continuing | Semitropic | 21,000 | 0 | 2035 |
| <i>Non-SWP Water</i> | | | | | |
| SWPAO #06012 ^a | Continuing | Semitropic | 0 | 0 | 2035 |
| SWPAO #10029 | Continuing | Semitropic | 0 | 0 | 2035 |
| SWPAO #11012 | Continuing | Semitropic | 21,600 | 0 | 2035 |
| Santa Clarita (formal name change, per SWPAO #18006) | | | | | |
| SWPAO #02015 ^a | Continuing | Semitropic | 0 | 0 | 2022 |
| SWPAO #03060 ^a | Continuing | Semitropic | 0 | 0 | 2024 |
| SWPAO #05016 | Continuing | Rosedale-Rio Bravo | 0 | 0 | 2035 |
| SWPAO #16032 | Continuing | Semitropic | 0 | 0 | 2035 |
| Total | | | 65,142 | 37,976 | |

¹ Storage amounts in this table may differ from the amounts in Table 8-6 due to water-type reclassification.^a Indicates amendments to agreement.

Table 8-2 Article 21 Water Deliveries (acre-feet)

| Contractor | Purchased |
|--------------|--------------|
| Napa | 2,180 |
| Total | 2,180 |

store SWP water outside of their respective service areas and carry the water over to the following year for use within their service areas. Qualified contractors can request the carryover of Table A water for delivery in the following year to the extent that such deliveries do not adversely affect current or future project operations. Factors that influence how much extended carryover water can be delivered include operational constraints of project facilities, filling of SWP conservation storage facilities, flood control releases, and water quality restrictions.

If storage requests exceed the available storage capacity, the amount available is allocated among the SWP Contractors requesting storage in proportion to their annual Table A amount for that year.

In 2018, a total to 468,999 af of carryover water was delivered. Twenty-four SWP Contractors took delivery of Article 56(c) water in the amount of 466,636 af of previously approved Table A water, carried over as extended carryover. A total of 2,363 af of SWP Contractors' carryover water was delivered to non-SWP Contractors.

2018 Water Transfers

Due to the below normal hydrologic conditions in 2018, a number of SWP Contractors experienced significant water supply shortages. Three SWP Contractors executed water transfer storage and conveyance agreements with DWR and seventeen non-SWP agencies on the Feather, Yuba, Sacramento, American, and Merced rivers, and within the Delta.

A total of 161,272 af of water was made available to the SWP buyers from a combination of cropland idling, reservoir releases, and groundwater substitution. See Table 8-3 for a list of sellers that provided water for transfer in 2018. A total of 107,146 af of transfer water was delivered to Kern, Dudley Ridge, and Alameda-Zone 7. Carriage water losses of 35 percent were assessed for all transfer water originating in the Sacramento River watershed. A conveyance loss of 10 percent was applied to the transfer from the Merced River. See Table 8-4 for a list of the SWP buyers and the quantities delivered.

Lower Yuba River Accord

For Lower Yuba River Accord background information, see the sidebar, Lower Yuba River Accord.

Component 1, 2, 3, and 4 Water Deliveries

In 2018, the Sacramento Valley Water Year Hydrologic Classification was below normal. The total quantity of Component 1 water was 59,131 af; there was no Component 2 water; Component 3 water was 16,576 af; and Component 4 water was 16,411 af. Yuba also provided a repayment of 869 af of prepaid Component 1 water for water owed dating back to calendar year 2015.

For additional information about the Lower Yuba River Accord, see previous Bulletin 132 editions.

Agreements with Non-SWP Contractors

In addition to negotiating agreements with SWP Contractors to provide for specified water deliveries, DWR also enters into agreements with non-SWP Contractors to provide water conveyance service.

Table 8-3 2018 Water Transfers Seller Activities (acre-feet)

| Sellers | Buyers | SWPAO # | Transfer Action | Transfer Water Available at Point of Transfer ¹ |
|---|------------------------------------|---------|--|--|
| Richvale Irrigation District | Kern and Dudley Ridge ² | 18-718 | cropland idling | 21,420 |
| Western Canal Water District | Kern and Dudley Ridge | 18-719 | cropland idling | 34,122 |
| Biggs-West Gridley Water District | Kern and Dudley Ridge | 18-721 | cropland idling | 20,291 |
| Butte Water District | Kern and Dudley Ridge | 18-700 | cropland idling, groundwater substitution | 19,932 |
| Merced Irrigation District ³ | Kern | 18-717 | reservoir release | 20,000 |
| Foresthill Public Utility District ⁴ | Kern and Dudley Ridge | 18-740 | reservoir release | 809 |
| El Dorado Irrigation District (Weber Reservoir) | Kern and Dudley Ridge | 18-752 | reservoir release | 760 |
| El Dorado Irrigation District (Jenkinson Reservoir) | Kern and Dudley Ridge | 18-753 | reservoir release | 773 |
| Cordua Irrigation District | Kern and Dudley Ridge | 18-701 | groundwater substitution | 7,900 |
| Garden Highway Mutual Water Company | Kern and Dudley Ridge | 18-702 | groundwater substitution | 3,318 |
| Sutter Extension Water District | Kern and Dudley Ridge | 18-704 | groundwater substitution | 3,142 |
| Tule Basin Farms | Kern and Dudley Ridge | 18-705 | groundwater substitution | 2,654 |
| Plumas Mutual Water Company | Kern and Dudley Ridge | 18-724 | groundwater substitution | 5,218 |
| South Sutter Water District | Kern and Dudley Ridge | 18-725 | groundwater substitution | 9,849 |
| Carmichael Water District | Kern and Dudley Ridge | 18-754 | groundwater substitution | 358 |
| San Juan Water District (Citrus Heights Water District, Post-1914 Water Right) | Kern and Dudley Ridge | 18-755 | groundwater substitution | 1,339 |
| San Juan Water District (Fair Oaks Water District, Pre-1914 Water Right) | Kern and Dudley Ridge | 18-756 | groundwater substitution | 1,469 |
| City of Sacramento | Kern and Dudley Ridge | 18-757 | groundwater substitution | 6,918 |
| River Garden Farms | Alameda-Zone 7 | 18-751 | groundwater substitution | 1,000 |
| Total | | | | 161,272 |

¹ After adjustments, streamflow depletion, and conveyance losses unless otherwise noted.² Proportionate share: Kern (95.56 percent) and Dudley Ridge (4.44 percent).³ Merced Irrigation District made available 20,000 af at Merced River at Cressy; however, there was 2,979 acre-feet loss between Merced River at Cressy and Merced River near Stevinson. After 10 percent San Joaquin River conveyance loss, 15,319 [(20,000-2,979)*90 percent] af was available for export.⁴ Foresthill released 932 af for transfer; however, there was a loss of 80.7 af between Sugar Pine Reservoir and American River at North Fork gage. After 5 percent American River conveyance loss, 809 [(932-80.7)*95 percent] acre-feet was made available at the point of transfer.

Reclamation and Cross Valley Canal Contractors

Reclamation supplies CVP water that DWR conveys through the California Aqueduct to Reach 12E or to storage in San Luis Reservoir for County of Fresno, County of Tulare, Hills Valley Irrigation District, Kern-Tulare Water District, Lower Tule River Irrigation District, Pixley Irrigation District, and Tri-Valley Water District (Cross Valley Canal Water Contractors). The contracts between DWR, Reclamation, and Cross Valley Canal Water Contractors have been serially renewed, most recently on March 1, 2018.

Table 8-4 2018 Water Transfer Buyer Activities (acre-feet)

| Buyers | Water Available to Buyer | Carriage Water Losses ¹ | Net Water Delivered |
|----------------|--------------------------|------------------------------------|---------------------|
| Alameda-Zone 7 | 1,000 | 350 | 650 |
| Dudley Ridge | 6,228 | 2,180 | 4,048 |
| Kern | 154,044 | 51,596 | 102,448 |
| Total | 161,272 | 54,126 | 107,146 |

¹ Carriage water losses of 35 percent were applied to all transfers originating in the Sacramento River watershed. A conveyance loss of 10 percent was applied to the transfer from the Merced River.

Lower Yuba River Accord

The Lower Yuba River Accord (Yuba Accord) settled long standing litigation over instream flow issues associated with the operation of the Yuba River Development Project. Operated by the Yuba County Water Agency (Yuba), the Yuba River Development Project's primary purposes are water supply, flood control, power generation, recreation, and environmental protection and enhancement.

The Yuba Accord was developed collaboratively by fisheries, environmental, and agricultural interests and local, State, and federal agencies. It provides a framework for a comprehensive, science-based, consensus-oriented program to protect and enhance 24 miles of the lower Yuba River extending from Englebright Dam downstream to the Yuba River's confluence with the Feather River. The Yuba Accord establishes instream flow requirements to provide sufficient flows in the river for fisheries and to allow Yuba to meet local water needs and transfer water to other users. It provides Yuba with a source of revenue for local activities, including a comprehensive conjunctive use program, flood control improvements, and a lower Yuba River fisheries program. It also improves water supply reliability for the State Water Project (SWP) and Central Valley Project (CVP).

The Yuba Accord is based on three separate but related agreements: a water purchase agreement; a set of conjunctive use agreements; and a fisheries agreement. The agreements were executed in late 2007 and early 2008, and the State Water Resources Control Board approved the Yuba Accord on March 25, 2008.

Fisheries Agreement

The Fisheries Agreement is between DWR, Yuba, the Department of Fish and Wildlife, Friends of the River, South Yuba Citizens League, The Bay Institute, and Trout Unlimited. The U.S. Fish and Wildlife Service and National Marine Fisheries Service participate under the Statement of Support for Proposed Lower Yuba River Fisheries Agreement. The Fisheries Agreement establishes instream flow requirements to benefit salmon, steelhead, and other fish species in the lower Yuba River by improving instream habitat conditions. The agreement also establishes a long-term fisheries monitoring, studies, and enhancement program for the lower Yuba River.

Conjunctive Use Agreements

The conjunctive use agreements between Yuba and its member units establish a comprehensive conjunctive use program that integrates surface water and groundwater supplies with the local irrigation districts and mutual water companies that Yuba serves in Yuba County. Groundwater supplies will help meet local water supply needs in dry years, facilitating Yuba's operation of its storage facilities to meet the instream flow requirements called for in the Fisheries Agreement and commitments of water transfer in the Water Purchase Agreement.

Water Purchase Agreement

The Water Purchase Agreement is between Yuba and DWR. It creates a long-term water transfer program, allowing Yuba River water to be transferred to other users

in California and to provide additional water to offset Sacramento-San Joaquin Delta (Delta) SWP and CVP export reductions for the protection and restoration of Delta fisheries. The Water Purchase Agreement has been amended five times, and 24 agencies have agreed to continue their participation through 2020.

Under the agreement, the range of transfer volumes is segregated into four components, which reflect variations in pricing, purpose of use, and schedule:

Component 1 water includes up to 60,000 af purchased by DWR and Reclamation annually.

Component 2 water includes water that DWR and Reclamation purchase from Yuba—up to 15,000 af in a dry year and up to 30,000 af in a critical year.

Component 3 water includes all storage component water above Components 1 and 2 quantities purchased by DWR and Reclamation.

Component 4 water includes groundwater supplies that Yuba may offer to DWR and Reclamation for purchase.

County of Fresno

On March 1, 2018, DWR, U.S. Bureau of Reclamation, and County of Fresno executed federal contract 14-06-200-8292A-IR17 (SWPAO #18301). SWPAO #18301 renewed federal contract 14-06-200-8292A-IR16 (SWPAO #16304). DWR delivered 14,634 af under SWPAO #18301.

County of Tulare

On March 1, 2018, DWR, Reclamation, and County of Tulare executed federal contract 14-06-200-8293A-IR17 (SWPAO #18302). SWPAO #18302 renewed federal Contract 14-06-200-8293-IR16 (SWPAO #16305). DWR delivered 2,654 af under SWPAO #18302.

Hills Valley Irrigation District

On March 1, 2018, DWR, Reclamation, and Hills Valley Irrigation District executed federal contract 14-06-200-8466A-IR17 (SWPAO #18303). SWPAO #18303 renewed

federal contract 14-06-200-8466A-IR16 (SWPAO #16306). DWR delivered 1,673 af under SWPAO #18303.

Kern-Tulare Water District

On March 1, 2018, DWR, Reclamation, and Kern-Tulare Water District executed federal contract 14-06-200-8601A-IR17 (SWPAO #18304). SWPAO #18304 renewed federal contract 14-06-200-8601A-IR16 (SWPAO #16307). On July 16, 2018, DWR executed a letter agreement adding Reaches 9 through 13B of the California Aqueduct as points of delivery to SWPAO #18304 for up to 56,700 af of 2018-2019 CVP water (SWPAO #18309). DWR delivered 4,251 af under SWPAO #18304 and 6,948 af under SWPAO #18309.

Kern-Tulare Water District/Rag Gulch Water District

On January 1, 2009, Rag Gulch Water District merged into Kern-Tulare Water District. The

Rag Gulch Water District's contracts remain separate from Kern-Tulare Water District's original agreement. Kern-Tulare Water District is responsible for the former Rag Gulch Water District agreements.

On March 1, 2018, DWR, Reclamation, and Kern-Tulare Water District executed federal contract 14-06-200-8367A-IR17. SWPAO #18307 renewed federal contract 14-06-200-8367A-IR16 (SWPAO #16310). On July 16, 2018, DWR executed a letter agreement with Kern-Tulare Water District to add Reaches 9 through 13B of the California Aqueduct as points of delivery to SWPAO #18307 to allow for conveyance of up to 13,300 af of 2018–2019 CVP water (SWPAO #18310). DWR delivered 5,000 af under SWPAO #18307.

Lower Tule River Irrigation District

On March 1, 2018, DWR, Reclamation, and Lower Tule River Irrigation District executed federal contract 14-06-200-8237A-IR17 (SWPAO #18305). SWPAO #18305 renewed federal contract 14-06-200-8237A-IR16. DWR delivered 22,055 af under SWPAO #18305.

Pixley Irrigation District

On March 1, 2018, DWR, Reclamation, and Pixley Irrigation District executed federal contract 14-06-200-8238A-IR17 (SWPAO #18306). SWPAO #18306 renewed federal contract 14-06-200-8238A-IR16 (SPWAO #16309). DWR delivered 15,551 af under this agreement. (SWPAO #18306)

Tri Valley Water District

On March 1, 2018, DWR, Reclamation, and Tri Valley Irrigation District executed federal contract 14-06-200-8565A-IR17 (SWPAO #18308). SWPAO #18308 renewed federal contract 14-06-200-8238A-IR16 (SPWAO #16311). DWR delivered 571 af under SWPAO #18308.

Reclamation—Joint Point of Diversion

On March 1, 2018, DWR executed a joint point of diversion agreement (SWPAO #18300) with Reclamation. Under this agreement, DWR makes excess SWP conveyance capacity available to Reclamation for the conveyance of water from the Delta at Banks Pumping Plant. This includes: (1) making up for curtailed water exports from Jones Pumping Plant associated with improving conditions for fish in the Delta; (2) replacing water exports foregone during maintenance and repair of CVP facilities between the Delta and O'Neill Forebay; and (3) conveying Reclamation's share of Component 1 water provided under the Yuba Accord. As part of the joint point of diversion agreement, the first 21,000 af conveyed through Banks Pumping Plant include a charge for the temporary barriers in the Delta.

In 2018, DWR pumped 33,122 af of CVP water at Banks Pumping Plant. After applying a 2 percent deduction for contract conveyance losses, DWR conveyed 32,460 af of CVP water to O'Neill Forebay.

Reclamation and Kern National Wildlife Refuge—U.S. Fish and Wildlife Service

A letter agreement sent by DWR on September 17, 2012, and accepted by Reclamation on September 21, 2012, provided for DWR to deliver up to 30,500 af of CVP water to the Kern National Wildlife Refuge from June 1, 2012, through September 30, 2028. Under this agreement, DWR conveys CVP water from the end of Reach 7 of the California Aqueduct to Buena Vista Water Storage District's turnouts in Reaches 10A and 12E. DWR conveyed a total of 27,678 af during 2018 (SWPAO #12309). DWR waived the temporary barrier surcharge for 2018 conveyance without setting a precedent for future conveyances.

Reclamation and San Joaquin Valley National Cemetery—U.S. Department of Veterans Affairs

A pending letter agreement among DWR, Reclamation, and the U.S. Department of Veterans Affairs provides for the conveyance of up to 850 af of CVP water to Reach 2B of the California Aqueduct for the U.S. Department of Veterans Affairs' San Joaquin Valley National Cemetery. DWR delivered a total of 531 af to the national cemetery through Reach 2B of the California Aqueduct in 2018 under this pending agreement. (SWPAO #10310)

Reclamation and Byron Bethany Irrigation District—Musco Family Olive Company

A pending agreement among DWR, Byron Bethany Irrigation District (Byron Bethany), and Reclamation provides for the conveyance of up to 800 af of Byron Bethany's CVP water to repayment Reach 2A of the California Aqueduct for use by Musco Family Olive Company. DWR delivered a total of 492 af in 2018 under this pending agreement. (SWPAO #04300)

Delta Settlement Agreements

DWR negotiated contracts with various Delta agencies to settle adverse impact claims by the agencies against DWR due to operation of the SWP. Water deliveries to these agencies in 2018 are reported in the sections covering deliveries to non-SWP Contractors later in this chapter.

City of Antioch

DWR and the City of Antioch executed an agreement on April 11, 1968, that requires DWR to reimburse the City of Antioch for decreases in usable San Joaquin River water availability caused by operation of the SWP. The agreement was amended October 29, 2013, to update boundaries and clarify measurement definitions. DWR reimburses

the City of Antioch for the purchase of substitute water when the number of usable days, as defined by the contract, is below 208. Credits for the number of usable days above 208 in this same period accrue to offset the water-day deficiencies in future years.

In 2018, DWR determined that 133 usable days were available to the City of Antioch under the contract. This resulted in 75 days needing to be reimbursed. DWR used 38 days of carryover credit from the previous year to offset water-day deficiency. This resulted in 37 days needing to be reimbursed, DWR reimbursed the City of Antioch \$381,876.71 for the purchase of substitute water.

Contra Costa Water District

DWR and Contra Costa Water District (Contra Costa) executed an agreement on April 21, 1967, that requires DWR to reimburse Contra Costa for decreases in availability of usable river water in Mallard Slough caused by operation of the SWP. DWR reimburses Contra Costa for the purchase of substitute water when the number of usable days, as defined by the contract, is below 142. Credits for the number of usable days above 142 in this same period accrue to offset the water-day deficiencies in future years.

In 2018, DWR determined that 38 usable days were available to Contra Costa under the contract. This resulted in 104 days of unadjusted deficiency. Using 46 days of carryover credit from previous year resulted in 58 days of adjusted deficiency. DWR reimbursed Contra Costa Water District \$146,232 for contract deficiencies.

East Contra Costa Irrigation District

DWR and East Contra Costa Irrigation District (East Contra Costa) executed an agreement on January 7, 1981, that requires East Contra Costa to make payments to DWR for the assurance of adequate water supply and specific water quality from Delta channels.

An agreement between DWR, East Contra Costa, and Contra Costa, executed April 11, 1991, allows for intake at Rock Slough on Contra Costa Canal by Contra Costa to treat water for municipal and industrial users within East Contra Costa's service area. It was amended February 7, 2000, to allow diversions under both contracts at the Rock Slough intake of the Contra Costa Canal and the Los Vaqueros Reservoir intake at Old River.

East Contra Costa paid DWR \$47,681 for the assurance of adequate water supply and specific water quality in 2018.

North Delta Water Agency

North Delta Water Agency's (North Delta) agreement with DWR, executed January 28, 1981, requires North Delta to make payments to DWR for the assurance of adequate water supply and specific water quality from Delta channels. An amendment signed on January 21, 1997, changed the monitoring station at Emmaton to Three Mile Slough and reduced North Delta's payments in lieu of assessments on land DWR owns within North Delta's jurisdiction. A memorandum of understanding was executed on May 26, 1998, to establish the joint position with respect to implementation of water quality objectives contained in the 1995 Bay-Delta water quality control plan.

An agreement executed on May 21, 2008, resolved a lawsuit regarding the assessment of Department of Fish and Wildlife's (DFW) land within North Delta boundaries. Under this agreement DWR agreed to reimburse North Delta for lands owned by DFW within North Delta's boundaries. The 2008 agreement expired May 4, 2011. Effective 2017, DFW will directly pay North Delta for the assessment of DFW lands. DWR invoiced North Delta \$617,836 for the assurance of adequate water supply and specific water quality in 2018.

Del Puerto

An agreement among DWR, Reclamation, Del Puerto, and Oak Flat, pending execution, provided for the exchange of up to 2,000 af of Del Puerto's CVP water for an equivalent amount of Oak Flat's 2018 and/or 2019 Table A water through July 1, 2019. DWR will deliver up to 2,000 af of Oak Flat's Table A water to Oak Flat's turnout(s) located on the California Aqueduct for use by Del Puerto in Del Puerto's service area. In exchange, Reclamation will make an equivalent amount of Del Puerto's CVP water available to DWR at O'Neill Forebay. DWR filed a petition with the State Water Board, and received a one-year approval order, effective July 2, 2018, for the consolidation of SWP and CVP places of use. During 2018, a total of 205 af of water was delivered to Oak Flat's turnout(s). (SWPAO #18021)

An agreement among DWR, Reclamation, Del Puerto, and Oak Flat, executed on November 21, 2017, approved the exchange of up to 2,000 af of Del Puerto's CVP water for an equivalent amount of Oak Flat's SWP water through June 7, 2018. DWR would deliver up to 2,000 af of Oak Flat's SWP water to Oak Flat's turnout(s) located on the California Aqueduct for use by Del Puerto in Del Puerto's service area. In exchange, Reclamation would make an equivalent amount of Del Puerto's CVP water available to DWR at O'Neill Forebay. DWR filed a petition with the State Water Board and received a one-year approval order, effective June 8, 2017, for the consolidation of SWP and CVP places of use. During 2018, a total of 206 af of water was delivered to Oak Flat's turnout(s). (SWPAO #17012)

Oakdale Irrigation District/San Luis & Delta-Mendota Water Authority/ South San Joaquin Irrigation District

An agreement among DWR, Oakdale Irrigation District, San Luis & Delta-Mendota Water Authority, and South San Joaquin

Irrigation District, executed April 27, 2018, allowed DWR and San Luis & Delta-Mendota Water authority to purchase up to 10,000 af of water made available to Reclamation at Goodwin Dam by Oakdale Irrigation District and South A Joaquin Irrigation District. The water released from Goodwin Dam will assist Reclamation in meeting the April–May pulse flow objectives in the 2006 State Water Board Water Quality Control Plan for the Bay-Delta. (SWPAO #18017)

Water Deliveries

The SWP delivers water for a variety of beneficial uses. In addition to delivering Table A water to SWP Contractors, the SWP

- conveys water to other public and local agencies through special contracts and agreements;
- provides water for wildlife and recreational uses; and
- stores, releases, and delivers local runoff water from SWP facilities to agencies that hold local water rights.

Summary of 2018 Water Deliveries

In 2018, a total of 3,166,275 af of SWP and non-SWP water was delivered to 29 SWP Contractors and 21 non-SWP agencies. The SWP portion totaled 1,990,286 af, and the non-SWP portion totaled 1,175,989 af.

Figure 8-1 shows amounts of water delivered to various locations during 2018.

SWP

DWR conveys SWP water as defined in the SWP Water Supply Contracts. SWP water includes current year Table A water, transfer and exchange of Table A water, carryover of Table A water, Turn-Back Pools A and B water, Multiyear Water Pool Program water, and Article 21 water.

The 1,990,286 af delivered to SWP Contractors was categorized as follows:

- 980,200 af of Table A water
- 116,463 af of transfers and exchanges of Table A water among SWP Contractors
- no delivery under Turn-Back Water Pool Program and Multiyear Water Pool Program water
- 466,636 af of 2018 carryover water
- 2,180 af of Article 21 water
- 113,657 af of water bank recovery
- 9,186 af of delivery of backup water
- 2,997 af of settlement water
- 35,280 af of 2018 Yuba Accord Dry Year Purchase Program water
- 3,159 af of local water
- 17,191 af of permit water
- 237,682 af of other non-SWP programs

Non-SWP

DWR conveys non-SWP water to various non-SWP Contractors according to the terms of water rights and water transfer and exchange agreements. Non-SWP water may include contracted supply; water bank recovery water; local water; recreation water; fish and wildlife enhancement water; water delivered to Cross Valley Canal contractors, Reclamation, and Delta agencies; and annual contracts.

The 1,175,989 af portion delivered to 26 non-SWP agencies was categorized accordingly:

- 879 af of short-term transfer agreements
- No delivery under Article 21 transfer
- 27,097 af other non-SWP programs
- 996,330 af of regulated delivery of local supply
- 6 af for parks and recreation
- 447 af for fish and wildlife
- 122,529 af for Cross Valley Canal Contractors
- 27,678 af for Kern National Wildlife Refuge
- 1,023 af for annual contracts



Figure 8-1 Water Delivered in 2018 and Delivery Locations of SWP Contractors and Feather River Area Districts with Water Rights Agreements with DWR

Allocation of Table A Water

Each year, by October 1, SWP Contractors submit initial requests for Table A water deliveries allocated to them for use in the subsequent calendar year. Initial Table A allocation amounts for the coming year are made by DWR in December. The Table A allocations are based on operations studies that assume 90 percent exceedance of historical water supply (where exceedance refers to the possibility that water supply in the coming year will be less than the historical average annual water supply), current reservoir storage, and total requests by the SWP Contractors. Forecasts for the year are updated as hydrologic conditions change. Table A amounts are increased or decreased depending on both actual and projected hydrologic conditions, though decreases are rare as the 90 percent exceedance criterion is fairly conservative.

On October 1, 2017, SWP Contractors submitted initial requests for 2018 totaling 4.17 million acre-feet (maf).

DWR approved delivery of 0.63 maf on November 29, 2017, resulting in initial Table A amounts of 15 percent of SWP Contractor requests. DWR increased the 2018 Table A amounts to 1.46 maf, for a final allocation of 35 percent, on May 21, 2018.

Table 8-5 lists the changes in Table A amounts that were approved by DWR based on updated hydrologic conditions.

Specific Water Delivery Information

Specific information about water deliveries made to SWP Contractors and other agencies during 2018, and historical deliveries from 1962 through 2018, is presented in the following four sections, each with a corresponding table located at the end of the chapter.

Please note that the water delivery figures listed in the tables are accurate at the

Table 8-5 2018 Allocated Table A Amounts

| Notice to SWP Contractors No. | Allocation Amount (maf) | Percentage of Requested Water |
|-------------------------------|-------------------------|-------------------------------|
| 17-10 | 0.63 | 15 |
| 18-02 | 0.83 | 20 |
| 18-05 | 1.46 | 35 |

time of this Bulletin 132 publication, but small volumes of water may be reclassified over time pursuant to SWP Water Supply Contract provisions. If your research requires more current data than was available at the time of publication, please consult the most recent edition of Bulletin 132 and/or contact DWR staff in the State Water Project Analysis Office.

Water Delivered to SWP Contractors in 2018 by Service Area

Table 8-6 shows SWP water delivered in 2018 by service area. The following information is arranged by column number.

Columns 1 through 5 show a detailed breakdown of Table A water delivered to SWP Contractors in 2018. (The amounts also include SWP water that was delivered to non-SWP Contractors.)

Column 3 shows no water delivered under the Water Pool Program in 2018.

Column 4 shows 468,999 af was carried over from previous years for delivery in 2018. The carryover water included deliveries to non-SWP agencies.

The carryover program was designed to encourage the most effective and beneficial use of water and to avoid obligating SWP Contractors to use or lose water by December 31 of each year. The SWP Contractors' Water Supply Contracts and amendments state the criteria for carrying over Table A water from one year to the next under Articles 12(e), 14(b), and 56(c).

Column 5 shows all Table A water delivered in 2018—a total of 1,568,954 af.

Column 6 shows Article 21 water delivered to SWP Contractors. In 2018, 2,180 af of Article 21 water was delivered.

Column 7 shows zero af of other SWP water. Other SWP water consists of settlement water delivered to Solano.

Column 8 shows a total of 1,571,134 af of SWP water was delivered in 2018. This includes total Table A water not transferred, exchanged or stored; Table A water transferred or exchanged; Multiyear Water Pool Program water; carryover; and other SWP water consisting of settlement water.

Columns 9, 10, and 11 include deliveries of non-SWP water to SWP Contractors. Column 9 shows delivery of 9,186 af of backup water, Column 10 shows 113,657 af of water bank recovery, and Column 11 shows 296,309 af of other non-SWP water. Other non-SWP water is local and permit water that an SWP Contractor has a water right to, or has purchased from, exchanged with, or transferred from non-SWP agencies.

Column 12 shows total amounts of water delivered to SWP Contractors. In 2018, the SWP delivered 1,990,286 af of water to the 29 SWP Contractors.

Water Delivered in 2018 by Month

Table 8-7 shows water delivery amounts by month. During 2018, the SWP provided water service to 55 agencies, including 29 SWP Contractors. The following discussion summarizes the SWP and non-SWP water deliveries.

SWP Water. SWP water, as defined in the SWP Water Supply Contracts, includes Article 21 water, carryover Table A water, current year Table A amounts, transfer and exchange of Table A water, and Turn-

Back Pools A and B. Detailed information concerning those conveyances for 2018 is found under the “Miscellaneous Agreements with SWP Contractors” section in this chapter’s preceding pages or is listed below.

Deliveries in the North Bay area included 500 af of Vallejo permit water delivered to Solano.

In the South Bay area, a total of 2,896 af of local water was delivered to Alameda-Zone 7 and Alameda County. These two South Bay Aqueduct SWP Contractors hold water rights to runoff from the Lake Del Valle watershed.

In the Southern California area, 250 af of local runoff from the Houston Creek watershed was stored and delivered to Crestline under water rights held by DWR on Houston Creek. The authorized place of use is limited to the Crestline area.

Non-SWP Water. In 2018, DWR used SWP facilities to convey non-SWP water for various non-SWP agencies according to the terms of water rights and water transfer and exchange agreements. Detailed information concerning those deliveries is in this chapter.

Last Chance Creek Water District. Under the water supply agreement between DWR and Last Chance Creek Water District, a total of 10,963 af was supplied from Frenchman Lake to Last Chance Creek Water District.

Water Rights Water. Water in this category is transported through SWP facilities to agencies with settlement agreements with DWR. Some water passes through SWP transportation facilities; some is stored in SWP reservoirs for release later. In 2018, the following water was delivered to the Feather River, North Bay, South Bay, Delta, and Southern California areas, as summarized below.

Seven non-SWP Contractors in the Feather River Area received 963,264 af, under

their water right settlement agreements, as follows:

- Garden Highway Mutual Water Company, 13,692 af
- Joint Water Districts Board, 650,179 af
- Oswald Water District, 1,857 af
- Plumas Mutual Water Company, 4,827 af
- Tudor Mutual Water Company, 2,318 af
- Western Canal Water District, 289,900 af
- Valberde and Ramelli, 491 af

DWR conveyed local water totaling 5,462 af through SWP facilities on behalf of two non-SWP agencies:

- Thermalito Water and Sewer District (formerly Thermalito Irrigation District) 1,617 af
- South Feather Water and Power Agency (formerly Oroville-Wyandotte Irrigation District), 3,845 af

Delta. In the Delta, 16,641 af of water was delivered to Byron Bethany pursuant to the May 28, 2003, *Agreement Between the Department of Water Resources of the State of California and the Byron-Bethany Irrigation District Regarding the Diversion of Water from the Delta*.

Annual Table A Water and Water Conveyed by Type Since 1962

Table 8-8 shows information on annual Table A water and water conveyed, by type, for the previous 57 years. The following discussion is arranged according to column numbers.

Annual Table A Water. Columns 1 through 7 show the amount of SWP Contractors' annual maximum Table A water by area for years 1962 through 2018 as specified in the Table A schedules of the SWP Water Supply Contracts.

In some instances, Table A schedules—projections of each contractor's need for water to 2035—have been amended to meet the needs of individual contractors. The amounts of annual Table A water each SWP Contractor may request for years 1962 through 2035 can be found in Table B-4 of Appendix B in the back of this bulletin.

Water Delivered. Columns 8 through 16 show water delivered or conveyed, including initial fill water and operational losses and storage changes.

Table A Water. Column 8 shows amounts of Table A water delivered each year from 1962 through 2018. In 2018, a total of 1,568,954 af of Table A water was delivered.

Article 21 and Unscheduled Water. Column 9 shows amounts of Article 21 water, as defined under SWP deliveries, and unscheduled water delivered from 1962 through 2018. Article 21 and unscheduled water are water in excess of that required to meet all demands for the year's Table A water and water to be stored in SWP reservoirs. In 2018, a total of 2,180 af of Article 21 or unscheduled water was delivered.

Other Water. Column 10 includes amounts of water classified as other water delivered in 2018, including non-SWP water conveyed through SWP facilities and regulated delivery of local supply. In 2018, a total of 614,573 af of other water was delivered.

Feather River Diversions. Column 11 includes amounts of water from the Feather River delivered according to agreements with non-SWP Contractors on the Feather River, including Last Chance Creek Water District. In 2018, a total of 979,689 af was delivered to agencies in the Feather River area.

Recreation and Fish and Wildlife Water. Column 12 shows water conveyed for recreational use or to improve water quality

for fish and wildlife. In 2018, a total of 879 af of SWP water was conveyed for this purpose.

Initial Fill Water. The quantities listed in Column 14 represent the amounts used to initially fill the aqueducts and reservoirs south of the Delta to maximum operating capacities. Initial filling began in 1962, with the filling of the South Bay Aqueduct, and was completed in 1979, when Lake Perris reached its maximum operating capacity of 127,000 af. In 1996 and 1997, the Coastal Aqueduct was initially filled.

Operational Losses. Column 15 includes the total amounts of water lost through evaporation and seepage, net storage changes in reservoirs south of the Delta, and amounts of inflow from local drainage areas, including inflows into San Luis Canal and from the Kern River Intertie. Negative values are indicated for years when withdrawals and evaporation from reservoirs south of the Delta exceed the amounts of water added to the reservoirs.

SWP Water Delivered Since 1962

Table 8-9 shows SWP water delivered by category from 1962 to 2018. Table A Water. Column 8 shows amounts of Table A water delivered each year from 1962 through 2018. In 2018, a total of 1,568,954 af of Table A water was delivered.

Table 8-6 Water Delivered to SWP Contractors in 2018, by Service Area (acre-feet)^{1,2}

| Service Area and SWP Contractor | Table A Water Deliveries | | | | | SWP Water | | | Non-SWP Water | | |
|---------------------------------|--|---|------------------------------|---------------------|-------------------|---------------------|---------------------|---------------------|------------------------------|--------------------------|--------------------------|
| | 2018 Table A Not Transferred, Exchanged, or Stored [1] | 2018 Table A Transferred or Exchanged [2] | 2018 Water Pool Programs [3] | Carryover Water [4] | Total Table A [5] | 2018 Article 21 [6] | Other SWP Water [7] | Total SWP Water [8] | Delivery of Backup Water [9] | Water Bank Recovery [10] | Other Non-SWP Water [11] |
| Feather River | | | | | | | | | | | |
| Butte | 194 | 9,031 | - | - | 9,225 | - | - | 9,225 | - | - | 2,835 |
| Plumas | 508 | - | - | - | 508 | - | - | 508 | - | - | 508 |
| Yuba City | - | - | - | 1,715 | 1,715 | - | - | 1,715 | - | - | 1,715 |
| North Bay | | | | | | | | | | | |
| Napa | 3,737 | 6,422 | - | 5,243 | 15,402 | 2,180 | - | 17,582 | - | - | 500 |
| Solano | 3,757 | 9,000 | - | 11,627 | 24,384 | - | - | 24,384 | - | - | 19,688 |
| South Bay | | | | | | | | | | | |
| Alameda-Zone 7 | 21,170 | - | - | 15,739 | 36,909 | - | - | 36,909 | - | - | 4,370 |
| Alameda County | 4,721 | - | - | 8,440 | 13,161 | - | - | 13,161 | - | - | 1,140 |
| Santa Clara | 15,729 | 10,568 | - | 56,221 | 82,518 | - | - | 82,518 | - | - | 33,718 |
| San Joaquin Valley | | | | | | | | | | | |
| Oak Flat | 302 | - | - | 1,987 | 2,289 | - | - | 2,289 | - | - | - |
| Kings | 1,238 | 46 | - | 2,363 | 3,647 | - | - | 3,647 | - | - | 66 |
| Dudley Ridge | - | 13,621 | - | 7,415 | 21,036 | - | - | 21,036 | 7,885 | - | 2,726 |
| Empire | - | 736 | - | 852 | 1,591 | - | - | 1,591 | - | - | 1,591 |
| Kern | 209,207 | 735 | - | 74,382 | 284,324 | - | - | 284,324 | 1,301 | 88,802 | 173,234 |
| Tulare | 7,208 | 3,110 | - | 23,555 | 33,873 | - | - | 33,873 | - | - | 17,578 |
| Central Coastal | | | | | | | | | | | |
| San Luis Obispo | 2,427 | - | - | 11,300 | 2,427 | - | - | 2,427 | - | - | 2,427 |
| Santa Barbara | 10,515 | 900 | - | 11,300 | 22,715 | - | - | 22,715 | - | - | 22,715 |
| Southern California | | | | | | | | | | | |
| AVEK | 19,526 | 20,889 | - | 26,121 | 66,536 | - | - | 66,536 | - | - | - |
| Coachella | 48,423 | - | - | 69,175 | 117,598 | - | - | 117,598 | - | 3,344 | 18,147 |
| Crestline | 199 | - | - | 735 | 934 | - | - | 934 | - | - | 250 |
| Desert | 19,513 | - | - | 27,875 | 47,388 | - | - | 47,388 | - | - | 358 |
| Littlerock | - | 805 | - | - | 805 | - | - | 805 | - | - | - |
| Metropolitan | 562,019 | 16,805 | - | 61,561 | 640,385 | - | - | 640,385 | - | 16,511 | 13,742 |
| Nojave | - | 14,213 | - | 5,471 | 19,684 | - | - | 19,684 | - | - | 13 |
| Palmdale | 1,762 | 5,375 | - | 4,828 | 11,965 | - | - | 11,965 | - | - | 120 |
| San Bernardino | 23,334 | 496 | - | 17,605 | 41,435 | - | - | 41,435 | - | - | 41,435 |
| San Gabriel | 10,080 | - | - | 6,975 | 17,055 | - | - | 17,055 | - | - | 17,055 |
| San Gorgonio | 2,158 | - | - | 3,390 | 5,548 | - | - | 5,548 | - | - | 1,324 |
| Santa Clarita | 12,473 | - | - | 24,424 | 36,897 | - | - | 36,897 | - | - | 6,000 |
| Ventura | - | 7,000 | - | - | 7,000 | - | - | 7,000 | - | - | 7,000 |
| Total | 980,200 | 119,755 | - | 463,999 | 1,568,954 | 2,180 | - | 1,571,134 | 9,186 | 113,657 | 296,309 |
| | | | | | | | | | | | 1,990,286 |

¹ Please note that the water delivery figures listed are accurate at the time of this Bulletin 132 publication, but small volumes of water may be reclassified over time pursuant to long-term water supply contract provisions. If your research requires more current data than was available at the time of publication, please consult the most recent publication of Bulletin 132 and/or contact DWR staff in the State Water Project Analysis Office.

² This table includes SWP water that was delivered to non-SWP contractors. Transfers and exchanges shown in Column 2 include SWP water deliveries to non-SWP contractors.

Table 8-7 Total Amounts of Water Delivered in 2018, by Month (acre-feet)

| Contracting Agency and Type of Service | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total Deliveries |
|---|--------|-----|-----|-----|--------|--------|---------|--------|--------|--------|--------|--------|------------------|
| FEATHER RIVER AREA | | | | | | | | | | | | | |
| <i>SWP Agencies</i> | | | | | | | | | | | | | |
| City of Yuba City | 0 | 0 | 0 | 0 | 0 | 0 | 922 | 793 | 0 | 0 | 0 | 0 | 1,715 |
| Carryover | 0 | 0 | 0 | 0 | 0 | 0 | 922 | 793 | 0 | 0 | 0 | 0 | 1,715 |
| Yuba Total | 0 | 0 | 0 | 0 | 0 | 0 | 922 | 793 | 0 | 0 | 0 | 0 | 1,715 |
| County of Butte | | | | | | | | | | | | | |
| Table A | 4 | 7 | 3 | 8 | 18 | 23 | 33 | 29 | 26 | 20 | 18 | 5 | 194 |
| Table A Transferred to Others* | 206 | 264 | 17 | 58 | 247 | 260 | 1,010 | 1,130 | 5,795 | 44 | 0 | 0 | 9,031 |
| Non-SWP Water | 110 | 118 | 105 | 150 | 219 | 275 | 371 | 480 | 367 | 298 | 197 | 145 | 2,835 |
| Butte Total (*excluded from total) | 114 | 125 | 108 | 158 | 237 | 298 | 404 | 509 | 393 | 318 | 215 | 150 | 3,029 |
| Plumas County Flood Control and Water Conservation District | | | | | | | | | | | | | |
| Table A | 3 | 1 | 12 | 1 | 47 | 75 | 108 | 129 | 101 | 31 | 0 | 0 | 508 |
| Plumas Total | 3 | 1 | 12 | 1 | 47 | 75 | 108 | 129 | 101 | 31 | 0 | 0 | 508 |
| <i>Non-SWP Contractors</i> | | | | | | | | | | | | | |
| Garden Highway Mutual Water Company | | | | | | | | | | | | | |
| Regulated delivery of local supply | 0 | 0 | 58 | 465 | 2,724 | 2,259 | 2,945 | 1,462 | 853 | 2,926 | 0 | 0 | 13,682 |
| Joint Water Districts Board | | | | | | | | | | | | | |
| Regulated delivery of local supply | 26,470 | 0 | 0 | 71 | 96,256 | 95,135 | 113,477 | 95,170 | 36,620 | 55,590 | 75,830 | 55,560 | 650,179 |
| Last Chance Creek Water District | | | | | | | | | | | | | |
| Regulated delivery of local supply | 0 | 0 | 0 | 0 | 0 | 1,456 | 2,569 | 3,693 | 2,216 | 738 | 107 | 184 | 10,963 |
| Oswald Water District | | | | | | | | | | | | | |
| Regulated delivery of local supply | 0 | 0 | 80 | 32 | 49 | 626 | 386 | 266 | 196 | 155 | 67 | 0 | 1,857 |
| Plumas Mutual Water Company | | | | | | | | | | | | | |
| Regulated delivery of local supply | 0 | 0 | 0 | 174 | 1,681 | 1,192 | 333 | 124 | 313 | 825 | 185 | 0 | 4,827 |
| South Feather Water and Power Agency | | | | | | | | | | | | | |
| Regulated delivery of local supply | 0 | 0 | 0 | 87 | 231 | 157 | 861 | 861 | 837 | 478 | 207 | 126 | 3,845 |
| Thermalito Water and Sewer District | | | | | | | | | | | | | |
| Regulated delivery of local supply | 32 | 61 | 99 | 98 | 215 | 257 | 282 | 268 | 252 | 53 | 0 | 0 | 2,318 |
| Tudor Mutual Water Company | | | | | | | | | | | | | |
| Regulated delivery of local supply | 0 | 0 | 4 | 2 | 68 | 494 | 732 | 455 | 562 | 1 | 0 | 0 | 2,318 |

Table 8-7 Total Amounts of Water Delivered in 2018, by Month (acre-feet)

| Contracting Agency and Type of Service | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total Deliveries |
|--|--------|---------------|--------------|--------------|--------------|----------------|----------------|----------------|----------------|---------------|---------------|----------------|---------------|------------------|
| Western Canal Water District | | 8,880 | 0 | 0 | 922 | 46,875 | 44,518 | 57,919 | 36,468 | 8,520 | 30,420 | 41,045 | 14,333 | 289,900 |
| Regulated delivery of local supply | | | | | | | | | | | | | | 491 |
| Valberde and Ramelli | | | | | | | | | | | | | | 2,417 |
| Regulated delivery of local supply | | 0 | 0 | 0 | 0 | 7 | 92 | 100 | 101 | 116 | 75 | 0 | 0 | 491 |
| SWP | 7 | 8 | 15 | 9 | 65 | 98 | 1,063 | 951 | 127 | 51 | 18 | 5 | | 2,417 |
| | 35,492 | 179 | 346 | 2,001 | 148,325 | 146,461 | 179,975 | 139,348 | 50,852 | 91,559 | 117,638 | 70,348 | | 982,524 |
| Feather River Area Total | | 35,499 | 187 | 361 | 2,010 | 148,390 | 146,559 | 181,038 | 140,299 | 50,979 | 91,610 | 117,656 | 70,353 | 984,941 |
| NORTH BAY AREA | | | | | | | | | | | | | | |
| SWP Agencies | | | | | | | | | | | | | | |
| Napa County Flood Control and Water Conservation District | | | | | | | | | | | | | | |
| Table A | 0 | 548 | 15 | 0 | 266 | 1,265 | 1,363 | 279 | 1 | 0 | 0 | 0 | 0 | 3,737 |
| | 0 | 0 | 0 | 0 | 1 | 4 | 2 | 5 | 5 | 6,405 | 0 | 0 | 0 | 6,422 |
| Table A Transferred to Others* | | | | | | | | | | | | | | |
| Article 21 | 912 | 355 | 0 | 261 | 652 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,180 |
| | 0 | 0 | 445 | 0 | 0 | 0 | 0 | 0 | 1,027 | 1,112 | 996 | 886 | 777 | 5,243 |
| Carryover Water | | | | | | | | | | | | | | |
| Non-SWP Water Transferred from Others | | | | | | | | | | | | | | |
| Non-SWP Water Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 100 | 150 | 150 | 500 |
| | 912 | 903 | 460 | 261 | 918 | 1,265 | 1,363 | 1,306 | 1,213 | 1,096 | 1,036 | 927 | 927 | 11,660 |
| Napa Total (*excluded from total) | | | | | | | | | | | | | | |
| Solano County Water Agency | | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 0 | 555 | 639 | 322 | 831 | 344 | 942 | 124 | 124 | 3,757 |
| | 0 | 0 | 0 | 0 | 1 | 4 | 2 | 5 | 5 | 5 | 0 | 0 | 0 | 22 |
| Table A Transferred from Others | | | | | | | | | | | | | | |
| Table A Transferred to Others* | | | | | | | | | | | | | | |
| Carryover | 0 | 621 | 0 | 0 | 426 | 2,094 | 1,731 | 1,604 | 1,497 | 1,399 | 1,386 | 869 | 869 | 11,627 |
| | 1,587 | 1,754 | 963 | 0 | 3,092 | 1,876 | 1,938 | 1,938 | 1,776 | 1,838 | 1,726 | 1,200 | 1,200 | 19,688 |
| Non-SWP Water | | | | | | | | | | | | | | |
| Non-SWP Water Transferred to Others* | | | | | | | | | | | | | | |
| Non-SWP Water Transferred to Others* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 150 | 150 | 400 |
| | 1,587 | 2,375 | 963 | 0 | 3,519 | 4,529 | 4,310 | 3,869 | 4,109 | 3,586 | 4,054 | 2,193 | 2,193 | 35,094 |
| Solano Total (*excluded from total) | | | | | | | | | | | | | | |
| SWP | 912 | 1,524 | 460 | 261 | 1,345 | 3,918 | 3,735 | 3,237 | 3,446 | 2,744 | 3,214 | 1,770 | 1,770 | 26,566 |
| | 1,587 | 1,754 | 938 | 0 | 3,092 | 1,876 | 1,938 | 1,938 | 1,876 | 1,938 | 1,876 | 1,350 | 1,350 | 20,188 |
| North Bay Area Total | | 2,499 | 3,278 | 1,423 | 261 | 5,794 | 5,673 | 5,175 | 5,322 | 4,682 | 5,090 | 3,120 | 46,754 | |
| SOUTH BAY AREA | | | | | | | | | | | | | | |
| SWP Agencies | | | | | | | | | | | | | | |
| Alameda County Flood Control and Water Conservation District, Zone 7 | | | | | | | | | | | | | | |
| Table A | 76 | 245 | 232 | 179 | 1,130 | 4,549 | 1,747 | 1,715 | 3,656 | 3,546 | 2,534 | 1,561 | 1,561 | 21,170 |
| | 2,022 | 1,454 | 1,669 | 1,911 | 3,032 | 0 | 1,115 | 3,924 | 612 | 0 | 0 | 0 | 0 | 15,739 |
| Carryover | 261 | 189 | 172 | 314 | 94 | 146 | 0 | 122 | 149 | 210 | 42 | 57 | 57 | 1,756 |
| | | | | | | | | | | | | | | |

Table 8-7 Total Amounts of Water Delivered in 2018, by Month (acre-feet)

| Contracting Agency and Type of Service | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2018 Total Deliveries | |
|---|---------------|---------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|-----------------------|--|
| Non-SWP Water Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,606 | 0 | 0 | 0 | 8 | 0 | 2,614 | |
| Alameda-Zone 7 Total (*excluded from total) | 2,359 | 1,888 | 2,073 | 2,404 | 4,256 | 4,695 | 5,468 | 5,761 | 4,417 | 3,756 | 2,584 | 1,618 | 0 | 41,279 | |
| Alameda County Water District | | | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 69 | 0 | 0 | 0 | 0 | 1,150 | 1,925 | 1,577 | 4,721 | | |
| Carryover | 1,351 | 821 | 2 | 0 | 1,677 | 2,126 | 2,228 | 235 | 0 | 0 | 0 | 0 | 0 | 8,440 | |
| Water Bank Recovery | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,146 | 2,111 | 743 | 0 | 0 | 0 | 5,000 | |
| Non-SWP Water | 0 | 0 | 0 | 983 | 157 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,140 | |
| Alameda County Total (*excluded from total) | 1,351 | 821 | 2 | 983 | 1,903 | 2,126 | 2,228 | 2,381 | 2,111 | 1,893 | 1,925 | 1,577 | 19,301 | | |
| Santa Clara Valley Water District | | | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 96 | 4,555 | 4,137 | 0 | 851 | 6,088 | 15,729 | |
| Table A Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,000 | 1,448 | 2,552 | 0 | 0 | 8,000 | |
| Table A Transferred to Others* | 0 | 0 | 28 | 0 | 27 | 276 | 0 | 1,169 | 1,000 | 8,068 | 0 | 0 | 0 | 10,568 | |
| Carryover Water | 0 | 5,144 | 6,842 | 5,770 | 6,601 | 7,736 | 7,176 | 4,020 | 0 | 0 | 0 | 0 | 0 | 43,289 | |
| Carryover Water Transferred to Others* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,932 | 0 | 0 | 0 | 0 | 0 | 12,932 | |
| Non-SWP Water Transferred from Others | 9,456 | 4,543 | 0 | 0 | 0 | 0 | 0 | 710 | 10,000 | 9,000 | 0 | 9 | 0 | 33,718 | |
| Santa Clara Total (*excluded from total) | 9,456 | 9,687 | 6,842 | 5,770 | 6,601 | 7,736 | 7,984 | 18,575 | 17,137 | 1,448 | 3,412 | 6,088 | 0 | 100,736 | |
| Non-SWP Contractors | | | | | | | | | | | | | | | |
| Byron-Bethany Irrigation District | | | | | | | | | | | | | | | |
| Regulated delivery of local supply | 161 | 712 | 179 | 991 | 2,648 | 3,098 | 3,111 | 2,169 | 1,700 | 1,089 | 621 | 162 | 16,641 | | |
| Recreation/Fish and Wildlife (SWP Share) | | | | | | | | | | | | | | | |
| Lake Del Valle | 0 | 0 | 5 | 5 | 9 | 12 | 15 | 17 | 15 | 10 | 10 | 2 | 2 | 100 | |
| SWP | 3,449 | 7,664 | 8,750 | 7,865 | 12,518 | 14,423 | 12,379 | 14,466 | 12,420 | 6,154 | 7,872 | 9,228 | 117,188 | | |
| Non-SWP | 9,878 | 5,444 | 351 | 2,288 | 2,899 | 3,244 | 6,427 | 14,437 | 12,960 | 2,042 | 680 | 219 | 60,869 | | |
| South Bay Area Total | 13,327 | 13,108 | 9,101 | 10,153 | 15,417 | 17,667 | 18,806 | 28,903 | 25,380 | 8,196 | 8,552 | 9,447 | 9,447 | 178,057 | |
| SAN JOAQUIN VALLEY AREA | | | | | | | | | | | | | | | |
| SWP Agencies | | | | | | | | | | | | | | | |
| County of Kings | | | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 52 | 982 | 200 | 4 | 0 | 0 | 0 | 0 | 0 | 1,238 | |
| Table A Transferred to Others | 1 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 1 | 1 | 1 | 0 | 0 | 46 | |
| Carryover Water Transferred to Others* | 108 | 139 | 122 | 176 | 286 | 317 | 295 | 317 | 216 | 214 | 110 | 63 | 2,363 | | |
| Non-SWP Water Transferred from Others | 0 | 0 | 0 | 0 | 0 | 64 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 82 | |

Table 8-7 Total Amounts of Water Delivered in 2018, by Month (acre-feet)

| | | 2018 Total Deliveries | | | | | | | | | | | |
|--|--------|-----------------------|--------|--------|--------|--------|---------|--------|--------|--------|--------|---------|---------|
| Contracting Agency and Type of Service | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Kings Total (*excluded from total) | 0 | 0 | 0 | 0 | 52 | 982 | 264 | 6 | 0 | 0 | 0 | 0 | 0 |
| Dudley Ridge Water District | | | | | | | | | | | | | 1,304 |
| Table A Water Transferred from Others | 206 | 264 | 17 | 58 | 247 | 0 | 0 | 438 | 706 | 452 | 145 | 2,533 | |
| Table A Transferred to Others* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,417 | 8,340 | 1,864 | 13,621 | |
| Carryover Water Transferred to Others* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,415 | 0 | 0 | 5,000 | 7,415 | |
| Delivery of Backup Water Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,885 | 0 | 0 | 0 | 0 | 7,885 |
| Non-SWP Water Transferred from Others | 0 | 0 | 0 | 0 | 420 | 186 | 536 | 624 | 55 | 895 | 4 | 6 | 2,726 |
| Dudley Ridge Total (*excluded from total) | 206 | 264 | 17 | 58 | 667 | 186 | 536 | 8,509 | 493 | 1,601 | 458 | 151 | 13,144 |
| Empire West Side Irrigation District | | | | | | | | | | | | | |
| Table A Transferred to Others* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 438 | 0 | 301 | 0 | 739 |
| Carryover | 151 | 380 | 321 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 852 |
| Empire Total (*excluded from total) | 151 | 380 | 321 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 852 |
| Kern County Water Agency | | | | | | | | | | | | | |
| Table A | 768 | 387 | 0 | 0 | 12,032 | 81,542 | 58,432 | 29,468 | 2,804 | 14,215 | 9,559 | 0 | 209,207 |
| Table A Transferred from Others | 0 | 0 | 0 | 0 | 65 | 1,234 | 2,957 | 15,956 | 18,090 | 21,926 | 9,079 | 2,091 | 71,398 |
| Table A Transferred to Others* | 22 | 28 | 15 | 52 | 88 | 100 | 133 | 103 | 76 | 66 | 37 | 15 | 735 |
| Carryover Water | 7,425 | 27,712 | 6,260 | 12,487 | 18,892 | 1,606 | 0 | 0 | 0 | 0 | 0 | 0 | 74,382 |
| Carryover Water Transferred from Others | 2,792 | 2,340 | 0 | 0 | 0 | 0 | 12,932 | 2,415 | 0 | 0 | 0 | 5,000 | 25,479 |
| Water Bank Recovery | 0 | 668 | 8,559 | 23,195 | 30,736 | 11,708 | 5,726 | 6,243 | 1,967 | 0 | 0 | 0 | 88,802 |
| Water Bank Recovery Water Transferred to Others* | 0 | 0 | 5,741 | 7,693 | 6,421 | 0 | 0 | 2,146 | 2,111 | 743 | 0 | 0 | 24,855 |
| Delivery of Backup Water | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,301 | 0 | 0 | 0 | 0 | 1,301 |
| Delivery of Backup Water Transferred to Others* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,885 | 0 | 0 | 0 | 0 | 7,885 |
| Non-SWP Water Transferred from Others | 5,383 | 17,949 | 0 | 0 | 3,203 | 40,502 | 38,390 | 41,970 | 20,551 | 858 | 4,428 | 173,234 | |
| Non-SWP Water Transferred to Others* | 1,300 | 1,300 | 2,635 | 0 | 0 | 7,000 | 1,650 | 10,000 | 12,800 | 3,420 | 10,155 | 3,267 | 53,507 |
| Kern Total (*excluded from total) | 16,368 | 49,056 | 14,819 | 35,682 | 61,725 | 99,293 | 121,850 | 92,472 | 64,831 | 56,692 | 19,496 | 11,519 | 643,803 |
| Oak Flat Water District | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 141 | 71 | 90 | 0 | 302 |
| Carryover Water | 21 | 126 | 4 | 161 | 370 | 438 | 398 | 302 | 89 | 78 | 0 | 0 | 1,987 |
| Oak Flat Total | 21 | 126 | 4 | 161 | 370 | 438 | 398 | 302 | 230 | 149 | 90 | 0 | 2,289 |
| Tulare Lake Basin Water Storage District | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 85 | 0 | 0 | 0 | 0 | 0 | 2,209 | 4,914 | 7,208 |
| Table A Transferred to Others* | 0 | 0 | 0 | 1,894 | 0 | 0 | 316 | 0 | 900 | 0 | 0 | 0 | 3,110 |

Table 8-7 Total Amounts of Water Delivered in 2018, by Month (acre-feet)

| Contracting Agency and Type of Service | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2018 Total Deliveries |
|--|--------|--------|-----|-----|-------|-------|-------|-------|-------|--------|--------|--------|-----------------------|
| Carryover | 0 | 0 | 0 | 0 | 0 | 2,969 | 3,209 | 5,347 | 2,483 | 327 | 5,324 | 3,896 | 23,555 |
| Non-SWP Water Transferred from Others | 8,730 | 1,608 | 0 | 0 | 54 | 3,903 | 633 | 0 | 2,125 | 525 | 0 | 0 | 17,578 |
| Tulare Total (*excluded from total) | 8,730 | 1,608 | 0 | 0 | 139 | 6,872 | 3,842 | 5,347 | 4,608 | 852 | 7,533 | 8,810 | 48,341 |
| California State Parks/Fish and Wildlife (SWP Share) | | | | | | | | | | | | | |
| California Fish and Wildlife, O'Neill | 50 | 47 | 103 | 0 | 38 | 33 | 68 | 58 | 4 | 15 | 66 | 16 | 498 |
| California Fish and Wildlife, Lateral 4 | 0 | 1 | 0 | 0 | 0 | 30 | 19 | 0 | 0 | 0 | 0 | 0 | 50 |
| California State Parks, O'Neill | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| California State Parks, San Luis | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| California State Parks/Fish and Wildlife (SWP Share) Total | 51 | 48 | 104 | 1 | 38 | 65 | 87 | 58 | 5 | 15 | 66 | 16 | 554 |
| Non-SWP Contractors | | | | | | | | | | | | | |
| Bureau of Reclamation | | | | | | | | | | | | | |
| Non-SWP Water Transferred to Others* | 8,156 | 4,531 | 0 | 0 | 7 | 0 | 5 | 0 | 2,125 | 525 | 0 | 2,274 | 17,623 |
| Kern National Wildlife Refuge | 4,438 | 2,823 | 0 | 62 | 193 | 0 | 0 | 1,660 | 5,419 | 5,723 | 4,404 | 2,956 | 27,678 |
| California Fish and Wildlife | 41 | 38 | 85 | 0 | 31 | 52 | 72 | 47 | 3 | 11 | 54 | 13 | 447 |
| California State Parks | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 6 |
| Reclamation Total (*excluded from total) | 4,479 | 2,861 | 86 | 63 | 224 | 53 | 72 | 1,709 | 5,422 | 5,734 | 4,458 | 2,970 | 28,131 |
| CVP Annual Contractors | | | | | | | | | | | | | |
| Musco Family Olive Company | 2 | 32 | 48 | 46 | 45 | 50 | 48 | 58 | 48 | 52 | 37 | 26 | 492 |
| San Joaquin Valley National Cemetery | 2 | 13 | 5 | 37 | 74 | 73 | 109 | 84 | 75 | 41 | 15 | 3 | 531 |
| CVP Annual Contractors Total | 4 | 45 | 53 | 83 | 119 | 123 | 157 | 142 | 123 | 93 | 52 | 29 | 1,023 |
| Cross Valley Canal Contractors | | | | | | | | | | | | | |
| County of Fresno | 562 | 9,863 | 0 | 0 | 0 | 0 | 0 | 4,328 | 3,981 | 748 | 635 | 4,942 | 0 |
| County of Tulare | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 1,277 | 1,149 | 168 | 0 |
| Hills Valley Irrigation District | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 834 | 725 | 75 | 0 |
| Kern-Tulare Water District | 6,492 | 10,336 | 0 | 0 | 0 | 0 | 3,842 | 1,158 | 0 | 0 | 2,871 | 5,766 | 2,562 |
| Lower Tule River Irrigation District | 6,662 | 4,664 | 0 | 0 | 0 | 0 | 0 | 0 | 351 | 8,947 | 6,253 | 1,834 | 4,670 |
| Pixley Irrigation District | 7,950 | 2,663 | 0 | 0 | 0 | 0 | 0 | 0 | 351 | 7,657 | 6,552 | 991 | 0 |
| Tri-Valley Water District | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 286 | 263 | 10 | 0 |
| Cross Valley Canal Total | 21,666 | 27,526 | 0 | 0 | 0 | 0 | 3,842 | 5,486 | 4,794 | 19,749 | 18,448 | 13,786 | 7,232 |
| Western Hills Water District | | | | | | | | | | | | | |
| Table A Point of Delivery from SWP | 22 | 28 | 15 | 52 | 88 | 100 | 133 | 103 | 76 | 66 | 37 | 15 | 735 |
| Western Hills Total | 22 | 28 | 15 | 52 | 88 | 100 | 133 | 103 | 76 | 66 | 37 | 15 | 735 |
| Westlands Water District | | | | | | | | | | | | | |
| Table A Transferred from Others | 1 | 0 | 0 | 0 | 1,894 | 0 | 0 | 358 | 0 | 1 | 1 | 302 | 0 |
| | | | | | | | | | | | | | 2,557 |

Table 8-7 Total Amounts of Water Delivered in 2018, by Month (acre-feet)

Table 8-7 Total Amounts of Water Delivered in 2018, by Month (acre-feet)

| Contracting Agency and Type of Service | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2018 Total Deliveries |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------------------|
| Coachella Total | 52,594 | 16,581 | 4,099 | 1,880 | 0 | 7,000 | 876 | 0 | 4,966 | 17,639 | 17,511 | 15,943 | 139,089 |
| Crestline-Lake Arrowhead Water Agency | | | | | | | | | | | | | |
| Table A | 12 | 4 | 28 | 68 | 74 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 199 |
| Table A Transferred from Others | 13 | 7 | 0 | 0 | 31 | 61 | 121 | 45 | 117 | 101 | 0 | 0 | 496 |
| Carryover Water | 95 | 35 | 0 | 0 | 34 | 120 | 129 | 151 | 104 | 67 | 0 | 0 | 735 |
| Non-SWP Water | 0 | 0 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 95 | 250 |
| Crestline Total (*excluded from total) | 120 | 46 | 75 | 68 | 139 | 181 | 250 | 196 | 221 | 168 | 121 | 95 | 1680 |
| Desert Water Agency | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,114 | 6,133 | 6,133 | 19,513 |
| Carryover Water | 21,194 | 6,681 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27,875 |
| Non-SWP Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 353 | 0 | 0 | 5 | 0 | 358 |
| Desert Total | 21,194 | 6,681 | 0 | 0 | 0 | 0 | 0 | 353 | 0 | 1,114 | 6,133 | 6,138 | 47,746 |
| LittleRock Creek Irrigation District | | | | | | | | | | | | | |
| Table A Transferred to Others* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 608 | 197 | 0 |
| The Metropolitan Water District of Southern California | | | | | | | | | | | | | |
| Table A | 57 | 33,029 | 37,070 | 53,489 | 38,587 | 39,736 | 76,399 | 76,663 | 66,785 | 55,042 | 53,094 | 32,068 | 562,019 |
| Table A Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 1,225 | 1,225 | 1,262 | 2,051 | 1,430 | 2,532 | 10,951 |
| Table A Transferred to Others* | 0 | 0 | 0 | 0 | 0 | 65 | 1,234 | 2,957 | 6,104 | 3,021 | 2,351 | 846 | 227 |
| Carryover Water | 43,968 | 12,461 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16,805 |
| Carryover Water Transferred to Others* | 2,792 | 2,340 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,132 |
| Water Bank Recovery | 0 | 0 | 4,277 | 5,813 | 6,421 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16,511 |
| Non-SWP Water Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 5,145 | 5,145 | 3,281 | 0 | 171 | 0 | 13,742 |
| Metropolitan Total (*excluded from total) | 44,025 | 45,490 | 41,347 | 59,302 | 45,008 | 40,961 | 82,769 | 83,034 | 71,328 | 57,093 | 54,695 | 34,600 | 659,652 |
| Mojave Water Agency | | | | | | | | | | | | | |
| Table A Transferred to Others* | 0 | 0 | 0 | 0 | 0 | 0 | 1,225 | 4,245 | 3,839 | 1,226 | 1,226 | 1,226 | 14,213 |
| Carryover Water | 342 | 358 | 392 | 327 | 396 | 371 | 393 | 405 | 505 | 517 | 524 | 75 | 4,605 |
| Carryover Water Transferred to Others* | 10 | 41 | 50 | 68 | 97 | 159 | 105 | 142 | 105 | 47 | 24 | 18 | 866 |
| Non-SWP Water | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Mojave Total (*excluded from total) | 342 | 371 | 392 | 327 | 396 | 371 | 393 | 405 | 505 | 517 | 524 | 75 | 4,618 |
| Palmdale Water District | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 833 | 869 | 0 | 0 | 0 | 0 |
| Table A Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 260 | 1,010 | 1,130 | 1,064 | 36 | 0 | 3,500 |
| Table A Transferred to Others* | 0 | 0 | 92 | 0 | 95 | 188 | 0 | 0 | 0 | 1,184 | 2,262 | 1,554 | 5,375 |
| Carryover Water | 29 | 0 | 0 | 557 | 1,041 | 1,272 | 0 | 0 | 176 | 501 | 705 | 547 | 4,828 |

Table 8-7 Total Amounts of Water Delivered in 2018, by Month (acre-feet)

| Contracting Agency and Type of Service | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total Deliveries |
|--|---------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|------------------|
| Non-SWP Water Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 120 |
| Palmdale Total | 29 | 0 | 0 | 557 | 1,041 | 1,532 | 2,023 | 1,999 | 1,240 | 537 | 705 | 547 | 10,210 |
| San Bernardino Valley Municipal Water District | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 0 | 0 | 2,424 | 5,202 | 4,105 | 7,207 | 3,307 | 1,089 | 23,334 |
| Table A Transferred from Others | 0 | 0 | 120 | 0 | 122 | 464 | 0 | 1,169 | 1,000 | 0 | 0 | 0 | 2,875 |
| Table A Transferred to Others* | 13 | 7 | 0 | 0 | 31 | 61 | 121 | 45 | 117 | 101 | 0 | 0 | 496 |
| Carryover Water | 2,020 | 1,268 | 520 | 383 | 1,567 | 3,625 | 4,393 | 0 | 2,326 | 0 | 1,503 | 0 | 17,605 |
| San Bernardino Total (*excluded from total) | 2,020 | 1,268 | 640 | 383 | 1,689 | 4,089 | 6,817 | 6,371 | 7,431 | 7,207 | 4,810 | 1,089 | 43,814 |
| San Gabriel Valley Municipal Water District | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 841 | 2,285 | 2,762 | 1,544 | 2,146 | 502 | 0 | 0 | 10,080 |
| Carryover Water | 2,158 | 3,068 | 1,749 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,975 |
| San Gabriel Total (*excluded from total) | 2,158 | 3,068 | 1,749 | 0 | 841 | 2,285 | 2,762 | 1,544 | 2,146 | 502 | 0 | 0 | 17,055 |
| San Gorgonio Pass Water Agency | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 1,181 | 963 | 0 | 14 | 0 | 0 | 0 | 0 | 2,158 |
| Table A Transferred from Others | 0 | 0 | 0 | 0 | 0 | 187 | 1,045 | 1,157 | 1,145 | 1,178 | 0 | 538 | 5,250 |
| Carryover Water | 1,204 | 1,074 | 28 | 1,084 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,390 |
| Non-SWP Water Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 97 | 26 | 0 | 0 | 1,090 | 611 | 1,824 |
| San Gorgonio Total | 1,204 | 1,074 | 28 | 1,084 | 1,181 | 1,150 | 1,142 | 1,197 | 1,145 | 1,178 | 1,090 | 1,149 | 12,622 |
| Santa Clarita Valley Water Agency | | | | | | | | | | | | | |
| Table A | 0 | 0 | 0 | 0 | 1,794 | 1,832 | 2,059 | 3,607 | 1,389 | 825 | 0 | 967 | 12,473 |
| Carryover | 2,560 | 2,481 | 1,561 | 3,244 | 2,000 | 2,700 | 1,755 | 2,000 | 2,000 | 2,123 | 0 | 0 | 24,424 |
| Non-SWP Water Transferred from Others | 0 | 0 | 0 | 0 | 0 | 0 | 1,650 | 0 | 1,600 | 1,000 | 1,000 | 750 | 6,000 |
| Santa Clarita Total | 2,560 | 2,481 | 1,561 | 3,244 | 3,794 | 4,532 | 5,464 | 5,607 | 4,989 | 3,825 | 3,123 | 1,717 | 42,897 |
| Ventura County Watershed Protection District | | | | | | | | | | | | | |
| Table A Transferred to Others* | 0 | 0 | 0 | 0 | 0 | 0 | 187 | 1,045 | 1,157 | 1,181 | 1,382 | 204 | 1844 |
| California State Parks/Fish and Wildlife (SWP Share) | | | | | | | | | | | | | |
| Castaic Lagoon | 0 | 0 | 0 | 0 | 4 | 0 | 6 | 4 | 2 | 1 | 2 | 0 | 19 |
| Lake Perris—Parks and Recreation | 3 | 2 | 0 | 6 | 11 | 15 | 13 | 21 | 7 | 9 | 5 | 3 | 95 |
| Pyramid Lake | 2 | 3 | 2 | 2 | 3 | 0 | 7 | 11 | 8 | 7 | 5 | 1 | 51 |
| Silverwood Lake | 2 | 2 | 3 | 3 | 5 | 8 | 8 | 9 | 8 | 6 | 4 | 2 | 60 |
| California State Parks/Fish and Wildlife (SWP Share) Total | 7 | 7 | 5 | 11 | 23 | 23 | 34 | 45 | 25 | 23 | 16 | 6 | 225 |
| SWP | 131,515 | 81,850 | 45,795 | 63,784 | 53,863 | 60,034 | 99,157 | 100,183 | 92,866 | 95,081 | 86,743 | 60,746 | 971,617 |

Table 8-7 Total Amounts of Water Delivered in 2018, by Month (acre-feet)

| Contracting Agency and Type of Service | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2018 Total Deliveries |
|--|----------------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|------------------|-----------------------|
| Non-SWP | 0 | 13 | 8,423 | 7,693 | 6,421 | 7,000 | 8,241 | 5,171 | 7,081 | 3,420 | 4,666 | 2,180 | 60,309 | |
| Southern California Area Total | 131,515 | 81,863 | 54,218 | 71,477 | 60,284 | 67,034 | 107,388 | 105,354 | 99,947 | 98,501 | 91,409 | 62,926 | 1,031,926 | |
| SWP WATER | | | | | | | | | | | | | | |
| SWP Water Supply Contracts | | | | | | | | | | | | | | |
| Table A | 1,204 | 34,624 | 37,897 | 54,155 | 61,224 | 140,738 | 151,828 | 125,072 | 96,319 | 108,359 | 96,875 | 71,887 | 980,200 | |
| Table A Transfers and Exchanges | 219 | 271 | 137 | 58 | 466 | 3,435 | 9,380 | 23,301 | 27,121 | 29,243 | 16,972 | 6,860 | 116,463 | |
| Carryover Water | 147,276 | 89,271 | 25,434 | 32,284 | 39,833 | 26,192 | 36,486 | 27,179 | 12,164 | 6,325 | 12,763 | 11,429 | 466,636 | |
| SWP Contracted Supply to Non-SWP Agencies | 131 | 167 | 137 | 2,122 | 374 | 417 | 786 | 420 | 293 | 281 | 449 | 78 | 5,655 | |
| Subtotal | 148,830 | 124,351 | 63,605 | 88,619 | 101,897 | 170,782 | 198,480 | 175,972 | 135,897 | 144,208 | 126,059 | 90,254 | 1,568,954 | |
| Other Water Supply Contracts | | | | | | | | | | | | | | |
| Article 21 | 912 | 355 | 0 | 261 | 652 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,180 |
| Delivery of Backup Water | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,301 | 7,885 | 0 | 0 | 0 | 0 | 9,186 |
| Water Bank Recovery | 0 | 668 | 14,300 | 30,888 | 37,157 | 11,708 | 5,726 | 8,389 | 4,078 | 743 | 0 | 0 | 0 | 113,657 |
| Subtotal | 912 | 1,023 | 14,300 | 31,149 | 37,809 | 11,708 | 7,027 | 16,274 | 4,078 | 743 | 0 | 0 | 0 | 125,023 |
| Non-SWP Water Supply Contracts | | | | | | | | | | | | | | |
| Dry Year Purchase Program | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18,417 | 11,236 | 5,417 | 0 | 210 | 0 | 35,280 |
| Local Water | 261 | 202 | 219 | 1,297 | 251 | 146 | 0 | 122 | 149 | 210 | 150 | 152 | 3,159 | |
| Settlement Water | 832 | 396 | 163 | 0 | 1,606 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,997 |
| Vallejo Permit Water | 755 | 1,358 | 800 | 0 | 1,486 | 1,876 | 1,938 | 1,876 | 1,938 | 1,876 | 1,876 | 1,350 | 17,191 | |
| Other Non-SWP Programs | 23,679 | 24,218 | 2,740 | 150 | 693 | 14,567 | 35,246 | 43,431 | 55,181 | 25,889 | 5,444 | 6,664 | 237,682 | |
| Subtotal | 25,527 | 26,174 | 3,922 | 1,447 | 4,036 | 16,589 | 55,601 | 56,727 | 62,623 | 27,837 | 7,660 | 8,166 | 296,309 | |
| SWP Total | 175,269 | 151,548 | 81,827 | 121,215 | 143,742 | 199,079 | 261,108 | 248,973 | 202,598 | 172,788 | 133,719 | 98,420 | 1,990,286 | |
| NON-SWP WATER | | | | | | | | | | | | | | |
| Non-SWP Contractors | | | | | | | | | | | | | | |
| SWP Park and Recreation, Fish and Wildlife | 58 | 55 | 114 | 17 | 70 | 100 | 136 | 120 | 45 | 48 | 92 | 24 | 879 | |
| Other Non-SWP Programs | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,485 | 25,612 | 0 | 0 | 0 | 0 | 27,097 |

Table 8-7 Total Amounts of Water Delivered in 2018, by Month (acre-feet)

10 of 10

| Contracting Agency and Type of Service | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2018 Total Deliveries |
|--|----------------|----------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------------|
| Regulated delivery of local supply | 35,543 | 773 | 420 | 2,842 | 150,754 | 149,284 | 182,715 | 141,037 | 52,185 | 92,350 | 118,062 | 70,365 | 996,330 |
| CVP California State Parks | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 6 |
| CVP California Fish and Wildlife | 41 | 38 | 85 | 0 | 31 | 52 | 72 | 47 | 3 | 11 | 54 | 13 | 447 |
| CVP/Reclamation Contractors | 21,666 | 27,526 | 0 | 0 | 0 | 3,842 | 5,486 | 4,794 | 19,749 | 18,448 | 13,786 | 7,232 | 122,529 |
| Cross Valley Canal Contractors | 4,438 | 2,823 | 0 | 62 | 193 | 0 | 0 | 1,660 | 5,419 | 5,723 | 4,404 | 2,956 | 27,678 |
| Kern National Wildlife Refuge | 4 | 45 | 53 | 83 | 119 | 123 | 157 | 142 | 123 | 93 | 52 | 29 | 1,023 |
| Annual Contracts | 61,750 | 31,260 | 673 | 3,005 | 151,167 | 153,402 | 188,566 | 149,287 | 103,136 | 116,673 | 136,450 | 80,620 | 1,175,989 |
| Non-SWP Total | 237,019 | 182,808 | 82,500 | 124,220 | 294,909 | 352,481 | 449,674 | 398,260 | 305,734 | 289,461 | 270,169 | 179,040 | 3,166,275 |
| Grand Total | | | | | | | | | | | | | |

Table 8-8 Total Amounts of Annual Table A Water and Water Conveyed, by Type, 1962–2018 (acre-feet)

| Year | Annual Table A Amounts According to Water Supply Contracts | | | | | | Water Conveyed | | | | | | | | | |
|------|--|--------------------|--------------------|-----------------------------|--------------------------|------------------------------|----------------|-------------------|---|-------------------------------|--|---------------|-------------------------|---------------------------------|------------|-----------|
| | Upper Feather River Area [1] | North Bay Area [2] | South Bay Area [3] | San Joaquin Valley Area [4] | Central Coastal Area [5] | Southern California Area [6] | Total [7] | Deliveries | | | Recreation/Fish and Wildlife Water [12] | Subtotal [13] | Initial Fill Water [14] | Losses and Storage Changes [15] | Total [16] | |
| | | | | | | | | Table A Water [8] | Article 21, Surplus, Unscheduled Water ¹ [9] | Other Water ² [10] | Feather River Diversions ³ [11] | | | | | |
| 1962 | - | - | - | - | - | - | - | - | 9,704 | 7,499 | - | 17,203 | 9 | 272 | 17,484 | |
| 1963 | - | - | - | - | - | - | - | - | 13,212 | 16,049 | - | 29,261 | 71 | 185 | 29,517 | |
| 1964 | - | - | - | - | - | - | - | - | 21,743 | 17,891 | - | 39,634 | 171 | 152 | 39,957 | |
| 1965 | - | - | - | - | - | - | - | - | 35,985 | 27,425 | - | 63,410 | 93 | 729 | 64,232 | |
| 1966 | - | - | - | - | - | - | - | - | 59,599 | 33,361 | - | 92,960 | - | 1,746 | 94,706 | |
| 1967 | - | - | 11,538 | - | - | - | 11,538 | 11,354 | - | 45,225 | 24,639 | - | 81,218 | 8,328 | 4,212 | 93,758 |
| 1968 | 550 | - | 109,900 | 77,350 | - | 3,700 | 191,500 | 171,709 | 121,534 | 1,214 | 903,367 | - | 1,197,824 | 498,926 | 117,906 | 1,814,656 |
| 1969 | 620 | - | 98,700 | 163,075 | - | 5,000 | 267,395 | 193,020 | 72,397 | 8,692 | 832,454 | - | 1,106,563 | 510,614 | 72,196 | 1,689,373 |
| 1970 | 700 | - | 114,200 | 202,000 | - | 5,700 | 322,600 | 233,993 | 131,848 | 25,401 | 804,320 | - | 1,195,562 | 23,947 | 2,435 | 1,221,944 |
| 1971 | 890 | - | 116,200 | 251,800 | - | 6,700 | 375,590 | 357,340 | 294,581 | 35,438 | 825,886 | 8 | 1,513,253 | 7,853 | 5,812 | 1,526,918 |
| 1972 | 970 | - | 118,300 | 413,066 | - | 209,423 | 741,759 | 611,801 | 422,322 | 53,848 | 875,529 | 6,489 | 1,969,989 | 100,274 | 53,062 | 2,123,325 |
| 1973 | 1,100 | - | 120,400 | 383,652 | - | 481,100 | 986,252 | 692,888 | 294,916 | 29,540 | 851,285 | 1,155 | 1,869,784 | 204,638 | 53,798 | 2,128,220 |
| 1974 | 1,230 | - | 122,400 | 460,650 | - | 597,920 | 1,182,200 | 874,075 | 412,453 | 31,493 | 963,956 | 2,118 | 2,284,095 | 237,554 | 10,657 | 2,532,306 |
| 1975 | 1,610 | - | 124,500 | 545,809 | - | 714,950 | 1,386,869 | 1,223,990 | 620,685 | 46,995 | 924,696 | 3,377 | 2,819,743 | 103,352 | (94,606) | 2,828,489 |
| 1976 | 1,990 | - | 126,500 | 543,417 | - | 836,480 | 1,508,387 | 1,373,002 | 551,685 | 103,546 | 1,018,653 | 1,745 | 3,048,631 | 61,122 | (681,025) | 2,428,728 |
| 1977 | 2,420 | - | 128,600 | 581,400 | - | 954,901 | 1,667,321 | 573,896 | - | 410,991 | 624,497 | 1,111 | 1,610,495 | - | (131,151) | 1,479,344 |
| 1978 | 1,850 | - | 130,700 | 635,900 | - | 1,049,584 | 1,818,034 | 1,312,365 | 16,215 | 177,245 | 836,864 | 1,691 | 2,344,380 | 64,443 | 717,370 | 3,126,193 |
| 1979 | 2,130 | - | 132,700 | 702,685 | - | 1,190,573 | 2,028,088 | 1,404,292 | 646,330 | 431,693 | 933,067 | 1,766 | 3,417,648 | 12,302 | (83,430) | 3,346,520 |
| 1980 | 1,810 | 500 | 134,800 | 758,100 | 1,946 | 1,317,614 | 2,214,770 | 1,511,491 | 402,217 | 40,269 | 925,750 | 2,131 | 2,881,858 | - | (26,606) | 2,855,252 |
| 1981 | 1,940 | 650 | 137,000 | 818,000 | 2,813 | 1,432,065 | 2,392,468 | 1,889,125 | 908,428 | 283,310 | 993,785 | 4,688 | 4,079,336 | - | (802,263) | 3,277,073 |
| 1982 | 1,970 | 800 | 139,200 | 876,500 | 5,626 | 1,550,449 | 2,574,545 | 1,738,056 | 215,134 | 144,267 | 819,586 | 4,646 | 2,921,689 | - | 480,752 | 3,402,441 |
| 1983 | 2,000 | 950 | 141,400 | 867,118 | 8,439 | 1,681,257 | 2,701,164 | 1,184,119 | 13,019 | 172,030 | 633,778 | 7,849 | 2,010,795 | - | (90,997) | 1,919,798 |
| 1984 | 3,630 | 1,100 | 143,600 | 979,211 | 12,698 | 1,744,098 | 2,884,337 | 1,587,593 | 262,917 | 366,273 | 891,128 | 7,040 | 3,114,951 | - | (140,182) | 2,974,769 |
| 1985 | 3,760 | 1,250 | 145,800 | 1,019,049 | 21,138 | 1,864,849 | 3,055,846 | 1,912,765 | 301,844 | 474,417 | 924,049 | 4,033 | 3,617,108 | - | 92,885 | 3,709,993 |
| 1986 | 4,190 | 1,400 | 148,100 | 1,091,946 | 28,210 | 1,983,890 | 3,257,736 | 2,007,906 | 24,350 | 177,176 | 843,040 | 3,865 | 3,056,337 | - | 284,380 | 3,340,717 |
| 1987 | 4,620 | 1,550 | 150,300 | 1,188,500 | 35,204 | 2,103,941 | 3,484,115 | 2,113,915 | 114,907 | 375,810 | 882,301 | 7,672 | 3,494,605 | - | (390,413) | 3,104,192 |
| 1988 | 5,060 | 15,471 | 152,500 | 1,246,100 | 43,722 | 2,225,482 | 3,688,335 | 2,376,373 | - | 520,375 | 884,877 | 4,889 | 3,786,514 | - | (92,850) | 3,693,664 |
| 1989 | 5,500 | 24,615 | 156,700 | 1,290,400 | 56,342 | 2,424,633 | 3,958,190 | 2,853,747 | - | 474,559 | 830,500 | 8,135 | 4,166,941 | - | 447,917 | 4,614,858 |
| 1990 | 6,040 | 28,190 | 160,900 | 1,313,450 | 70,486 | 2,500,600 | 4,079,666 | 2,582,151 | 90 | 424,697 | 875,099 | 9,262 | 3,891,299 | - | (528,869) | 3,362,430 |
| 1991 | 11,880 | 29,590 | 166,400 | 1,338,011 | 70,486 | 2,510,200 | 4,126,567 | 549,113 | 3,521 | 543,582 | 565,395 | 4,879 | 1,666,490 | - | 167,435 | 1,833,925 |

Table 8-8 Total Amounts of Annual Table A Water and Water Conveyed, by Type, 1962–2018 (acre-feet)

2 of 3

| Year | Annual Table A Amounts According to Water Supply Contracts | | | | | | Water Conveyed | | | | | | | | | |
|------|--|--------------------|--------------------|-----------------------------|--------------------------|------------------------------|----------------|-------------------|---|-------------------------------|--|------------------------------|---------------|-------------------------|--|------------|
| | Upper Feather River Area [1] | North Bay Area [2] | South Bay Area [3] | San Joaquin Valley Area [4] | Central Coastal Area [5] | Southern California Area [6] | Deliveries | | | Water Conveyed | | | | | | |
| | | | | | | | Total [7] | Table A Water [8] | Article 21, Surplus and Unscheduled Water [9] | Other Water ² [10] | Feather River Diversions ³ [11] | Fish and Wildlife Water [12] | Subtotal [13] | Initial Fill Water [14] | Losses and Storage Changes ⁴ [15] | Total [16] |
| 1992 | 11,920 | 32,010 | 171,900 | 1,342,300 | 70,486 | 2,510,200 | 4,138,816 | 1,410,799 | 1,156 | 166,992 | 613,978 | 2,605 | 2,195,530 | - | (63,541) | 2,131,989 |
| 1993 | 11,960 | 34,620 | 177,400 | 1,342,300 | 70,486 | 2,510,200 | 4,146,966 | 2,313,236 | - | 256,853 | 822,589 | 2,609 | 3,395,287 | - | 726,123 | 4,121,410 |
| 1994 | 12,000 | 37,215 | 182,000 | 1,342,300 | 70,486 | 2,510,200 | 4,154,201 | 1,749,351 | 112,625 | 236,739 | 874,018 | 8,200 | 2,980,933 | - | (295,405) | 2,685,528 |
| 1995 | 12,050 | 44,030 | 184,000 | 1,342,300 | 70,486 | 2,510,200 | 4,163,066 | 1,967,093 | 64,330 | 85,560 | 860,077 | 2,575 | 2,979,635 | - | 69,536 | 3,049,171 |
| 1996 | 12,100 | 48,225 | 186,000 | 1,301,630 | 70,486 | 2,492,900 | 4,111,341 | 2,514,824 | 28,647 | 252,346 | 1,005,148 | 3,907 | 3,804,872 | 86 | 491,550 | 4,296,508 |
| 1997 | 12,150 | 49,315 | 188,000 | 1,297,300 | 45,201 | 2,492,900 | 4,084,866 | 2,260,383 | 21,432 | 322,000 | 993,211 | 4,146 | 3,601,172 | 527 | (11,806) | 3,589,893 |
| 1998 | 12,200 | 50,420 | 188,000 | 1,272,300 | 45,201 | 2,517,900 | 4,086,021 | 1,726,519 | 20,288 | 127,405 | 872,738 | 2,108 | 2,749,058 | - | (132,491) | 2,616,567 |
| 1999 | 13,940 | 55,020 | 188,000 | 1,272,300 | 70,486 | 2,519,900 | 4,119,646 | 2,738,903 | 158,070 | 85,312 | 1,108,672 | 4,324 | 4,095,281 | - | (189,525) | 3,905,756 |
| 2000 | 14,000 | 55,945 | 210,000 | 1,205,300 | 70,486 | 2,565,900 | 4,121,631 | 3,172,407 | 308,785 | 353,584 | 1,085,886 | 4,096 | 4,924,758 | - | (20,103) | 4,904,655 |
| 2001 | 14,670 | 66,561 | 220,000 | 1,185,519 | 70,486 | 2,566,900 | 4,124,136 | 1,579,291 | 48,145 | 632,403 | 1,077,997 | 2,942 | 3,340,778 | - | 159,983 | 3,500,761 |
| 2002 | 14,730 | 67,396 | 220,000 | 1,182,519 | 70,486 | 2,569,900 | 4,125,031 | 2,634,672 | 43,115 | 311,976 | 1,131,880 | 3,712 | 4,125,355 | - | 80,709 | 4,206,064 |
| 2003 | 14,790 | 68,231 | 220,400 | 1,182,119 | 70,486 | 2,570,900 | 4,126,926 | 2,975,817 | 59,828 | 160,087 | 1,006,995 | 2,862 | 4,205,589 | - | 459,377 | 4,664,966 |
| 2004 | 13,100 | 69,056 | 222,619 | 1,170,000 | 70,486 | 2,581,800 | 4,127,061 | 2,644,787 | 218,496 | 403,542 | 1,171,835 | 2,887 | 4,441,547 | - | 108,840 | 4,550,387 |
| 2005 | 10,800 | 69,481 | 222,619 | 1,170,000 | 70,486 | 2,582,300 | 4,125,686 | 2,827,256 | 731,083 | 92,858 | 1,074,706 | 1,515 | 4,727,418 | - | 529,347 | 5,256,765 |
| 2006 | 11,124 | 69,856 | 222,619 | 1,170,000 | 70,486 | 2,582,800 | 4,126,885 | 2,973,349 | 621,339 | 43,774 | 1,094,944 | 3,628 | 4,837,034 | - | (11,981) | 4,717,053 |
| 2007 | 11,520 | 70,231 | 222,619 | 1,170,000 | 70,486 | 2,584,450 | 4,129,306 | 2,180,751 | 309,973 | 598,789 | 1,193,237 | 2,581 | 4,285,331 | - | (524,851) | 3,760,480 |
| 2008 | 39,120 | 70,606 | 222,619 | 1,170,000 | 70,486 | 2,593,100 | 4,165,931 | 1,244,240 | 2,729 | 769,517 | 1,087,669 | 2,778 | 3,106,933 | - | (758,813) | 2,348,120 |
| 2009 | 39,190 | 70,981 | 222,619 | 1,170,000 | 70,486 | 2,593,100 | 4,166,376 | 1,385,266 | 6,032 | 709,885 | 1,125,147 | 2,047 | 3,228,377 | - | (31,319) | 3,197,058 |
| 2010 | 13,491 | 76,531 | 222,619 | 1,140,000 | 70,486 | 2,623,100 | 4,146,227 | 2,010,672 | 7,505 | 790,602 | 978,172 | 1,167 | 3,788,118 | - | 461,751 | 4,249,869 |
| 2011 | 14,388 | 76,581 | 222,619 | 1,140,000 | 70,486 | 2,623,100 | 4,147,174 | 2,847,572 | 420,691 | 388,632 | 1,028,542 | 1,593 | 4,687,030 | - | 358,354 | 5,045,384 |
| 2012 | 39,420 | 76,631 | 222,619 | 1,140,000 | 70,486 | 2,623,100 | 4,172,256 | 2,593,699 | - | 367,609 | 1,047,832 | 1,609 | 4,010,749 | - | (537,209) | 3,473,540 |
| 2013 | 39,510 | 76,681 | 222,619 | 1,140,000 | 70,486 | 2,623,100 | 4,172,396 | 1,623,212 | - | 614,203 | 1,166,635 | 1,641 | 3,405,691 | - | (256,889) | 3,148,802 |
| 2014 | 39,600 | 76,631 | 222,619 | 1,136,556 | 70,486 | 2,626,544 | 4,172,536 | 475,533 | 1,444 | 699,235 | 839,792 | 677 | 2,016,681 | - | (222,460) | 1,794,221 |
| 2015 | 39,700 | 76,781 | 222,619 | 1,133,556 | 70,486 | 2,626,544 | 4,172,686 | 846,547 | 690 | 585,388 | 675,530 | 721 | 2,108,876 | - | (419,759) | 1,689,117 |
| 2016 | 39,800 | 76,781 | 222,619 | 1,133,556 | 70,486 | 2,629,544 | 4,172,786 | 2,021,891 | 3,319 | 343,472 | 974,673 | 1,401 | 3,344,756 | - | (527,248) | 2,817,508 |

Table 8-8 Total Amounts of Annual Table A Water and Water Conveyed, by Type, 1962–2018 (acre-feet)

3 of 3

| Year | Annual Table A Amounts According to Water Supply Contracts | | | | | | Water Conveyed | | | | | | |
|--------------|--|--------------------|--------------------|-----------------------------|--------------------------|------------------------------|--------------------|-------------------|--|-------------------|---|-------------------------|--|
| | Upper Feather River Area [1] | North Bay Area [2] | South Bay Area [3] | San Joaquin Valley Area [4] | Central Coastal Area [5] | Southern California Area [6] | Total [7] | Table A Water [8] | Article 21, Surplus, and Unscheduled Water [9] | Deliveries | Recreation/Fish and Wildlife Water [11] | Initial Fill Water [14] | Losses and Storage Changes ⁴ [15] |
| 2017 | 39,800 | 76,781 | 222,619 | 1,133,556 | 70,486 | 2,629,544 | 4,172,786 | 3,103,773 | 296,919 | 417,962 | 967,206 | 775 | 4,786,635 |
| 2018 | 39,800 | 76,781 | 222,619 | 1,133,556 | 70,486 | 2,629,544 | 4,172,786 | 1,568,954 | 2,180 | 614,573 | 979,689 | 879 | 3,166,275 |
| Total | 655,333 | 1,825,544 | 8,906,323 | 50,266,156 | 2,209,662 | 98,887,779 | 162,750,797 | 88,733,560 | 9,330,599 | 16,058,241 | 47,449,729 | 158,534 | 161,720,663 |
| | | | | | | | | | | 1,834,310 | (1,431,938) | 162,123,035 | |

¹ Values include amounts of deliveries to short-term contractors (Mustang Water District, 1974, 1979, and 1980; Green Valley Water District, 1974, 1975, 1978, 1979, 1980, and 1985; and Granite Construction Company, 1980).² Includes amounts of SWP and non-SWP water conveyed for SWP and non-SWP contractors.³ Includes amounts of water diverted under various water rights agreements.⁴ Amounts reflect net effect of (1) operational losses from SWP transportation facilities; (2) changes in reservoir storage south of the Delta; (3) storable local inflows to SWP reservoirs; (4) side inflow to San Luis Canal; and (5) inflow into the California Aqueduct from the Kern River Intertie.

Table 8-9 SWP Water Delivered by Category, 1962–2018 (acre-feet)

| Year | Table Water A | | | Article 21/Unscheduled | | | Other SWP Water Deliveries | | | Total Deliveries |
|------|--------------------------|--------------|----------------------------|--------------------------|--------------|------------------------------|----------------------------|---------------------------------------|-----------------------------------|------------------|
| | Municipal and Industrial | Agricultural | Total Table A ¹ | Municipal and Industrial | Agricultural | Total Article 21/Unscheduled | Other Water ² | Feather River Diversions ³ | Fish & Wildlife/ Recreation Water | |
| | | | | | | | | | | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 9,704 | 7,499 | 0 | 17,203 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 13,212 | 16,049 | 0 | 29,261 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 21,743 | 17,891 | 0 | 39,634 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 35,985 | 27,425 | 0 | 63,410 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 59,599 | 33,361 | 0 | 92,960 |
| 1967 | 5,563 | 5,791 | 11,354 | 0 | 0 | 0 | 45,225 | 24,639 | 0 | 69,864 |
| 1968 | 86,541 | 85,168 | 171,709 | 10,000 | 111,534 | 121,534 | 1,214 | 903,367 | 0 | 904,581 |
| 1969 | 63,956 | 129,064 | 193,020 | 0 | 72,397 | 72,397 | 8,692 | 832,454 | 0 | 841,146 |
| 1970 | 83,415 | 150,578 | 233,993 | 0 | 131,848 | 131,848 | 25,401 | 804,320 | 0 | 829,721 |
| 1971 | 93,776 | 263,564 | 357,340 | 0 | 294,581 | 294,581 | 35,438 | 825,886 | 8 | 861,332 |
| 1972 | 186,796 | 425,005 | 611,801 | 0 | 422,322 | 422,322 | 53,848 | 875,529 | 6,489 | 935,866 |
| 1973 | 297,497 | 395,391 | 692,888 | 0 | 294,916 | 294,916 | 29,540 | 851,285 | 1,155 | 881,980 |
| 1974 | 423,982 | 450,093 | 874,075 | 0 | 412,453 | 412,453 | 31,493 | 963,956 | 2,118 | 997,567 |
| 1975 | 670,492 | 553,498 | 1,223,990 | 356 | 620,329 | 620,685 | 46,995 | 924,696 | 3,377 | 975,068 |
| 1976 | 631,876 | 741,126 | 1,373,002 | 4,147 | 547,538 | 551,685 | 103,546 | 1,018,653 | 1,745 | 1,123,944 |
| 1977 | 354,930 | 218,966 | 573,896 | 0 | 0 | 0 | 410,991 | 624,497 | 1,111 | 1,036,599 |
| 1978 | 782,625 | 529,740 | 1,312,365 | 0 | 16,215 | 16,215 | 177,245 | 836,864 | 1,691 | 1,015,800 |
| 1979 | 692,888 | 711,404 | 1,404,292 | 0 | 646,830 | 646,830 | 431,693 | 933,067 | 1,766 | 1,366,526 |
| 1980 | 726,545 | 784,946 | 1,511,491 | 52,200 | 350,017 | 402,217 | 40,269 | 925,750 | 2,131 | 968,150 |
| 1981 | 1,053,273 | 835,852 | 1,889,125 | 18,920 | 889,508 | 908,428 | 283,310 | 993,785 | 4,688 | 1,281,783 |
| 1982 | 916,014 | 822,042 | 1,738,056 | 140 | 214,994 | 215,134 | 144,267 | 819,586 | 4,646 | 968,499 |
| 1983 | 482,749 | 701,370 | 1,184,119 | 0 | 13,019 | 13,019 | 172,030 | 633,778 | 7,849 | 813,657 |
| 1984 | 725,799 | 861,794 | 1,587,593 | 3,663 | 259,254 | 262,917 | 366,273 | 891,128 | 7,040 | 1,264,441 |
| 1985 | 983,341 | 929,424 | 1,912,765 | 9,638 | 292,206 | 301,844 | 474,417 | 924,049 | 4,033 | 1,402,499 |
| 1986 | 998,611 | 1,009,295 | 2,007,906 | 2,595 | 21,755 | 24,350 | 177,176 | 843,040 | 3,865 | 1,024,081 |
| 1987 | 1,079,983 | 1,033,932 | 2,113,915 | 6,949 | 107,958 | 114,907 | 375,810 | 882,301 | 7,672 | 1,265,783 |
| 1988 | 1,308,071 | 1,068,302 | 2,376,373 | 0 | 0 | 0 | 520,375 | 884,877 | 4,889 | 1,410,141 |
| 1989 | 1,602,543 | 1,251,204 | 2,853,747 | 0 | 0 | 0 | 474,559 | 830,500 | 8,35 | 1,313,194 |
| 1990 | 1,876,072 | 706,079 | 2,582,151 | 0 | 90 | 90 | 424,697 | 875,099 | 9,262 | 1,309,058 |
| 1991 | 536,669 | 12,444 | 549,113 | 3,521 | 0 | 3,521 | 543,582 | 565,395 | 4,879 | 1,113,856 |
| | | | | | | | | | | 1,666,490 |

(Continued)

Table 8-9 SWP Water Delivered by Category, 1962–2018 (acre-feet)

| Year | Table Water A | | | Article 21/Unscheduled | | | Other SWP Water Deliveries | | | Total Deliveries |
|--------------|--------------------------|-------------------|----------------------------|--------------------------|------------------|------------------------------|----------------------------|---------------------------------------|-----------------------------------|--------------------|
| | Municipal and Industrial | Agricultural | Total Table A ¹ | Municipal and Industrial | Agricultural | Total Article 21/Unscheduled | Other Water ² | Feather River Diversions ³ | Fish & Wildlife/ Recreation Water | |
| 1992 | 955,687 | 455,112 | 1,410,799 | 1,156 | 0 | 1,156 | 166,992 | 613,978 | 2,605 | 783,575 |
| 1993 | 1,069,258 | 1,243,978 | 2,313,236 | 0 | 0 | 0 | 256,853 | 822,589 | 2,609 | 1,082,051 |
| 1994 | 1,134,992 | 614,359 | 1,749,351 | 48,150 | 64,475 | 112,625 | 236,739 | 874,018 | 8,200 | 1,118,957 |
| 1995 | 801,570 | 1,165,523 | 1,967,093 | 17,984 | 46,346 | 64,330 | 85,560 | 860,077 | 2,575 | 948,212 |
| 1996 | 1,143,638 | 1,371,186 | 2,514,824 | 12,091 | 16,556 | 28,647 | 252,346 | 1,005,148 | 3,907 | 1,261,401 |
| 1997 | 1,220,200 | 1,040,183 | 2,260,383 | 2,814 | 18,618 | 21,432 | 322,000 | 993,211 | 4,146 | 1,319,357 |
| 1998 | 865,795 | 860,724 | 1,726,519 | 9,982 | 10,306 | 20,288 | 127,405 | 872,738 | 2,108 | 1,002,251 |
| 1999 | 1,405,311 | 1,333,592 | 2,738,903 | 61,191 | 96,879 | 158,070 | 85,312 | 1,108,672 | 4,324 | 1,198,308 |
| 2000 | 1,949,922 | 1,222,485 | 3,172,407 | 170,302 | 138,483 | 308,785 | 353,584 | 1,085,886 | 4,096 | 1,443,566 |
| 2001 | 1,173,731 | 407,305 | 1,579,291 | 14,971 | 33,174 | 48,145 | 632,403 | 1,077,997 | 2,942 | 1,713,342 |
| 2002 | 1,921,139 | 713,533 | 2,634,672 | 15,478 | 27,637 | 43,115 | 311,976 | 1,131,880 | 3,712 | 1,447,568 |
| 2003 | 2,188,647 | 787,170 | 2,975,817 | 23,019 | 36,809 | 59,828 | 160,087 | 1,006,995 | 2,862 | 1,169,944 |
| 2004 | 2,001,278 | 643,509 | 2,644,787 | 103,890 | 114,606 | 218,496 | 403,542 | 1,171,835 | 2,887 | 1,578,264 |
| 2005 | 1,923,222 | 904,034 | 2,827,256 | 186,787 | 544,296 | 731,083 | 92,858 | 1,074,706 | 1,515 | 1,169,079 |
| 2006 | 1,973,419 | 999,930 | 2,973,349 | 293,358 | 327,981 | 621,339 | 143,774 | 1,094,944 | 3,628 | 1,242,346 |
| 2007 | 1,670,711 | 510,040 | 2,180,751 | 186,570 | 123,403 | 309,973 | 598,789 | 1,193,237 | 2,581 | 1,794,607 |
| 2008 | 1,024,147 | 220,093 | 1,244,240 | 2,729 | 0 | 2,729 | 769,517 | 1,087,669 | 2,778 | 1,859,964 |
| 2009 | 1,036,052 | 349,214 | 1,385,266 | 6,032 | 0 | 6,032 | 709,885 | 1,125,147 | 2,047 | 1,837,079 |
| 2010 | 1,503,322 | 507,350 | 2,010,672 | 7,505 | 0 | 7,505 | 790,602 | 978,172 | 1,167 | 1,769,941 |
| 2011 | 1,871,986 | 975,586 | 2,847,572 | 207,307 | 213,384 | 420,691 | 388,632 | 1,028,542 | 1,593 | 1,418,767 |
| 2012 | 1,880,188 | 713,511 | 2,593,699 | 0 | 0 | 0 | 367,609 | 1,047,832 | 1,609 | 1,417,050 |
| 2013 | 1,198,284 | 424,928 | 1,623,212 | 0 | 0 | 0 | 614,203 | 1,166,635 | 1,641 | 1,782,479 |
| 2014 | 405,814 | 69,719 | 475,533 | 1,444 | 0 | 1,444 | 688,035 | 839,792 | 677 | 1,538,504 |
| 2015 | 620,511 | 226,036 | 846,547 | 690 | 0 | 690 | 585,388 | 675,530 | 721 | 1,261,639 |
| 2016 | 1,505,529 | 509,362 | 2,014,444 | 3,319 | 0 | 3,319 | 344,408 | 974,513 | 1,399 | 1,320,320 |
| 2017 | 2,060,712 | 1,043,061 | 3,103,773 | 165,671 | 131,248 | 296,919 | 471,962 | 967,206 | 775 | 1,385,943 |
| 2018 | 1,185,950 | 383,004 | 1,568,954 | 2,180 | 0 | 2,180 | 614,573 | 979,669 | 879 | 1,595,141 |
| Total | 54,355,838 | 34,377,722 | 88,733,560 | 1,656,634 | 7,663,965 | 9,320,599 | 16,058,241 | 47,449,729 | 158,534 | 63,666,504 |
| | | | | | | | | | | 161,720,663 |

¹ Includes Table A, Table A transfers, Table A exchanges, Carryover, and Pool Water.

² Includes water conveyed for SWP and non-SWP contractors.

³ Includes amounts of water diverted according to various water rights agreement.



Chapter 9

Power Resources

Citrus Reservoir and Citrus Pump Station are located in Mentone, California, in San Bernardino County.

Significant Events in 2018

Energy used at the 29 State Water Project (SWP) pumping and generating plants—excluding Castaic Lake Pumping-Generating Plant, which is owned and operated by Los Angeles Department of Water and Power—totaled 5.73 million megawatt hours (MWh). To meet SWP energy needs, the Department of Water Resources (DWR) purchased 2.15 million MWh of energy at a cost of \$67.89 million. This included (1) 0.80 million MWh of short-term energy from five energy marketers at a cost of \$26.97 million; (2) 0.41 million MWh from four renewable energy electric utilities at a cost of \$17.85 million; and (3) 0.94 million MWh of long-term energy at a cost of \$23.08 million. Additional associated energy costs totaled \$213.57 million, including transmission costs. The total cost of energy-related costs for 2018 was \$281.47 million.

Pursuant to WSPP (formerly known as Western Systems Power Pool) bilateral trades, transactions made under the Lodi Energy Center Power Sales Agreement, transactions under the California Independent System Operator (CAISO), and revenues from other long-term contracts, DWR received a total of \$99.19 million.

Information for this chapter was provided by the State Water Project Analysis Office, the SWP Power and Risk Office, the Hydropower License Planning and Compliance Office, and the SWP Operations Control Office.

State Water Project (SWP) water contractors depend on the SWP to obtain economical sources of power to deliver affordable water. Consequently, the Department of Water Resources (DWR) administers a comprehensive power resources program. Key elements of the program include projection of power needs, acquisition of long-term power resources and transmission services, short-term purchases or sales of power, and the strategic operation of generation and pumping facilities.

Power Resources Program

The goals of the SWP power resources program are to

- obtain reliable, environmentally sensitive, and competitively priced power resources and transmission services sufficient to operate the SWP;
- develop and manage power resources to minimize the cost of water deliveries to SWP Contractors;
- meet responsibilities and criteria of the Western Electricity Coordinating Council (WECC); and
- conform to regulations of the Federal Energy Regulatory Commission (FERC).

To achieve these goals, DWR constructed its own power facilities. Additionally, DWR enters into long-term contracts and short-term arrangements with other electric utilities and with the California Independent System Operator (CAISO) for transmission access and for power purchases and sales. DWR's generators and pumps provide a mix of regulation, spinning, and nonspinning reserves to the CAISO's ancillary services market. DWR's power resources program also takes advantage of SWP water storage and conveyance capacities, which cost-effectively control pump loads and generation.

Major Electric Utility Industry Developments

In 2018, CAISO focused on issues affecting grid reliability such as increased photovoltaic

energy generation, increased fossil fuel resource retirements within California, natural gas supply limitations due to Aliso Canyon gas storage concerns, and the continued need for flexible resources, including electric storage.

CAISO maintained initiatives to expand the CAISO Balancing Authority Area to include entities outside the current CAISO footprint. Among these initiatives are the Regional Resource Adequacy, Regional Integration of California Greenhouse Gas Compliance, and Energy Imbalance Market Governance.

DWR Participation in Electric Utility Industry Activities

DWR continued to participate in CAISO's stakeholder processes to help ensure tariff and business practice manuals are compatible with SWP operations. DWR's participation in CAISO stakeholder processes focused on the following primary elements in 2018:

- market initiatives roadmap
- stakeholder initiatives catalog
- two-tier real-time bid cost recovery
- day-ahead market enhancements
- resource adequacy enhancements
- reliability must-run and capacity procurement mechanism
- local capacity procurement for 2018 requirements
- annual resource adequacy processes including Path 26 allocation, import allocation, and net qualifying capacity

- flexible capacity needs study process for 2018
- flexible resource adequacy criteria and must-offer obligation, phase 2
- reliability services initiative, phase 2
- energy storage and distributed energy resources
- local market power mitigation enhancements
- transmission access charge structure
- intertie deviation settlement
- non-generator resource participation model
- storage as a transmission asset
- congestion revenue rights auction efficiency and reform
- budget and grid management charge process
- commitment cost enhancements, phase 3
- commitment costs and default energy bids enhancements
- regional integration and Energy Imbalance Market greenhouse gas compliance
- generator interconnection process enhancements
- reactive power requirements
- frequency response, phase 2
- excess behind the meter production
- transmission planning
- regional energy market

In addition, DWR participated in the California Energy Commission's planning processes by submitting a demand forecast to the commission.

Besides CAISO and the California Energy Commission stakeholder processes, DWR participated in FERC proceedings to help ensure that various market requirements or cost allocation mechanisms were appropriately structured. This included the following major processes and litigations (with FERC docket numbers given in parenthesis, if applicable):

- CAISO Aliso Canyon tariff amendments (ER16-1649, ER17-110)
- CAISO demand response report (ER06-615)
- CAISO energy imbalance market (ER18-461, ER13-1372, ER14-1729, ER15-33, ER15-1919, ER16-1518)
- FERC review of Pacific Gas & Electric Company (PG&E) and DWR Work Performance Agreement (ER18-656)
- CAISO resource adequacy (ER18-728, ER18-857, ER15-1825, ER18-1699, EL18-177)
- FERC review of Lake Elsinore Pumped Storage (EL18-131)
- CAISO commitment cost enhancements, phase 3 (ER18-1169)
- CAISO congestion revenue rights (ER18-1344, ER18-2034, ER19-26)
- CAISO tariff clarifications (ER18-1787)
- CAISO energy storage and distributed energy resources, phase 2 (ER18-2242)
- CAISO variable energy resource obligations (ER18-2380)
- CAISO Reliability Coordinator West services (ER18-2366)
- FERC review of jurisdiction over power purchase agreements (EL18-200)
- CAISO generator interconnection process (ER18-2498)
- CAISO recovery of marginal fuel-related costs (ER19-385)
- CAISO Order 841 compliance (ER19-468)
- CAISO imbalance conformance enhancements (ER19-538)
- CAISO custom load aggregation point (ER19-582)
- CAISO pricing enhancements (ER16-1886, ER17-415)
- CAISO energy storage enhancements (ER16-1735)
- CAISO definition of load serving entity (ER17-218)
- CAISO flexible ramping product (ER16-2023)

- CAISO frequency response, phase 1 (ER16-1483)
- CAISO local market power mitigation (ER16-1983)
- Department of Energy notice of proposed rulemaking for fuel-secure generation units (RM17-3, RM18-1)
- FERC notice of proposed rulemaking on uplift cost allocation and transparency (RM17-2, ER17-1459)
- FERC notice of proposed rulemaking on electric storage participation (AD16-20, RM16-23)
- PG&E transmission owner tariff filing (TO18) hearing process (ER16-2320)
- PG&E transmission owner tariff filing (TO19) proposal to increase transmission revenue requirement rates for retail and wholesale customers of CAISO (ER17-2154)
- San Diego Gas & Electric transmission owner tariff filing (TO5—Cycle 1) proposal to increase transmission revenue requirement rates for retail and wholesale customers of CAISO (ER19-221)
- Southern California Edison (SCE) transmission owner tariff filing (TO2018) proposal to increase transmission revenue requirement rates for retail and wholesale customers of CAISO (ER18-169)
- DATC PATH 15 transmission owner tariff filing proposal to change transmission revenue requirement (ER17-998)
- PG&E proposed annual update to its transmission revenue balancing account (ER19-11)
- San Diego Gas & Electric proposed annual update to its transmission revenue balancing account (ER19-209)
- SCE proposed annual update to its transmission revenue balancing account (ER19-220) and reliability services tariff (ER19-219)
- GridLiance West Transco purchase of Valley Electric Association high-voltage assets and initial formula rate (ER17-706)

NERC Reliability Compliance *Background*

The Energy Policy Act of 2005 assigned FERC the responsibility for bulk electric system reliability and the North American Electric Reliability Corporation (NERC) was subsequently tasked with establishing mandatory reliability standards for the bulk electric system. WECC is the regional entity responsible for the reliability and security of the bulk electric system in the Western Interconnection, which includes western Canada and the western United States. WECC oversees implementation of the reliability standards and validation of compliance, including assessment of penalties and sanctions. Details of the NERC reliability standards and the attributes of the compliance program can be found in Bulletin 132-11.

DWR's Internal Compliance Program

To prepare for the 2019 WECC audit, in 2018 DWR conducted an internal audit of applicable NERC Reliability Standards and completed the internal controls evaluation and compliance documentation of high-risk standards. In addition to the annual audit of its internal compliance program policies and associated processes, DWR evaluated standard-specific internal controls and improved its process for documenting compliance.

NERC requires that owners of bulk electric system transmission elements functionally map with a registered transmission planner and a transmission operator. In response, DWR established internal implementation plans and continued coordinating with WECC to meet those mapping requirements.

DWR also submitted, in compliance with the requirements of the reliability standards, its annual self-certification to WECC for 2017. The submittal certified DWR's compliance with the requirements of a WECC-determined subset of standards or provided a violation report supported by a mitigation plan to resolve the outstanding items. Violation of these standards can lead to financial penalties or reduced operating flexibility.

Greenhouse Gas Management

In 2018, DWR reported its calendar year 2017 pump load, generation, energy imports, and sulfur hexafluoride emissions to the California Air Resources Board. DWR's sulfur hexafluoride emissions were below the maximum allowable limit; however, because the allowable limit will be lower in future years, DWR continued to implement plans to further reduce its sulfur hexafluoride emissions. DWR also reported its 2017 greenhouse gas (GHG) emissions to The Climate Registry.

DWR procured compliance instruments to meet its contractual obligation for the Lodi Energy Center's Cap-and-Trade Program compliance cost.

Hydropower License Planning and Compliance

DWR holds three hydropower licenses and two conduit exemptions issued by FERC. The FERC projects and project numbers are listed below:

- Oroville Facilities, FERC Project No. 2100
- South SWP Hydropower, FERC Project No. 2426
- Pine Flat Transmission Line, FERC Project No. 2876
- Alamo Powerplant Project, FERC Project No. 14579
- Mojave Siphon Powerplant Project, FERC Project No. 14580

FERC licenses and conduit exemptions may contain terms and conditions related to operations, maintenance, engineering, dam safety, security, environmental and cultural resources, recreation, and public safety. FERC also conducts safety, security, and environmental inspections, and DWR is required to comply with all findings of the inspections. Compliance with FERC requirements is an important function of DWR operations since FERC has the authority to levy fines for noncompliance. FERC also considers the record of compliance when considering the conditions of license renewals.

Oroville Facilities Relicensing

On January 26, 2005, DWR filed an application with FERC requesting a new license for the Oroville Facilities. (More detailed information about the relicensing process is available in previous editions of Bulletin 132.) The original 50-year license expired January 31, 2007. On February 1, 2007, FERC issued an annual license with the same terms and conditions as DWR's expired license. The original license automatically renews annually until the new license is issued. Issuance of the new license had been delayed pending issuance of the National Marine Fisheries Service biological opinion, which was completed and filed with FERC on December 5, 2016. With the filing of the National Marine Fisheries Service biological opinion, FERC now has all required documentation to issue a new license, which is anticipated in the near future.

On February 1, 2018, FERC granted DWR's requested amendment to the Oroville Facilities recreation plan, thereby allowing DWR to construct a significant new set of facilities at the Loafer Creek Day Use Area. These new facilities include around 100 paved spaces, three boat ramp lanes, and one boarding float lane to offset the temporary closure of other Lake Oroville spillway recreational facilities and to provide additional recreation opportunities.

For more information about Oroville Facilities relicensing compliance, see Chapter 3, Environmental Programs, and Chapter 12, Recreation.

South SWP Hydropower Relicensing

The existing FERC license for South SWP Hydropower covers Warne, Castaic, and Devil Canyon power plants and expires on January 31, 2022.

On August 1, 2016, DWR filed two preliminary application documents and notices of intent with FERC for the relicensing of South SWP Hydropower and requested the Devil Canyon Powerplant (i.e., Devil Canyon Project) be relicensed separately from Warne and Castaic power plants. The first preliminary application document and notice of intent were submitted by DWR and Los Angeles Department of Water and Power (LADWP) for the relicensing of Warne and Castaic power plants. (LADWP operates and maintains the Castaic Powerplant and is a joint licensee with DWR on FERC Project No. 2426.) Warne and Castaic power plants will continue to be referred to as South SWP Hydropower. The second preliminary application document and notice of intent were filed solely on behalf of DWR for the relicensing of the Devil Canyon Project.

With the August 1, 2016, submission of the Devil Canyon Project preliminary action document, DWR also requested FERC's approval to use the Traditional License Process in lieu of the Integrated Licensing Process, which is FERC's default relicensing process. DWR and LADWP will use the Integrated License Process for South SWP Hydropower relicensing.

On September 30, 2016, FERC issued a notice to proceed and approved DWR's request to use the Traditional License Process for the Devil Canyon Project. Upon completion of the relicensing effort, FERC

will issue one new license to DWR and LADWP as co-licensees for the Warne and Castaic power plants, which will retain the name and number South SWP Hydropower, FERC Project No. 2426, and one new license to DWR for the Devil Canyon Powerplant, to be assigned the name and number Devil Canyon Project, FERC Project No. 14797.

For both P-2426 and P-14797 from April 2018 onward, DWR met with State, federal, and non-governmental organization stakeholder agencies to discuss development of protection, mitigation, and enhancement (PM&E) measures. These meetings were a collaborative effort to establish relationships and refine DWR's commitments with respect to environmental, cultural, and recreational resource issues to gain early consensus with stakeholders.

South SWP Hydropower, FERC Project No. 2426.

DWR and LADWP consulted with various Native American tribes whose traditional sites could potentially be affected by the project, and on September 21, 2017, concurrence was obtained from the State Historic Preservation Officer on the Area of Potential Effects for cultural resources and tribal resources studies. On May 15, 2018, DWR and LADWP submitted an Initial Study Report for the South SWP Hydropower Project documenting relicensing study progress to date and any variances to the original study plan approved by FERC on June 14, 2017. Stakeholders reviewed and commented on the ISR with suggestions for study modifications or new studies. On September 7, 2018, upon consideration of all stakeholder requests, FERC approved the final modified DWR and LADWP study plan for the South SWP Hydropower Project.

By the end of 2018, the field work investigations of all 22 studies for the South SWP Hydropower Project had begun. Of these, field work for 14 investigations had been completed and the remaining investigations are ongoing. One study

completed both the field work and the Field Results and Data Summary.

Devil Canyon Project, FERC Project No. 14797.

For the Devil Canyon Project, the field work investigations and nine of the 11 Field Results and Data Summaries were completed by the end of 2018. The remaining two studies were ongoing.

Existing SWP Power Facilities

Figure 9-1 shows the names, locations, and nameplate capacities of the SWP's primary power facilities.

Hydroelectric

Hydroelectric generation provides the largest share of SWP power resources. The combined Hyatt Pumping-Generating Plant and Robie Thermalito Pumping-Generating Plant (Hyatt-Thermalito) generate about 2.2 billion kilowatt hours of energy in a median water year, while the 3 megawatts (MW) from the Thermalito Diversion Dam Powerplant add another 24 million kilowatt hours per year.

Generation at California Aqueduct recovery plants—Alamo, Devil Canyon, Gianelli, Mojave Siphon, and Warne—varies with the amount of water conveyed. These five plants generate about one-sixth of the total energy used by the SWP.

Renewables

To meet its GHG reduction goals, DWR executed agreements with various entities to purchase zero GHG emission energy used by the SWP.

DWR Power Planning Activities

DWR's power planning for the SWP includes periodic development of an Integrated Resource Plan, which concludes with plans for long-term and mid-term power procurements necessary to operate the SWP and ensures rate stability through energy market disruptions.

DWR's power planning also includes the Renewable Energy Procurement Plan, which is part of its *Climate Action Plan Phase I: Greenhouse Gas Emissions Reduction Plan*. Information about the Renewable Energy Procurement Plan and the *Climate Action Plan* is available in previous editions of Bulletin 132.

Contractual Resource Arrangements

Through joint development, DWR obtains a significant amount of capacity and energy for SWP operations from other utilities throughout California and the Southwest. As needed, DWR also transacts with marketers and other utilities.

Joint Developments

In 1966, DWR entered into a contract with LADWP for joint development of the West Branch of the California Aqueduct. LADWP constructed and operates Castaic Powerplant, which is a pumped-storage facility connected to the LADWP transmission system at the Sylmar Substation. DWR receives capacity and energy at the Sylmar Substation based on weekly water schedules through the West Branch.

Gianelli Pumping-Generating Plant is a joint-use facility owned and operated by DWR and the U.S. Bureau of Reclamation. DWR's share is 222 MW, and the U.S. Bureau of Reclamation's share is 202 MW.

Long-term Purchase Agreements

In 1979, DWR and Kings River Conservation District executed an agreement under which DWR receives the output of the 165 MW hydroelectric Pine Flat Powerplant. The power plant supplies DWR with about 400,000 megawatt hours (MWh) of energy in median water years.

In 2017, DWR and The Metropolitan Water District of Southern California (Metropolitan)



Figure 9-1 Names, Locations, and Nameplate Capacities of Primary State Water Project Power Facilities

executed an agreement under which DWR receives the output of five hydroelectric plants totaling 30 MW. DWR also receives renewable energy credits from four of the five hydroelectric plants. The agreement's termination date is September 30, 2019.

In 2010, DWR and various public agencies executed an agreement with the Northern California Power Agency to finance, construct, operate, and maintain the Lodi Energy Center—a 280 MW natural gas combined cycle combustion turbine generation facility that Northern California Power Agency would own and operate, and from which DWR would receive 33.5 percent of the output. The facility achieved its commercial operation date on November 27, 2012.

Originally executed in 2013 and amended in 2014, the 20-year agreement for the 45 MW RE Camelot photovoltaic solar generation facility provides DWR with approximately 124,000 MWh of solar energy and renewable credits annually until 2034.

In 2015, DWR and Solar Star California XLIV executed a 20-year agreement, with an optional 10-year extension, under which DWR receives approximately 24,700 MWh of solar energy and renewable energy credits annually from the Pearblossom Solar Facility, which is adjacent to the Pearblossom Pumping Plant.

In 2015, DWR and Solverde 1 executed a 20-year agreement under which DWR receives approximately 230,000 MWh of solar energy and renewable energy credits annually from the 85 MW solar plant.

In 2015, DWR and Metropolitan executed an agreement under which DWR receives the output of five small hydroelectric plants totaling 51.4 MW and approximately 54,574 MWh of energy and renewable energy credits. The agreement's termination date is December 31, 2020.

In 2017, DWR, the U.S. Department of Energy, the Western Area Power Administration (Desert South West Region), and the U.S. Bureau of Reclamation executed a 50-year agreement under which DWR receives up to 6,500 MWh of zero-emission energy annually from the Boulder Canyon Project (Hoover Dam), located near Boulder City, Nevada.

The renewable energy procured under these agreements will further increase the amount of renewable and zero GHG emission energy used by the SWP and will help DWR meet its GHG reduction goals.

Short-term Purchase Agreements

DWR typically engages in short-term power transactions with member utilities and energy marketers under the WSPP. These transactions include energy and capacity to meet the requirements of resource adequacy, which is a planning and procurement process to ensure adequate resources.

Load Management

DWR operates its pumps through an extensive computerized network. This control system, coupled with the operating flexibility of DWR's pumping and generating plants provided by storage reservoirs, allows DWR to maximize pumping during periods when power costs are lower and maximize power generation when power costs are higher. By taking advantage of this scheduling flexibility, when not restricted by operating requirements, SWP pump load and generation are optimized to reduce the net cost of power needed for SWP water deliveries.

Demand Response

DWR is the largest single supplier of demand response in the CAISO market via a participating load agreement under which DWR bids SWP load to be curtailed by CAISO when the price of energy in the CAISO

market reaches DWR's bid price. Due to DWR's water delivery priority, these bids are normally restricted to contingency events.

Contractual Transmission Agreements

DWR has contracts with CAISO, PG&E, and SCE for transmission interconnection and network transmission service for SWP power resources and pumping loads. Detailed information about past contractual transmission agreements is available in previous editions of Bulletin 132.

Additionally, DWR has wholesale distribution service agreements with SCE for service over SCE's distribution system from the CAISO interchange points to SWP loads and resources.

In 2016, DWR and SCE coordinated engineering, design, and construction of the transmission facilities for Citrus Pump Station, located in San Bernardino County. The Citrus Pump Station entered commercial operation in January 2018. SCE subsequently performed a final true-up of DWR-SCE Citrus Pump Station Interconnection Facilities Agreement costs. It yielded a reduction in the monthly interconnection facilities charge and a refund of the income tax component of contribution security tax.

In December 2017, DWR and SCE executed a construction agreement in which SCE provided funding for DWR to perform engineering, design, and construction of relay upgrades at DWR's Mojave Siphon and Devil Canyon power plants. Work continued in 2018 with anticipated completion by the end of 2020.

In July 2018, DWR gave one-year advance written notice of termination to PG&E, Northern California Power Agency, and City of Santa Clara dba Silicon Valley Power for the Agreement of Cotenancy in the Castle Rock Junction–Lakeville 230 kV Transmission

Line (Agreement). Termination of DWR's transmission capacity rights and obligations under the Agreement will be effective August 1, 2019.

SWP Power Operations in 2018

Tables 9-1 through 9-4, at the end of the chapter, present historical information about SWP power operations for calendar year 2018, including energy consumed, generated, purchased, and sold. Note that in some instances, these tables may not sum as expected due to rounding.

Energy Consumed

In 2018, energy used for SWP operations at the 29 SWP pumping and generating plants totaled 5.73 million MWh. According to the terms and conditions of various water conveyance contracts and exchange agreements, some water belonging to the Central Valley Project is pumped through Banks and Dos Amigos pumping plants and Gianelli Pumping-Generating Plant. The U.S. Bureau of Reclamation furnishes additional energy for this purpose.

Table 9-1 shows the amount of energy used each month at SWP pumping and power generating plants to operate the SWP in 2018.

Energy Generated and Purchased

Table 9-2 shows the amounts of energy generated at SWP facilities in 2018, as well as energy purchased for SWP operations.

Hydroelectric

The Hyatt-Thermalito power complex in Oroville generated 1,314,811 MWh of energy in 2018.

Energy generated at SWP aqueduct recovery plants—Gianelli, Alamo, Mojave

Siphon, Devil Canyon, and Warne—totaled 1,237,090 MWh.

Natural Gas

The SWP received generation from the Lodi Energy Center. SWP's 33.5 percent share of the Lodi Energy Center's energy output for 2018 was 471,188 MWh.

Contractual Resource Arrangements in 2018

SWP power operations rely on contractual arrangements as well as SWP facilities. These contractual arrangements include joint development projects and energy purchases.

Joint Developments

Through the *West Branch Cooperative Development Agreement* with LADWP, DWR receives energy based on the amount of water scheduled through the West Branch. In 2018, LADWP provided 381,536 MWh for DWR's share of energy generated at Castaic Powerplant.

DWR's share of Gianelli Pumping-Generating Plant used 242,058 MWh and generated 124,031 MWh of energy in 2018.

Purchases and Costs

Table 9-3 shows the amounts of energy, transmission, and other services purchased in 2018. Amounts include contractual short-term and long-term energy trades and associated transactions of energy, transmission, capacity, and ancillary services with CAISO, and miscellaneous energy-related costs.

DWR transacted 2.15 million MWh of energy at a cost of \$67.89 million. Other SWP-related costs include \$5.40 million for transmission service outside CAISO and \$208.17 million for operation, maintenance, and miscellaneous CAISO charges, among other things. Key costs associated with the latter amount are: (1) \$4.32 million for debt

service and \$4.71 million for operations and maintenance, both related to Pine Flat Powerplant; and (2) \$9.4 million for debt service and \$6.81 million for capital improvement, management, operations, and maintenance, connected to the Lodi Energy Center. The \$5.40 million for transmission service outside CAISO includes \$0.42 million for PG&E and \$3.81 million for SCE, among other things.

Long-term Purchase Agreements. According to terms of the Kings River Conservation District contract, DWR receives the total output of the 165 MW Pine Flat Powerplant. In 2018, the power plant provided 340,064 MWh of energy to the SWP at an energy component cost of \$2.61 million.

Under the Metropolitan Small Hydro contract, DWR purchased 120,566 MWh of energy in 2018 from four small hydroelectric power plants on the Metropolitan system at a cost of \$6.90 million.

Also, under the Lodi Energy Center Power Sales Agreement with Northern California Power Agency, DWR received a purchase credit of \$24.23 million based on 471,188 MWh generated at the Lodi Energy Center plant during 2018 and conveyed to the CAISO power grid. This amount is shown as revenue in Table 9-4.

Under renewable energy contracts with RE Camelot, LLC; Metropolitan; Solar Star California XLIV, LLC; and Solverde 1, LLC, DWR received a total of 414,315 MWh at a cost of \$17.85 million.

Finally, under the *Boulder Canyon Project Agreement* with the U.S. Department of Energy, Western Area Power Administration, DWR received 5,228 MWh at a cost of \$67,349.

Short-term Energy Purchase Agreements. Existing resources and long-term power and

transmission contracts ensure that the SWP has enough power to meet long-term needs.

When SWP power requirements exceed resources during daily operations, short-term purchases make up the difference. In 2018, the SWP purchased 0.80 million MWh of short-term energy under agreements with bilateral marketers at a cost of \$26.97 million. These purchases are reflected in Table 9-3.

Contractual Sales of Excess Power

In 2018, DWR received \$99.19 million in energy revenues. This includes (1) \$27.18 million connected to bilateral trades and \$37.86 million for ancillary service transactions, both made through CAISO; and (2) \$33.71 million associated with long-term contracts, including, among other things, \$24.41 million related to the Lodi Energy Center Power Sales Agreement with Northern California Power Agency.

Other Long-term Agreements

Under the terms of the contract with the U.S. Department of Energy, Western Area Power Administration, DWR acts as CAISO scheduling coordinator for the joint-use facilities of the San Luis Unit and certain DWR pumping facilities occasionally used to pump federal water. During 2018, DWR incurred a net cost of \$1.7 million. The actual CAISO charges and revenue associated with this amount are included—but not listed independently—on Tables 9-3 and 9-4.

Forecasting Power Operations

Each year, after reviewing the SWP Contractors' water delivery requests and the construction schedule for future facilities, DWR forecasts the associated energy consumption and generation through 2035. Short-term power requirements, based on actual water supply and reservoir storage

levels, are determined for the current and two ensuing years of operation. Long-term operational studies for the remaining years are based on median-year water supply conditions and optimal reservoir storage levels. The forecast also includes losses in reservoirs and aqueducts, recreation water, and water to replace storage in reservoirs south of the Delta.

Actual SWP power requirements may vary significantly from the forecast amounts. Those variations are due to the amount of water available and delivered in a given year. For example, dry conditions in Northern California could result in a reduction in the amount of water available for delivery and for generation. If full deliveries could not be made, less power would be used. Power requirements could also decrease during a wet year because of the availability of local water in the San Joaquin Valley or Southern California.

Conversely, power requirements could exceed the amount originally forecast if actual water deliveries are greater than the amounts estimated. For example, if additional pumping is needed to refill reservoirs south of the Delta after an unexpectedly dry year, more power would be used.

Table 9-1 Energy Used at Pumping Plants and Power Plants in 2018, by Month (megawatt-hours)

| Pumping Plants and Power Plants | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| Hyatt-Thermalito Power Complex (station service) | 23 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 12 | 49 | 4 | 4 | 100 |
| North Bay Interim Pumping Plant | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cordelia Pumping Plant | 732 | 762 | 349 | 149 | 904 | 1,253 | 1,349 | 1,280 | 1,184 | 1,110 | 1,077 | 953 | 11,102 |
| Barker Slough Pumping Plant | 464 | 614 | 255 | 58 | 850 | 1,161 | 1,165 | 1,034 | 1,067 | 916 | 1,019 | 579 | 9,182 |
| South Bay Pumping Plant | 9,843 | 8,950 | 10,900 | 10,951 | 12,648 | 10,126 | 14,208 | 12,255 | 8,688 | 1,902 | 3,447 | 5,641 | 109,558 |
| Del Valle Pumping Plant | 11 | 10 | 317 | 320 | 231 | 5 | 208 | 50 | 9 | 8 | 6 | 6 | 1,182 |
| Banks Pumping Plant | 53,774 | 32,824 | 64,486 | 30,833 | 14,515 | 13,604 | 28,968 | 100,627 | 82,792 | 61,047 | 22,712 | 65,657 | 571,838 |
| Gianelli Pumping-Generating Plant (SWP share) | 22,959 | 3,203 | 68,983 | 13,905 | 18 | 32 | 33 | 29,776 | 24,272 | 26,511 | 5,436 | 46,930 | 242,058 |
| Dos Amigos Pumping Plant (SWP share) | 24,157 | 21,810 | 5,480 | 14,130 | 11,809 | 27,138 | 30,462 | 31,890 | 26,994 | 21,776 | 16,232 | 11,856 | 243,724 |
| Buena Vista Pumping Plant | 34,034 | 26,436 | 20,720 | 21,335 | 22,399 | 23,635 | 33,428 | 33,595 | 30,054 | 24,837 | 25,542 | 14,178 | 310,192 |
| Teerink Pumping Plant | 37,505 | 27,580 | 24,248 | 23,668 | 22,705 | 21,519 | 32,270 | 32,776 | 30,269 | 24,957 | 27,381 | 15,053 | 319,931 |
| Chrisman Pumping Plant | 83,963 | 61,431 | 54,281 | 52,764 | 49,876 | 46,103 | 69,796 | 71,877 | 66,368 | 54,672 | 60,857 | 33,354 | 705,343 |
| Edmonston Pumping Plant | 307,095 | 220,497 | 193,662 | 184,187 | 173,892 | 159,519 | 245,763 | 254,641 | 238,298 | 194,247 | 219,152 | 119,680 | 2,510,631 |
| Alamo Powerplant (station service) | 0 | 0 | 9 | 5 | 3 | 4 | 16 | 0 | 32 | 61 | 60 | 59 | 248 |
| Pearblossom Pumping Plant | 59,522 | 38,814 | 24,966 | 23,951 | 22,582 | 22,885 | 50,508 | 47,069 | 46,641 | 36,517 | 40,048 | 26,000 | 499,504 |
| Pine Flat Powerplant (station service) ¹ | 238 | 217 | 238 | 95 | 0 | 0 | 0 | 0 | 4 | 97 | 209 | 236 | 1,334 |
| Mojave Siphon Powerplant (station service) | 0 | 4 | 15 | 8 | 12 | 2 | 0 | 0 | 0 | 4 | 1 | 9 | 69 |
| Devil Canyon Powerplant (station service) | 0 | 1 | 88 | 29 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 149 |
| Oso Pumping Plant | 11,456 | 9,630 | 12,210 | 11,273 | 10,040 | 8,180 | 6,820 | 8,726 | 6,972 | 7,362 | 9,504 | 3,435 | 105,608 |
| Warne Powerplant (station service) | 1 | 12 | 160 | 0 | 55 | 22 | 93 | 118 | 400 | 281 | 117 | 332 | 1,592 |
| Las Perillas Pumping Plant | 195 | 646 | 338 | 699 | 1,210 | 1,567 | 1,717 | 1,620 | 956 | 650 | 114 | 196 | 9,907 |
| Badger Hill Pumping Plant | 510 | 1,647 | 895 | 1,783 | 3,090 | 3,940 | 4,255 | 3,963 | 2,370 | 1,619 | 273 | 508 | 24,853 |
| Devil's Den Pumping Plant | 1,677 | 1,626 | 1,319 | 1,531 | 1,909 | 2,260 | 2,335 | 2,346 | 1,952 | 1,857 | 789 | 1,678 | 21,280 |
| Bluestone Pumping Plant | 1,563 | 1,522 | 1,225 | 1,426 | 1,783 | 2,103 | 2,181 | 2,194 | 1,823 | 1,731 | 740 | 1,563 | 19,853 |
| Polonio Pass Pumping Plant | 1,691 | 1,641 | 1,327 | 1,574 | 1,944 | 2,251 | 2,340 | 2,346 | 1,951 | 1,860 | 786 | 1,695 | 21,406 |
| Greenspot Pump Station | 55 | 50 | 54 | 52 | 56 | 65 | 73 | 66 | 61 | 58 | 52 | 54 | 695 |
| Crafton Hills Pump Station | 1,884 | 1,481 | 48 | 1,034 | 1,714 | 1,911 | 2,014 | 1,939 | 1,982 | 2,454 | 1,855 | 1,387 | 19,704 |
| Cherry Valley Pump Station | 124 | 116 | 14 | 76 | 81 | 83 | 85 | 86 | 81 | 80 | 72 | 87 | 984 |
| Citrus Pump Station | 2,470 | 1,650 | 64 | 1,422 | 2,183 | 2,458 | 2,998 | 2,515 | 2,511 | 2,881 | 2,230 | 1,555 | 24,938 |
| Total Energy Required for the SWP² | 655,946 | 463,174 | 486,659 | 397,264 | 356,507 | 351,835 | 533,089 | 642,791 | 577,743 | 469,534 | 439,713 | 352,710 | 5,726,966 |

¹ Pine Flat station service energy provided by CAISO under Market Redesign and Technology Upgrade (MRTU) operation.² Totals may not sum as expected due to rounding.

Table 9-2 Energy Generated and Purchased in 2018, by Month (megawatt-hours)

| Sources of Energy | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| SWP Energy Sources | | | | | | | | | | | | | |
| Hyatt-Thermalito Power Complex | 59,484 | 44,662 | 45,144 | 165,096 | 122,460 | 146,309 | 218,833 | 235,231 | 167,438 | 42,443 | 30,220 | 37,491 | 1,314,811 |
| Gianelli Pumping-Generating Plant (SWP share) | 0 | 18,540 | 0 | 9,828 | 17,308 | 39,307 | 29,839 | 757 | 361 | 762 | 7,328 | 0 | 124,031 |
| Alamo Powerplant | 9,680 | 7,039 | 4,831 | 4,617 | 4,694 | 4,566 | 5,406 | 8,944 | 2,666 | 0 | 0 | 0 | 52,442 |
| Mojave Siphon Powerplant | 7,315 | 4,271 | 2,787 | 2,616 | 2,243 | 2,190 | 5,560 | 5,186 | 5,250 | 969 | 1,843 | 2,937 | 43,165 |
| Devil Canyon Powerplant | 107,797 | 65,243 | 51,691 | 41,076 | 37,811 | 39,768 | 87,809 | 85,233 | 82,460 | 66,622 | 76,317 | 45,491 | 787,317 |
| Warne Powerplant | 26,582 | 21,418 | 24,752 | 24,991 | 21,425 | 17,968 | 15,014 | 19,090 | 14,139 | 16,612 | 21,074 | 7,069 | 230,134 |
| <i>Subtotal</i> | 210,838 | 161,173 | 129,205 | 248,223 | 205,940 | 250,108 | 362,460 | 354,441 | 272,315 | 127,409 | 136,781 | 92,988 | 2,551,901 |
| Energy Sources from Long-term Agreements | | | | | | | | | | | | | |
| Castaic Powerplant | 42,576 | 34,128 | 41,760 | 39,985 | 35,304 | 28,752 | 25,795 | 30,216 | 23,064 | 26,568 | 34,764 | 18,624 | 381,536 |
| Metropolitan Small Hydro Generation | 9,307 | 6,252 | 1,857 | 10,020 | 8,896 | 9,507 | 11,937 | 11,854 | 13,523 | 12,305 | 15,891 | 9,215 | 120,565 |
| Pine Flat Powerplant (Kings River Conservation District) | 0 | 0 | 0 | 0 | 20,966 | 78,703 | 110,497 | 92,269 | 29,466 | 8,162 | 0 | 0 | 340,064 |
| Energy to Metropolitan for CRA ¹ Pumping | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Energy from Metropolitan for CRA ¹ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lodi Energy Center | 47,300 | 37,076 | 46,385 | 4,940 | 2,961 | 11,861 | 57,938 | 59,573 | 25,988 | 66,899 | 53,125 | 57,142 | 471,188 |
| Hoover-Boulder Canyon Project | 257 | 425 | 466 | 592 | 591 | 531 | 455 | 415 | 420 | 398 | 409 | 263 | 5,228 |
| Renewable Energy ² | 21,182 | 29,178 | 33,615 | 40,505 | 47,412 | 45,595 | 40,827 | 39,143 | 39,673 | 34,806 | 24,122 | 18,255 | 414,315 |
| Purchases | | | | | | | | | | | | | |
| Purchases (Firm and WSPP Contracts) | 65,600 | 57,600 | 62,200 | 64,000 | 65,600 | 65,300 | 73,450 | 66,050 | 71,700 | 67,050 | 68,725 | 68,800 | 796,075 |
| CAISO Energy ³ | 306,166 | 174,417 | 217,556 | -27,027 | -85,940 | -158,456 | -74,105 | 111,206 | 148,886 | 200,998 | 159,021 | 144,559 | 1,117,284 |
| <i>Subtotal</i> | 492,388 | 339,077 | 403,839 | 153,982 | 153,527 | 113,588 | 228,566 | 347,924 | 331,417 | 409,024 | 356,058 | 316,864 | 3,646,255 |
| Total Resources | 703,246 | 500,250 | 533,044 | 402,205 | 359,468 | 363,696 | 591,027 | 702,364 | 603,731 | 536,433 | 492,838 | 409,852 | 6,198,156 |
| Less Energy Sales ⁴ | -47,300 | -37,076 | -46,385 | -4,940 | -2,961 | -11,861 | -57,938 | -59,573 | -25,988 | -66,899 | -53,125 | -57,142 | -471,188 |
| Total Energy Provided to the SWP⁵ | 655,946 | 463,174 | 486,659 | 397,264 | 356,507 | 351,835 | 533,089 | 642,791 | 577,743 | 469,534 | 439,713 | 352,710 | 5,726,968 |

¹ Contractual Resource Arrangement (CRA).² RE Camelot LLC, Solar Star California XIV, LLC, The Metropolitan Water District of Southern California, & Solverde 1, LLC.³ Energy provided by CAISO for balancing the total SWP loads and resources.⁴ Includes Power Received under Lodi Energy Center Power Sales Agreement as a purchase credit.⁵ Totals may not sum as expected due to rounding.

Table 9-3 Energy, Transmission, and Related Costs in 2018

| Category | Energy Trades (MWh) | Energy Cost (in dollars) | Transmission Cost Outside CAISO (in dollars) | Energy-Related Costs (in dollars) | Total Cost (in dollars) |
|--|--------------------------------|-------------------------------------|---|--|------------------------------------|
| CAISO–Bilateral Trades | | | | | 0 |
| CAISO–Other ¹ | | | | 175,401,277 | 175,401,277 |
| Energy Marketers–Bilaterals (WSPP) | 796,075 | 26,967,212 | | 908,369 | 27,875,581 |
| Long-term Contracts ² | 937,046 ^a | 23,079,271 ^b | 5,399,443 | 31,862,112 | 60,340,826 |
| Long-term Energy Markets–Renewable Energy ³ | 414,315 | 17,847,319 | | | 17,847,319 |
| Total | 2,147,436 | 67,893,802 | 5,399,443 | 208,171,758 | 281,465,003 |

¹ Transmission, capacity, imbalance energy, etc.² Kings River Conservation District, Los Angeles Department of Water and Power, The Metropolitan Water District of Southern California, Northern California Power Agency, Pacific Gas & Electric Company, Southern California Edison, and Boulder Canyon Project.³ RE Columbia, LLC, The Metropolitan Water District of Southern California, Solar Star California, XLIV, LCC, and Solverde 1 LLC.^a Includes 471,188 MWh generated at the Northern California Power Agency Lodi Energy Center.^b Energy cost for LEC PP generation is based on associated fuel cost.**Table 9-4 Energy and Energy-related Revenue in 2018 per Contract Agreements**

| Category | Energy Trades (MWh) | Energy Revenues (in dollars) | Other Energy- related Revenue (in dollars) | Total Revenues (in dollars) |
|---|------------------------------------|---|---|--|
| CAISO–Bilateral Trades | | 27,181,505 | | 27,181,505 |
| CAISO–Other ¹ | | | 37,857,052 | 37,857,052 |
| Energy Marketers–Bilaterals | 1,400 | 49,502 | 383,133 | 432,635 |
| NCPA Long-Term Energy Contract (LEC) | 471,188 | 24,230,484 | 182,786 | 24,413,270 |
| Long-term Contracts ² | | | 5,560,452 | 5,560,452 |
| Long-term Renewable Energy Contracts ³ | | | 3,740,353 | 3,740,353 |
| Total | 472,588 | 51,461,491 | 47,723,776 | 99,185,267 |

¹ Transmission, capacity, imbalance energy, etc.² Los Angeles Department of Water and Power, Northern California Power Agency, City of Santa Clara, and Western Area Power Administration.³ CAISO settlement.



Chapter 10

Facilities Maintenance

Repaired Oroville Dam service spillway clean-up work.

Significant Events in 2018

The Oroville Spillway Recovery Project achieved its goal of substantially completing the reconstruction of the service spillway and making improvements to the emergency spillway by November 1, 2018. In its 22nd report (December 2018), the Spillway Recovery Board affirmed that the reconstructed Oroville Dam spillways were completed in accordance with the design documents and that the restored condition of the flood control outlet chute and emergency spillway is a significant improvement over the original design.

Detailed spillway and stream release inspection and condition assessment reports were issued for the Del Valle, Castaic, Pyramid, Cedar Springs, Antelope, Frenchman, and Grizzly Valley dam spillways in 2018.

Potential failure mode analysis workshops for Feather River Fish Barrier, Thermalito Afterbay, and Thermalito Diversion dams were conducted in October 2018. Spillway-focused potential failure mode analysis workshops were also held for Pyramid and Cedar Springs dams.

The seismic remediation of Perris Dam was completed in April 2018 under the Perris Dam Seismic Remediation Project (Specification No. 14-03). The Department of Water Resources recertified and approved Perris Dam reservoir refilling to a water surface elevation of 1,590.5 feet (North American Vertical Datum of 1988).

Information for this chapter was provided by the Division of Operations and Maintenance, the Division of Safety of Dams, the Division of Integrated Regional Water Management, and the State Water Project Analysis Office.

The Department of Water Resources (DWR), through the Division of Operations and Maintenance (O&M), monitors all State Water Project (SWP) facilities to ensure safety and reliability. DWR is required, by federal and State law, to contract periodically with independent consultants to review the safety of SWP dams and power facilities.

Dam Safety Inspections and Reports

DWR conducts several types of inspections on SWP facilities to ensure that each dam is safe for continued operation. The Dam Safety Services (DSS), Division of Safety of Dams (DSOD), Federal Energy Regulatory Commission (FERC), and the U.S. Bureau of Reclamation (Reclamation) conduct various inspections and safety analyses to ensure the safety of SWP dams.

O&M staff, through the DSS and field divisions, inspect, collect, and analyze data for all SWP dams and appurtenant structures. DSS also conducts performance and instrumentation analyses and prepares annual reports that are distributed to the field divisions for scheduling and maintenance. The reports are also sent to FERC and to DSOD for their review.

In accordance with Division 3 of the California Water Code, DSOD has regulatory authority over jurisdictional dams owned and operated by DWR.

DSOD is responsible for overseeing all design modifications and construction activities on jurisdictional SWP dams. In accordance with the California Code of Regulations (Title 23, Division 2, Chapter 1, Article 5), DSOD also works to prepare and coordinate the Director's Safety Review Board (DSRB) events that include a periodic evaluation of SWP dam conditions with regard to safety and performance.

Additionally, DSOD engineers inspect SWP dams annually, on a fiscal year basis, to ensure they remain safe, are performing as intended, and are not developing problems. These annual inspections also include in-depth instrumentation review of dam surveillance data. DSOD engineers and geologists evaluate proposed modifications to existing dams, as well as designs for any proposed new jurisdictional dams. DSOD oversees construction activities to ensure work is performed in accordance with approved plans and specifications. DSOD also performs comprehensive independent reevaluations of dams and their appurtenant structures.

FERC inspects all FERC-licensed SWP facilities annually. These inspections include a review of significant events, instrumentation data, and the visual appearance of each dam, penstock, or power plant. Under FERC's requirements, consulting engineers and geologists are retained to evaluate SWP dam facilities every five years.

DWR contracts periodically with independent consultants to review the safety of SWP dams and power facilities, except for Pearblossom Spill Basin Dam. Pearblossom Spill Basin Dam was originally designed to be used during misoperation at the Pearblossom Pumping Plant; the spill basin was never fully completed, has never been used, and is not under DSOD jurisdiction.

Routine Inspections

During 2018, O&M, along with agency representatives from DSOD, FERC, and Reclamation, conducted routine periodic

inspections for all the dams in the Oroville Field Division, Delta Field Division, San Luis Field Division, and Southern Field Division. Table 10-1 shows SWP dam inspections conducted in 2018.

Joint-use Facility Inspection

The four dams in the San Luis Field Division (Sisk Dam, O'Neill Dam, Los Banos Detention Dam, and Little Panoche Detention Dam) are used jointly with Reclamation and are not under DSOD jurisdiction.

Reclamation conducts comprehensive reviews of these joint-use facility dams every eight years. The latest comprehensive reviews for Sisk Dam and O'Neill Dam occurred in 2015; the latest comprehensive reviews for the Los Banos and Little Panoche detention dams occurred in 2016.

Periodic Facility Reviews are also conducted by Reclamation every eight years using an alternate schedule spaced between the comprehensive reviews. A joint annual site inspection of the facilities with Reclamation, DSS, and San Luis Field Division was conducted in July 2018.

Independent Reviews Director's Safety Review Board

Under California Water Code, Section 6056, DWR is required to retain a consulting board to review: (1) the adequacy of the design of any dam or reservoir DWR proposes to construct; and (2) the safety of the completed construction, including the terms and conditions for the certificate of approval. In accordance with this California Water Code requirement, DWR formed the DSRB.

The DSRB consists of three independent consultants that meet at least once every five years to review the operational performance of DWR-owned dams and more frequently when consulting on new

dams. The DSRB independently reviews and assesses safety conditions of SWP dams.

DSRB consultants are selected based on their knowledge of geotechnical, structural, and civil engineering, including their experience evaluating dam performance. Their independent assessments include the review of dam performance during earthquakes, evaluation of instrumentation data, inspection of each dam, and evaluation of studies performed by DWR. The DSRB then prepares reports on each dam, approving dams as safe for continued operation and making recommendations. Based on DSRB recommendations, DWR prepares action plans. In 2018, there were five DSRB inspections, one each for Bethany, Dyer, Clifton Court Forebay, Del Valle, and Patterson dams.

FERC Reviews

FERC conducts dam safety inspections in conjunction with O&M on an annual basis for SWP dams under its jurisdiction. DWR is the licensee for FERC Project No. 2100 (P-2100) and FERC Project No. 2426 (P-2426). P-2100 consists of dams associated with Oroville Field Division facilities that include Oroville Dam, Thermalito Diversion Dam, Feather River Fish Barrier Dam, Thermalito Forebay Dam, and Thermalito Afterbay Dam. P-2426 dams are associated with Pyramid, Quail, Cedar Springs, and Devil Canyon Powerplant Second Afterbay facilities in Southern Field Division. Every 5 years, a FERC Part 12D safety inspection is also conducted. In 2018, the Part 12D inspections for P-2100 dams were conducted. The Part 12D review of the P-2100 dams also satisfied the directors safety review. The Part 12D inspections for P-2426 dams are scheduled for 2019.

As a supplement to the FERC Part 12D safety inspection, FERC's Dam Safety Performance Monitoring Program requires that a potential failure mode analysis be performed for

Table 10-1 State Water Project Dam Inspections in 2018

| Field Division | Facility | Type of Inspection | | | | | | | |
|--------------------|---|--|----------------------------|--------------------------------------|---|---|--------------------------------|----------|---------------|
| | | Operations & Maintenance Dam Safety Branch | Division of Safety of Dams | Federal Energy Regulatory Commission | Bureau of Reclamation Annual Inspection | Bureau of Reclamation 8-Year Comprehensive Review | Director's Safety Review Board | Part 12D | 5-Year Review |
| Oroville | | | | | | | | | |
| | Antelope Dam | X | X | - | - | - | - | - | - |
| | Frenchman Dam | X | X | - | - | - | - | - | - |
| | Grizzly Valley Dam | X | X | - | - | - | - | - | - |
| | Oroville Dam | X | X | X | - | - | X | X | |
| | Bidwell Canyon Saddle Dam | X | X | X | - | - | X | X | |
| | Parish Camp Saddle Dam | X | X | X | - | - | X | X | |
| | Thermalito Diversion Dam | X | X | X | - | - | X | X | |
| | Thermalito Forebay Dam | X | X | X | - | - | X | X | |
| | Thermalito Afterbay Dam | X | X | X | - | - | X | X | |
| | Feather River Fish Barrier Dam | X | X | X | - | - | X | X | |
| Delta | | | | | | | | | |
| | Bethany Dams | X | X | - | - | - | X | - | |
| | Clifton Court Forebay Dam | X | X | - | - | - | X | - | |
| | Del Valle Dam | X | X | - | - | - | X | - | |
| | Dyer Reservoir | X | X | - | - | - | X | - | |
| | Patterson Dam | X | X | - | - | - | X | - | |
| San Luis | | | | | | | | | |
| | Little Panoche Detention Dam | X | - | - | X | - | - | - | |
| | Los Banos Detention Dam | X | - | - | X | - | - | - | |
| | O'Neill Dam | X | - | - | X | - | - | - | |
| | Sisk Dam | X | - | - | X | - | - | - | |
| Southern | | | | | | | | | |
| <i>West Branch</i> | | | | | | | | | |
| | Castaic Dam | X | X | - | - | - | - | - | |
| | Pyramid Dam | X | X | X | - | - | - | - | |
| | Quail Canal and Dam | X | X | X | - | - | - | - | |
| <i>East Branch</i> | | | | | | | | | |
| | Cedar Springs Dam | X | X | X | - | - | - | - | |
| | Devil Canyon Powerplant Second Afterbay Dam | X | X | X | - | - | - | - | |
| | Perris Dam | X | X | - | - | - | - | - | |
| | Crafton Hills Dam | X | - | - | - | - | - | - | |
| | Crafton Hills Reservoir Enlargement Dam | X | - | - | - | - | - | - | |

"X" indicates dam inspection was conducted at SWP facility.

"—" indicates dam inspection was not conducted at SWP facility.

FERC-licensed dams. The potential failure mode analysis involves document review and site visits to develop a comprehensive list of potential failure modes at each dam. From the FERC review process, two documents are generated: the *FERC Part 12D Safety Inspection Report* and the *Potential Failure Mode Analysis Report*. FERC-licensed facilities are also inspected annually by DSS and FERC's Dam Safety Engineer.

Supporting Technical Information Document

The *Supporting Technical Information Document* is a separate report that summarizes SWP project elements and details that do not change significantly over time. In the event of an emergency, the document serves as a summary and general overview for DWR, FERC, and consultants. The document is updated as required but is not generated as part of any of the dam safety inspections.

Condition Assessment Program Inspections

Condition Assessment Program inspections are scheduled biennially, every five years, or every 10 years. Future inspections intend to identify trends in maintenance and aging of the SWP.

In 2018, Condition Assessment Program inspections were performed on 7 different reaches of the SWP along more than 141 miles of canals. To aid in maintenance efforts, check structures, control buildings, compound grounds, roads, culverts, drain inlets, overchutes, turn-ins, turnouts, and utility crossings along the canal were inspected and rated.

Spillway Inspection Program

A series of new investigations and assessments throughout SWP facilities was initiated following the failure of the Oroville Dam service spillway in 2017.

These investigations were implemented throughout 2018.

A detailed spillway and condition inspection program was implemented in 2018 to determine the condition of SWP spillways and outlet structures throughout the SWP. The work was divided into two phases:

- Phase 1, Inspection and Evaluation included nondestructive evaluation techniques, ground penetration radar, and underwater remotely operated vehicles.
- Phase 2, Repairs and Analysis used the information and recommendations obtained from Phase 1, and repairs, recommended improvements, or further studies were implemented based on results of these inspections throughout 2018.

Oroville Dam Safety Comprehensive Needs Assessment

In 2017, DWR initiated the Oroville Dam Safety Comprehensive Needs Assessment project to identify measures to bolster the safety and reliability of Oroville Dam and the appurtenant structures. Significant progress was made in 2018, including the establishment of an independent review board for technical input and ad hoc group for stakeholder input and communication. A list of prioritized dam safety and operational reliability needs and potential measures to address those needs will be produced by the project. DWR will then evaluate the measures to reduce risk and enhance the reliability of the facilities.

Oroville Facilities Level 2 Risk Analysis

Following the 2017 Oroville Dam spillways incident, federal legislation was passed that directed FERC to have DWR identify and retain independent consultants to prepare a Level 2 risk analysis consistent with FERC's risk-informed decision making guidelines. In 2018, DWR retained the independent

consultants and submitted their plan to FERC.

Arroyo Pasajero Program

The Arroyo Pasajero watershed and its tributaries drain approximately 530 square miles of the Diablo Range of the coastal mountains west of the California Aqueduct in Fresno County. Its downstream juncture with the San Luis Canal segment of the California Aqueduct, between Highway 198 and Avenal Cutoff Road, poses a particularly difficult operational and maintenance problem for the SWP. Reclamation designed and constructed the San Luis Canal segment of the California Aqueduct, while DWR operates and maintains it, with all costs shared 45 percent and 55 percent, respectively.

During periods of heavy rainfall, high flows in the Arroyo Pasajero watershed and its tributaries transport heavy sediment loads eroded from throughout the watershed. Over a vast amount of time, sediment transported by arroyo floods formed a 450 square-mile alluvial fan extending from its apex at the eastern margin of Pleasant Valley (Anticline Ridge) to the San Joaquin Valley trough. The California Aqueduct traverses the arroyo's alluvial fan and forms a barrier to arroyo flood flows. Flood control facilities, designed to accommodate Arroyo Pasajero floodwater, include drain inlets to release floodwater into the California Aqueduct, an evacuation culvert to release floodwater east of the California Aqueduct, and the West Side Detention Basin, which was designed to store floodwater runoff and sediment west of the California Aqueduct. The volume of runoff and sediment transported by the Arroyo Pasajero is roughly 400 percent greater than was originally estimated during the design of the detention basin in the mid-1960s.

Since the floods of 1969, when nearly all of the detention basin's planned 50-year sediment storage capacity was filled by

deposition, DWR and Reclamation have worked to mitigate the effects of heavy flooding and the diminished storage capacity of the detention basin. In 1980, asbestos discovered in The Metropolitan Water District of Southern California's water supply was traced to runoff from the Arroyo Pasajero and other Diablo Range streams. This discovery, in conjunction with the high cost of removing sediment from the California Aqueduct, led DWR to adjust operating procedures to minimize runoff entering the California Aqueduct.

Construction to restore the storage capacity of the West Side Detention Basin started in August 2004, and many of the designed improvements were completed by the summer of 2005. These improvements restored the storage capacity to the detention basin and added control over releases of floodwater into the California Aqueduct and onto private farmland. The intended 50-year level of protection was achieved by raising levees, adding a control structure equipped with an inflatable rubber dam, installing flood gates, and acquiring flood easements. As of 2018, the basin's flood control features continued to function as expected.

In 2009, DWR signed the certificate of acceptance for the deeds for easements and lands acquired via litigation. The deeds were recorded, and the process to transfer the rights to Reclamation, as required by the joint-use agreement, was initiated. Work to address the transfer documents continued in 2018.

Related Activities

Environmental Protection Agency Review of Atlas Mine Area Operable Unit

The West Side Detention Basin is an area of interest in the U.S. Environmental Protection Agency's (EPA) *Superfund Record of Decision: Atlas Asbestos Mine, CA*, issued by the EPA in 1991. Five-year reviews of the Atlas Mine Area Operable Unit, part

of the Atlas Asbestos Mine Site in Fresno County, began in 2001 and have continued every five years since. In fall 2010, as a part of the upcoming 2011 review cycle, DWR toured the basin with representatives from the EPA and inspected all of the basin flood control features as well as soil berms, gates, locks, and signs used to deter soil disturbing activities. The EPA released its five-year review report in August 2011. The report contained various recommendations for DWR to take into consideration while operating the basin. As of 2018, DWR continued its standard operating procedures within the basin to comply with the EPA's Comprehensive Environmental Response Compensation and Liability Act (Superfund law).

California Department of Transportation Lassen Avenue Bridge Project

In September 2011, the California Department of Transportation informed DWR that funding existed through final design of the proposed bridge project at Lassen Avenue (State Route 269) over Arroyo Pasajero. DWR provided comments on the project study report in October 2011. The comments focused on flood control and ongoing operations and maintenance needs related to properly maintaining the channel. In late November 2018, the California Department of Transportation approved a construction contract, and preliminary construction activities began by the end of 2018.

Cantua Creek Stream Group

Planning for a restoration project similar to the West Side Detention Basin restoration project began in 2006 for the Cantua Creek Stream Group detention basins. The project's goal is to improve aqueduct flood protection and water quality between Mileposts 128.48 and 141.57.

A feasibility-level study for the Cantua Creek Stream Group Improvements Project,

completed in April 2011, identified actions such as raising embankments, making modifications to structures, and acquiring flood easements to provide a 50-year level of protection for the California Aqueduct. Improving water quality in the aqueduct was a significant goal of the study, since currently, several of the existing drain inlets are not gated, and sediment-laden floodwater flows directly into the aqueduct with little detention and decanting. Increasing flood storage and detention of this floodwater prior to releasing it into the California Aqueduct would provide a significant benefit to water quality in the aqueduct.

In 2017, construction continued between February and May, and the project was closed out in July. As of 2018, the basin's flood control features continued to function as expected.

Repairs, Modifications, and Inspections by Field Division

DWR continually monitors all SWP facilities and performs repairs, modifications, and inspections as necessary to ensure safe, reliable water delivery. The following sections describe significant and noteworthy repairs, modifications, and inspections conducted in 2018 by Oroville, Delta, San Luis, San Joaquin, and Southern field divisions.

Oroville Field Division

Detailed spillway and stream release inspection and condition assessment reports were issued for Antelope, Frenchman, and Grizzly Valley dam spillways in 2018. At the request of DSOD following the Oroville Dam spillways incident, the spillways and stream releases were inspected and non-destructive evaluation testing was conducted.

Potential failure mode analysis workshops for Feather River Fish Barrier, Thermalito Forebay, Thermalito Afterbay, and

Thermalito Diversion dams were conducted in October 2018. Every five years, FERC's Part 12D Independent Board of Consultants inspects and assesses the facility's performance and safety and provides recommendations to help maintain operation and safety of these structures.

Two load balances were tested, and two rope inspections were performed at the Thermalito Forebay Dam bypass radial gate.

A remotely operated vehicle inspection and bathymetric survey were performed for the upstream face of the Thermalito Afterbay Dam.

The drains beneath the flood control outlet at the Oroville Dam Spillway were partially inspected.

Non-destructive examination (ultrasonic and dispersive wave testing) of Oroville and Pyramid radial gate anchor rods was conducted. In addition, a pulse-echo test was also performed.

A partial remotely operated vehicle inspection of the toe drains at Oroville Dam began in 2018.

Progress on the Oroville Dam Safety Comprehensive Needs Assessment project continued during 2018. This project consists of a comprehensive review of the Oroville Dam complex.

Faulting and seismicity reports for Oroville, Thermalito Diversion, Thermalito Forebay, Thermalito Afterbay, Parish Camp Saddle, Bidwell Canyon Saddle, and Feather River Fish Barrier dams were updated. These updates incorporated site-specific shear wave velocity data where available and considered the findings of other more recent faulting studies.

Structural and stability analyses for Oroville Dam's flood control outlet monoliths 21–24

and 27–31 were completed in 2018. The stability of monoliths 12–24 and 27–31 were all found to be in conformance with Chapter 3, Gravity Dams, of the FERC Engineering Guidelines.

The Oroville Spillway Recovery Project achieved its goal of substantially completing the reconstruction of the service spillway and making improvements to the emergency spillway by November 1, 2018. In its 22nd report (December 2018), the Spillway Recovery Board affirmed that the reconstructed Oroville Dam spillways were completed in accordance with the design documents and that the restored condition of the flood control outlet chute and emergency spillway is a significant improvement over the original design.

New stop logs and storage racks were constructed for the Thermalito Afterbay Dam River Outlet under Specification No. 17-22 in preparation for a radial gate refurbishment project. The new stop logs were tested to confirm their functionality. The storage rack was constructed on the embankment beside the river outlet structure.

On November 28, 2018, DWR conducted the Oroville Dam Emergency Action Plan Annual Seminar. The goals of the seminar were to ensure that emergency response agencies review the Oroville Dam Emergency Action Plan purpose and process, review emergency roles and responsibilities, understand changes in inundation maps, and establish and strengthen cooperative relationships.

New inundation maps for all extremely high hazard dams and their appurtenances at Oroville Field Division (Oroville, Thermalito Diversion, Thermalito Forebay, and Thermalito Afterbay dams) were submitted for approval.

The Independent Review Board for the Oroville Dam Safety Comprehensive Needs Assessment project issued three reports

in 2018 that included recommendations for DWR's consideration.

Delta Field Division

Delta Field Division performed a planned dewatering of Dyer Reservoir to remove silt. The dewatering revealed damage to the reservoir's liner, which was repaired. The repairs were completed in May 2018 and the reservoir was refilled to normal operating levels.

A brief drawdown of Clifton Court Forebay was coordinated to allow for urgent repairs to the dam's soil cement-liner.

In 2018, the DSRB issued its report for Bethany, Clifton Court Forebay, Del Valle, Dyer, and Patterson dams.

Phase 1 maintenance of Del Valle dam's flood control outlet stilling basin was completed in November 2018. To facilitate this maintenance, DWR requested and received a temporary planned minor deviation from the existing water control plan for Del Valle Dam to allow for completion of the repairs and curing of concrete.

Radial gate refurbishment at Clifton Court Forebay Dam's intake structure continued, with two radial gates remaining for refurbishment. One of the five Clifton Court Forebay radial gates failed in 2013, prompting emergency repairs and the refurbishing of the remaining radial gates. The project is currently in the closeout documentation phase and is expected to be completed in 2020.

In October 2018, 17.7 miles of the North Bay Aqueduct were inspected and nine miles of the South Bay Aqueduct were inspected for leaks using a special device. This device is a free-swimming tool used while a pipe is still full of water to detect leaks within the pipeline by using acoustic sounds. The device is tracked externally as it travels the

length of the pipeline collecting data, after which the device is extracted for the data to be analyzed.

On April 25, 2018, 19.7 miles of the South Bay Aqueduct were inspected using a free-swimming leak detection device.

Maintenance repairs of the canal liner and embankments were conducted and completed in 2018 under Specification 15-07. The repair methods included panel replacement, above and below water grout, concrete cloth, and fabric forms.

San Luis Field Division

In the San Luis Field Division, 126 miles of the California Aqueduct were inspected, spanning six repayment reaches (2B, 3, 4, 5, 6, and 7) and 13 aqueduct pools (9 through 21).

In 2018, the biannual Condition Assessment Program inspection of the canal and appurtenant facilities for pools 9 through 21 were completed. This inspection includes the concrete liner, check structures, buildings, culverts, drain inlets, gauging systems, overchutes and utility crossings, turnouts, and siphons.

Inspections were also limited by what was visible at the current operating water levels. Potential defects below the water surface and underground utility lines were not inspected.

In April 2018, the feasibility-level design for the corrective action study at Sisk Dam was completed and final design started. In 2005, Reclamation had issued a recommendation that called for a corrective action study to evaluate liquefaction and seismic stability for Sisk Dam. The corrective action study was initiated in 2006 and by December 2018, all tasks associated with the study had been completed. In 2018, Reclamation issued a new recommendation: to perform

a final design of the preferred alternative identified in the corrective action study to reduce seismic risks at Sisk Dam, prepare specifications, complete explorations to verify the scope of modification necessary, and prepare a modification report.

In August 2018, a Central Valley Project and SWP water users briefing was held to provide an overview of the Sisk Dam modification project

San Joaquin Field Division

In the San Joaquin Field Division, 15 miles of the Coastal Branch of the California Aqueduct were inspected, spanning one repayment reach and six pools.

A visual inspection was completed of steel pipeline between Polonio Pass Pumping Plant and Central Coast Water Authority Tank 1 on November 7, 2018.

Southern Field Division

In March 2018, refilling of Lake Perris began from the restricted water surface elevation of 1,565.5 feet. Lake Perris water surface elevation had been restricted due to concerns of liquefiable soils under the left reach foundation of the dam. The seismic remediation of the dam was completed in April 2018 under Perris Dam Seismic Remediation Project (Specification No. 14-03). DSOD recertified and approved Perris Dam reservoir refilling to a water surface elevation of 1,590.5 feet. The work included improving the foundation soils with cement deep soil mixing, constructing a stability berm on the downstream side of the dam, and including drainage features. The project was completed pending closeout documents (Final Construction Report, As-Built Drawings, Final Geology Report, and Cost Affidavit).

Perris Dam's right reach seepage collection system, which includes the toe drain, relief line, and line 1, were cleared of sediment

and debris and were inspected by a remotely operated vehicle to assess the condition of the system.

In November 2018, four new monitoring wells were installed at Perris Dam as part of the Perris Dam Right Reach Monitoring Wells Project. The work included installation of real-time vibrating wire piezometers and converting one existing observation well to a real-time vibrating wire piezometer. The purpose of the project was to better understand the moist areas identified at the right reach toe of the dam. The project is scheduled for completion in April 2020.

In April 2018, an emergency action plan tabletop exercise and security plan tabletop exercise were conducted. In July 2018, Southern Field Division conducted a functional exercise for Cedar Springs Dam. The purpose of the functional exercise was to test and validate the Cedar Springs Dam emergency action plan and engage emergency management agencies, law enforcement, and first responders with DWR personnel during the rehearsal and execution of the emergency action plan.

On December 5, 2018, Southern Field Division's dam emergency action plan tabletop exercise and security plan tabletop exercise were conducted for Pyramid Dam and Peace Valley Intake Embankment Dam (also known as Quail Dam). Throughout the exercise series, discussions and actions of responsible staff (i.e., DWR personnel, emergency management agencies, law enforcement and first responders) were observed in an effort to identify potential gaps and areas where clarification to instructions were needed within the emergency action and security plans in order to improve the effectiveness of a DWR emergency response. The findings of these observations were recorded and analyzed in a series of after-action review documents that included assessments of the ability to meet exercise objectives,

identification of strengths in the execution and areas for improvement, the ability to meet core capability performance, and recommendations for inclusion in the *Exercise Series Improvement Plan*. This improvement plan, developed specifically for the DWR, will be used by the agency to take the corrective actions and maintain readiness.

The P-2426 hard structures seismic evaluation of the Cedar Springs, Devil Canyon Powerplant Second Afterbay, Pyramid, Quail Lake, and Peace Valley Intake Embankment outlet works structures and valve and surge chamber was performed to assess the current condition of the structures. This screening-level seismic evaluation began in 2018 and will be completed by 2020. Pending the results, the next steps will be to further develop advance analysis and to recommend retrofit, and/or replacement.

Other Inspections

Bridges and Overchutes

In addition to the conveyance facilities, nine bridges in the Oroville Field Division, 28 bridges in the Delta Field Division, and 58 bridges and 12 overchutes in San Luis Field Division were inspected as part of a regularly scheduled maintenance program.

Roads

The 2016 Pavement Management System results were used to prioritize road maintenance and repairs based on the condition of 959 miles of paved and unpaved roads.

Outages for Maintenance and Repair of Facilities

Table 10-2 presents information, arranged chronologically, about significant scheduled and unscheduled outages at SWP pumping

and power plants in 2018. The table includes information about incidents resulting in outages of 14 days or more.

Table 10-2 Outages for Maintenance and Repair of Facilities in 2018, by Month

1 of 6

| Month | Facility | Unit | Outage Description |
|--------------|------------------------------------|-------------|---|
| January | South Bay Pumping Plant | 7 | January 1 to August 7 for excessive vibration plus motor and pump removal (continued from March 4, 2014) |
| | Barker Slough Pumping Plant | 7 | January 1 to October 26 for excessive vibration, motor removal, and load test (continued from July 30, 2014) |
| | Buena Vista Pumping Plant | 5 | January 1 to February 27 for discharge valve refurbishment (continued from July 17, 2017) |
| | Giannelli Pumping-Generating Plant | 7 | January 1 to December 18 for unit generator rewind and discharge valve refurbishment (continued from July 28, 2017) |
| | Teerink Pumping Plant | 3 | January 1 to June 29 for discharge valve refurbishment (continued from October 2, 2017) |
| | Dos Amigos Pumping Plant | 4 | January 1 to January 12 for remote terminal unit replacement, exciter preventative maintenance, and clean oil pans (continued from November 27, 2017) |
| | Badger Hill Pumping Plant | 5 | January 1 to March 9 for discharge line #2 recoating (continued from November 27, 2017) |
| | Badger Hill Pumping Plant | 6 | January 1 to March 9 for discharge line #2 recoating (continued from November 27, 2017) |
| | Warne Powerplant | 2 | January 1 to March 8 for unit and KY2 relay replacement and trip testing (continued from December 4, 2017) |
| | Barker Slough Pumping Plant | 2 | January 1 to January 2 for Condition Assessment Program inspection (continued from December 17, 2017) |
| | Mojave Siphon Powerplant | 3 | January 2 to February 15 for annual Condition Assessment Program inspection |
| | Pearblossom Pumping Plant | 5 | January 8 to January 25 for annual Condition Assessment Program inspection and relay and trip test |
| | Bluestone Pumping Plant | 5 | January 9 to June 7 for pump replacement |
| | Banks Pumping Plant | 11 | January 10 to January 26 for Condition Assessment Program inspection and discharge valve upstream seat repair |
| February | South Bay Pumping Plant | 9 | January 15 to February 9 to Inspect suction well |
| | Oso Pumping Plant | 5 | January 22 to February 8 for Condition Assessment Program inspection |
| | Las Perillas Pumping Plant | 1 | January 24 to June 27 for Pump Replacement and install SEL710 relay |
| | Pearblossom Pumping Plant | 6 | January 29 to February 15 for Condition Assessment Program inspection and relay testing |
| | Chrisman Pumping Plant | 6 | February 5 to March 1 for discharge line #3, unit Condition Assessment Program inspection, brush preventative maintenance, and KYC relay calibration |

Table 10-2 Outages for Maintenance and Repair of Facilities in 2018, by Month

| Month | Facility | Unit | Outage Description |
|--------------|------------------------------------|-------------|--|
| March | Chrisman Pumping Plant | 7 | February 5 to March 1 for discharge line #3, unit Condition Assessment Program inspection, brush preventative maintenance, and KYC relay calibration |
| | Banks Pumping Plant | 7 | February 5 to March 7 for Condition Assessment Program inspection and speed switch upgrade |
| | Giannelli Pumping-Generating Plant | 5 | February 20 to March 17 for Penstock #3 and butterfly valve inspection |
| | Giannelli Pumping-Generating Plant | 6 | February 20 to March 17 for Penstock #3 and butterfly valve inspection |
| | Teerink Pumping Plant | 1 | February 28 to June 28 for discharge line #1 and install unit 3 discharge valve |
| | Teerink Pumping Plant | 2 | February 28 to June 28 for discharge line #1 and install unit 3 discharge valve |
| | Teerink Pumping Plant | 3 | February 28 to June 28 for discharge line #1 and install unit 3 discharge valve |
| | Chrisman Pumping Plant | 6 | March 1 to March 28 for rotor inspection and re-wedge |
| | Crafton Hills Pumping Plant | 1 | March 7 to April 2 for multi-function relay replacement |
| | Crafton Hills Pumping Plant | 2 | March 7 to April 2 for multi-function relay replacement |
| | Crafton Hills Pumping Plant | 3 | March 7 to April 2 for multi-function relay replacement |
| | Crafton Hills Pumping Plant | 4 | March 7 to April 2 for multi-function relay replacement |
| | Badger Hill Pumping Plant | 1 | March 10 to March 31 for recoating discharge Line #1 |
| | Badger Hill Pumping Plant | 2 | March 10 to March 31 for recoating discharge Line #1 |
| | Badger Hill Pumping Plant | 3 | March 10 to March 31 for recoating discharge Line #1 |
| | Badger Hill Pumping Plant | 4 | March 10 to March 31 for recoating discharge Line #1 |
| | Buena Vista Pumping Plant | 1 | March 12 to March 31 for transformer KYA Maintenance, and units 1-3 Condition Assessment Program inspection and discharge line |
| | Buena Vista Pumping Plant | 2 | March 12 to March 31 for transformer KYA Maintenance, and units 1-3 Condition Assessment Program inspection and discharge line |
| | Buena Vista Pumping Plant | 3 | March 12 to March 31 for transformer KYA Maintenance, and units 1-3 Condition Assessment Program inspection and discharge line |
| | Buena Vista Pumping Plant | 4 | March 12 to March 31 for transformer KYA Maintenance, and units 1-3 Condition Assessment Program inspection and discharge line |
| | Buena Vista Pumping Plant | 5 | March 12 to March 31 for transformer KYA Maintenance, and units 1-3 Condition Assessment Program inspection and discharge line |
| | Buena Vista Pumping Plant | 6 | March 12 to March 31 for transformer KYA Maintenance, and units 1-3 Condition Assessment Program inspection and discharge line |

Table 10-2 Outages for Maintenance and Repair of Facilities in 2018, by Month

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| Month | Facility | Unit | Outage Description |
|--------------|------------------------------------|-------------|---|
| | Oso Pumping Plant | 3 | March 19 to April 6 for Condition Assessment Program inspection, discharge valve work, and Doble and relay testing |
| | Giannelli Pumping-Generating Plant | 1 | March 19 to April 19 for Line #1 relay upgrade-switchyard relay and carrier equipment upgrade |
| | Giannelli Pumping-Generating Plant | 2 | March 19 to April 19 for Line #1 relay upgrade-switchyard relay and carrier equipment upgrade |
| | Giannelli Pumping-Generating Plant | 3 | March 19 to April 19 for Line #1 relay upgrade-switchyard relay and carrier equipment upgrade |
| | Giannelli Pumping-Generating Plant | 4 | March 19 to April 19 for Line #1 relay upgrade-switchyard relay and carrier equipment upgrade |
| | Buena Vista Pumping Plant | 1 | March 26 to September 24 for discharge valve refurbishment |
| | Badger Hill Pumping Plant | 1 | March 10 to December 17 for pump replacement |
| | Barker Slough Pumping Plant | 8 | March 30 to May 13 due to motor inoperable after megger test investigation |
| April | South Bay Pumping Plant | 10 | April 2 to May 4 for Dyer Reservoir sediment removal |
| | South Bay Pumping Plant | 11 | April 2 to May 4 for Dyer Reservoir sediment removal |
| | South Bay Pumping Plant | 12 | April 2 to May 4 for Dyer Reservoir sediment removal |
| | South Bay Pumping Plant | 13 | April 2 to May 4 for Dyer Reservoir sediment removal |
| | Devil Canyon Powerplant | 4 | April 2 to July 30 for Condition Assessment Program inspection, needle repairs, Doble testing, and rotor pole |
| | Pearblossom Pumping Plant | 9 | April 9 to April 30 for Condition Assessment Program inspection |
| | Banks Pumping Plant | 4 | April 16 to May 3 for motor control cabinet P2A breaker replacement |
| | Banks Pumping Plant | 5 | April 16 to May 3 for Condition Assessment Program inspection, critical preventative maintenance, trip test, Doble test, and speed switch replacement |
| | Oso Pumping Plant | 6 | April 16 to May 4 for Condition Assessment Program inspection, relay and trip testing, hydraulic power unit preventive maintenance |
| | Hyatt Pumping-Generating Plant | 4 | April 16 to May 5 for penstock #2 runner and top plate inspection |
| | Hyatt Pumping-Generating Plant | 5 | April 16 to May 5 for penstock #2 runner and top plate inspection |
| | Hyatt Pumping-Generating Plant | 6 | April 16 to May 5 for penstock #2 runner and top plate inspection |
| | Citrus Pumping Plant | 3 | April 17 to April 30 for high pressure oil system leak repair |
| | Citrus Pumping Plant | 6 | April 17 to April 30 for high pressure oil system leak repair |
| | Citrus Pumping Plant | 8 | April 17 to April 30 for high pressure oil system leak repair |

Table 10-2 Outages for Maintenance and Repair of Facilities in 2018, by Month

| Month | Facility | Unit | Outage Description |
|--------------|--------------------------------|-------------|--|
| May | Citrus Pumping Plant | 8 | April 17 to May 7 for warranty repair |
| | Chrisman Pumping Plant | 4 | April 18 to May 17 for installing butterfly valve and air release valve piping |
| | Dos Amigos Pumping Plant | 3 | April 23 to August 13 for discharge line, air housing, rotor, Condition Assessment Program inspection, and siphon valve spools |
| | Citrus Pumping Plant | 7 | May 4 to July 31 for forced outage |
| | Warne Powerplant | 1 | May 7 to May 30 for unit Condition Assessment Program inspection, transformer Condition Assessment Program inspection, needle hydraulics, sump annual, install programmable logic controller, and annunciator work |
| | Pearblossom Pumping Plant | 2 | May 14 to June 8 for Condition Assessment Program inspection, relay and trip testing |
| | Banks Pumping Plant | 1 | May 20 to June 8 for Condition Assessment Program inspection, Doble test, trip test, and speed switch replacement |
| | Polonio Pass Pumping Plant | 2 | May 23 to October 19 to install repaired discharge valve |
| | Oso Pumping Plant | 8 | June 4 to June 22 for Condition Assessment Program inspection, relay and trip testing |
| | Banks Pumping Plant | 9 | June 4 to July 6 for Condition Assessment Program inspection and speed switch upgrade |
| June | South Bay Pumping Plant | 6 | June 4 to August 27 for motor removal and replacement |
| | Chrisman Pumping Plant | 3 | June 4 to July 10 for daily MM-29 relay testing |
| | Pearblossom Pumping Plant | 7 | June 11 to June 26 for Condition Assessment Program inspection, relay and trip testing |
| | Buena Vista Pumping Plant | 8 | June 25 to October 11 for daily MM-29 relay and trip testing |
| | South Bay Pumping Plant | 8 | June 21 to December 27 for motor removal and replacement |
| | Oso Pumping Plant | 1 | July 2 to July 20 for Condition Assessment Program inspection, reply and trip testing |
| | Hyatt Pumping-Generating Plant | 2 | July 6 to August 2 for fire systems CO ₂ installation and trip test |
| | Pearblossom Pumping Plant | 1 | July 9 to July 26 for Condition Assessment Program inspection, relay and trip testing |
| | Banks Pumping Plant | 10 | July 9 to August 9 for Condition Assessment Program inspection, Doble test, trip test, and speed switch replacement |
| | Teerink Pumping Plant | 8 | July 16 to November 9 for discharge valve removal and repair, unit Condition Assessment Program inspection, and MM-29 test |
| | | | |

Table 10-2 Outages for Maintenance and Repair of Facilities in 2018, by Month

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| Month | Facility | Unit | Outage Description |
|--------------|-----------------------------|-------------|---|
| August | Chrisman Pumping Plant | 2 | July 23 to August 10 for bypass line and motor oil tub leak repair |
| | Buena Vista Pumping Plant | 1 | July 26 to October 26 for unit 1 discharge valve reinstall |
| | Buena Vista Pumping Plant | 2 | July 26 to October 26 for unit 1 discharge valve reinstall |
| | Buena Vista Pumping Plant | 3 | July 26 to October 26 for unit 1 discharge valve reinstall |
| | Pearblossom Pumping Plant | 8 | August 8 to August 31 for Condition Assessment Program inspection, relay and trip testing |
| | Barker Slough Pumping Plant | 5 | August 17 to September 19 due to bad transducer |
| September | Devil Canyon Powerplant | 3 | August 20 to November 4 for Condition Assessment Program inspection, needle repair, and Governor rebuild |
| | Oso Pumping Plant | 6 | August 31 to November 30 for ground fault |
| | South Bay Pumping Plant | 1 | September 6 to September 24 due to slide gate hydraulic leak |
| | South Bay Pumping Plant | 2 | September 6 to September 24 due to slide gate hydraulic leak |
| | South Bay Pumping Plant | 3 | September 6 to September 24 due to slide gate hydraulic leak |
| October | Buena Vista Pumping Plant | 10 | September 10 to October 11 for MM-29 relay and trip testing |
| | Alamo Powerplant | 1 | September 10 to October 17 for Condition Assessment Program inspection and trip testing |
| | Banks Pumping Plant | 2 | September 24 to October 18 for Condition Assessment Program inspection |
| | Pearblossom Pumping Plant | 9 | August 25 to October 8 for discharge valve upstream seat repair |
| | Chrisman Pumping Plant | 8 | October 8 to November 1 for unit Condition Assessment Program inspection and discharge line #4 inspections |
| | Chrisman Pumping Plant | 9 | October 8 to November 1 for unit Condition Assessment Program inspection and discharge line #4 inspections |
| November | Pearblossom Pumping Plant | 4 | October 15 to November 12 for Condition Assessment Program inspection |
| | Banks Pumping Plant | 6 | October 22 to November 21 for Condition Assessment Program inspection, Doble test, trip test, and speed switch replacement |
| | Devil Canyon Powerplant | 1 | November 5 to December 6 for annual Condition Assessment Program inspection |
| | Chrisman Pumping Plant | 1 | October 8 to November 17 for discharge line #1 out of service for discharge line pipe repairs and Condition Assessment Program inspection |
| | Chrisman Pumping Plant | 2 | October 8 to November 17 for discharge line #1 out of service for discharge line pipe repairs and Condition Assessment Program inspection |

Table 10-2 Outages for Maintenance and Repair of Facilities in 2018, by Month

| Month | Facility | Unit | Outage Description |
|-------|------------------------|------|---|
| | Chrisman Pumping Plant | 3 | October 8 to November 17 for discharge line #1 out of service for discharge line pipe repairs and Condition Assessment Program inspection |



Chapter 11

Engineering, Construction, and Real Estate

A butterfly valve is on display during a celebration of the East Branch Extension project at Citrus Reservoir and Citrus Pump Station.

Significant Events in 2018

Engineering, construction, and real estate work continued to enhance, expand, repair, and protect the State Water Project (SWP) and other facilities within the State. Significant projects included the seismic remediation of Perris Dam; the East Branch Extension Phase II projects; emergency and recovery efforts of Oroville Dam service and emergency spillways; and habitat restoration projects.

Information for this chapter was provided by the Division of Engineering.

JInitial construction of the State Water Project (SWP) facilities began in 1957 with the relocation of the Western Pacific Railroad facilities and Highway 70 near the City of Oroville. Oroville Dam was constructed between 1961 and 1967. Construction of the South Bay Aqueduct (SBA) facilities started in 1960, and the first SWP water deliveries through the SBA began in 1962 to Alameda County.

In 1963, the Department of Water Resources (DWR) began work on the California Aqueduct, and by 1968, the SWP was delivering water to SWP water contractors in the San Joaquin Valley. By 1973, with the completion of the Edmonston Pumping Plant at the foot of the Tehachapi Mountains and other East Branch conveyance facilities, the SWP was delivering water to Lake Perris at the southernmost point in Riverside County.

Other water deliveries occurred as follows:

- 1968—The first SWP water was delivered through the first phase facilities of the North Bay Aqueduct and through the first phase facilities of the Coastal Branch.
- 1974—The first SWP water was delivered through the West Branch facilities to Los Angeles County.
- 1988—SWP water was delivered through the second phase facilities of the North Bay Aqueduct to Solano County.
- 1997—SWP water was delivered through the second phase facilities of the Coastal Branch Aqueduct to San Luis Obispo and Santa Barbara counties.

Prior to the completion of the initial facilities in 1973, work began on the Upper Feather River facilities to supply local water, recreation, and fish enhancement. Power plants, additional pumping units, and turbine-generators that had previously been deferred were built to ensure water quality and fish enhancement in the Sacramento-San Joaquin Delta (Delta).

From 1974 through 2018, design and construction activities included repairing

concrete lining failures or potential failures of the canal system and concrete pipeline sections; replacing equipment components of existing facilities; enlarging or extending aqueduct reaches; refurbishing pump-turbine units; and adding pumps and motors to existing facilities. Specific projects included constructing the Devil Canyon Powerplant Second Afterbay; constructing Phase II of the Coastal Branch; extending the SWP through the East Branch Extension to the San Gorgonio Pass service area in San Bernardino and Riverside counties with enlargements and expansions in later years; SBA enlargement; Perris Dam seismic remediation; and assessing potential habitat restoration and water conveyance options in the Delta.

Design Activities

In 2018, work to enhance, expand, repair, and protect the SWP water delivery system continued. Engineering activities supported more efficient water deliveries within the confines of legal and environmental constraints and power availability. Significant projects included the North Bay Aqueduct alternate intake study and Perris Dam emergency release facility design. Table 11-1 (at the end of the chapter) provides a list of completed and ongoing design work that was undertaken in 2018.

DWR's Division of Engineering (DOE) continued to design projects for development into the construction phase, including awarding construction contracts. DOE worked with many DWR divisions and offices, as well as local, State, and federal

agencies. DOE conducted special studies of dams, canal embankments, and other SWP facilities; prepared preliminary designs and estimates; developed and administered construction contract documents; and carried out construction projects.

The following list includes study and design activities continued from previous reporting periods or initiated in 2018:

- 2017 spillway inspections—study
- Upper Feather River dams faulting and seismicity updated reports—study
- Upper Feather River Light Detection and Ranging (LiDAR) and orthomosaic from photogrammetry, Phase II—study
- Oroville, Thermalito Afterbay, and Thermalito Forebay dams radial gate programmatic refurbishment—design
- Oroville Dam emergency spillway stability analyses—study
- 2014 Part 12, Subpart D, Thermalito Diversion Dam stability analyses—study
- Bidwell Canyon boat ramp parking expansion (Site 3)—design
- Bidwell Canyon boat ramp lane additions, Stage 1 (Site 5)—design
- Bidwell Canyon Marina parking lot expansion (Site 4)—design
- Bidwell Canyon parking lot expansion and boat ramp lane addition, Stage 2 (Site 8)—design
- Bidwell Saddle Dam Trailhead access improvements (Site 7)—design
- Enterprise boat ramp extension and expansion (Site 6)—design
- Oroville Field Division Federal Energy Regulatory Commission License Coordination Branch modular office building project—design
- Hyatt Powerplant emergency recovery 230 kilovolt power lines project—design
- Oroville, Thermalito Afterbay, Thermalito Diversion, Thermalito Forebay, Bidwell Canyon Saddle, Parish Camp Saddle, and Feather River Fish Barrier dams
- Part 12 updated faulting and seismicity reports—study
- Roaring River Distribution System west drain structure improvement project—design
- Prospect Island tidal habitat restoration—design
- Winter Island tidal habitat restoration—design
- Decker Island habitat restoration—design
- Sacramento maintenance yard rehabilitation project—design
- North Bay Aqueduct alternate intake—study
- South Bay Aqueduct Milepost 35 out of round repair—design
- South Bay Aqueduct compression vault project—design
- Del Valle Dam conservation outlet works intake structure stability investigation, Phase II—study
- Del Valle Pipeline Sycamore Park slide gate—hydraulic study
- Dyer Reservoir emergency repair to liner—design
- Clifton Court Forebay Dam dredging in depth—study
- Delta Field Division Lower Elkhorn Basin levee setback project—design
- Dos Amigos Pumping Plant geologic investigation, review, and planning workshop—study
- San Luis Field Division irrigation crossings inspection and repair—design
- San Luis Field Division Pools 20 and 21 embankment subsidence rehabilitation—study
- Buena Vista Pumping Plant water line replacement—design
- San Joaquin Field Division liner raise and instrumentation—design
- Edmonston Pumping Plant east and west elevators replacement—design
- Cottonwood Chute No. 2 generator—design

- Perris Dam emergency release facility—preliminary design and environmental documents
- Crafton Hills Reservoir seepage repair—study
- California WaterFix Bouldin Island access roads and site improvement—design
- California WaterFix right-of-way due diligence research—study
- SWP LiDAR and photogrammetry—study

In 2018, DOE completed the following studies and activities:

- Oroville Dam seepage and slope stability analysis—study
- Lime Saddle parking expansion (Site 2)—design
- Bidwell Canyon and Lime Saddle marinas low water access (Site 9)—design

Construction Activities

DWR divides the California Aqueduct into the following construction divisions: North San Joaquin, San Luis, South San Joaquin, Tehachapi, Mojave, and Santa Ana divisions of the so-called “main line,” and the West and Coastal branches.

DOE worked on 35 construction contracts in various SWP construction divisions in 2018. Contract projects included pipeline repair, control system upgrades, fire systems modernization, equipment refurbishments and upgrades, seismic upgrades of bridges, maintenance facility improvements at dam and reservoir sites, and the addition of new pumping units. Table 11-2 (at the end of the chapter) provides a list of completed, new, and ongoing construction contracts undertaken in 2018. Resolution of contract claims may extend the actual contract closeout beyond the completion or acceptance date.

SWP—General

Antelope Dam, Frenchman Dam, and Grizzly Valley Dam

Spillway repairs on the Antelope Dam, Frenchman Dam, and Grizzly Valley Dam (Specification No. 17-17) began in August 2017. Work was reported in Bulletin 132-18 as having been accepted in November 2017; however, work was accepted in June 2018.

Northern Yolo Bypass

Work to modify the Fremont Weir and build a new channel on the Northern Yolo Bypass for improved adult fish passage (Specification No. 17-18) began in September 2017. Work is expected to be accepted in August 2020.

Oroville Division

Bidwell Canyon Parking Lot Stage II, Improvements (Site 8)

Reconstructing and paving the existing gravel lot to provide additional paved vehicle and trailer parking spaces (Specification No. 18-05) began in October 2018. The expected acceptance date is pending.

Bidwell Canyon Boat Ramp Stage I, Lane Additions (Site 5)

The stage I boat ramp lane additions (Specification No. 17-25) began in December 2017. Work consisted of extending two boat ramp lanes down to the bottom of the existing stage 1 boat ramp. Work was accepted in April 2018.

Bidwell Canyon Marina Parking Lot Expansion (Site 4)

Construction of approximately 108 vehicle parking spaces in a compacted aggregate base lot, as well as construction of a foot path and access road (Specification No. 18-16), began in November 2018. The expansion is east of the Bidwell Campground Gold Flat Loop and below the high-water

elevation of Lake Oroville. Work also includes accessibility improvements in the existing tiered marina parking lot. Work is expected to be accepted in November 2019.

Bidwell Saddle Dam Trailhead Improvements (Site 7)

Recreation enhancements, including new picnic areas, horse hitching posts, and accessible parking (Specification No. 18-15), began in August 2018. The expected acceptance date is pending.

Lake Oroville Marina Low Water Access Trail (Site 9a)

Constructing a trail from the existing Lime Saddle boat ramp down to the mobile Lake Oroville Marina (Specification No. 18-17) began in October 2018. The trail will drop from the approximate elevation of 740 feet down to 657 feet. The expected acceptance date is July 2020.

Oroville Dam, Thermalito Diversion Dam, and Oroville Operations and Maintenance Center

Security improvements at DWR's Oroville Field Division water facilities located in Butte County (Specification No. 18-09) began in August 2018. The expected acceptance date is pending.

Hyatt Powerplant, Thermalito Diversion Dam Powerplant, and Oroville Operations and Maintenance Center Fire Systems Modernization Project

The goals of the fire systems modernization project are to increase safety and property protection while reducing business interruptions and environmental impacts. The project to furnish and install the new fire detection and evacuation system (Specification No. 15-06) began in October 2015. DWR assisted the contractor with the design work during the construction phase of the project. Work was originally scheduled to be completed in July 2017.

The current anticipated completion date is pending.

Work includes the following:

- upgrading transformer, generator, high voltage tunnel, and Area Control Center communication room fire suppression systems
- replacing Hyatt Powerplant's oil purification/storage room and high voltage cable oil room carbon dioxide suppression system with a high-pressure water mist system
- installing water sprinkler and clean agent suppression at specific locations within Hyatt Powerplant and the Area Control Center to meet probable maximum loss criteria
- providing modifications within the plant and the dam core block that allow a safe outlet for staff during an emergency event and providing additional communications systems throughout the plant
- networking all fire detection and suppression systems at all facilities to remote workstations capable of monitoring and controlling the new and existing systems

Robie Thermalito Pumping-Generating Plant

Life safety improvements (Specification No. 16-14) began in February 2017. Work includes replacements, upgrades, and modifications and installation of new fire suppression and detection systems. The expected acceptance date is pending.

Main control board system installation (Specification No. 16-11) began in December 2016. Work includes furnishing, programing, assembling, and delivering testing and training. The expected acceptance date is pending.

Oroville Emergency Response and Recovery

Construction support related to Oroville Dam service spillway (flood control outlet) and emergency spillway repairs (Specification No. 17-04) began in February 2017. Work includes providing labor, materials and equipment or services, construction equipment, and hauling of construction equipment. Work was reported in Bulletin 132-18 as having been accepted in April 2017; however, the expected acceptance date is pending.

Oroville Dam service spillway (flood control outlet) and emergency spillway restoration (Specification No. 17-09) began in April 2017. Work includes removing and replacing the upper and lower flood control outlet chute, restoring sections of the flood control outlet foundation, and strengthening the emergency spillway. The expected acceptance date is pending.

Thermalito Diversion Pool

A water-based operation (Specification No. 17-10) began in June 2017. Work included removal of accumulated sediment and debris. Work was completed in December 2017 and accepted in July 2018.

Thermalito Diversion Dam

Phase II of the radial gates maintenance repair project (Specification No. 18-07) began in June 2018. Work includes tension rod installation, concrete spall repairs, lower girder brace repairs, electrical work, miscellaneous weld and coating repairs, and clearing all clogged drains. Work is expected to be accepted in February 2019.

South Bay Aqueduct (SBA)

Santa Clara Pipeline

Mileposts 16.30, 28.90, 34.23, and 41.68.

This project (Specification No. 16-09) includes the following:

- modifying existing Pacific Gas & Electric Company Line 303 gas line at Milepost 16.30 (Station 859+58) on the SBA Alameda Canal to provide cathodic isolation of the gas line
- modifying existing Bayside Valve Vault at Milepost 28.90 to furnish and install lockout for existing 72-inch butterfly valve, two-inch diameter polyvinyl chloride (PVC) conduit with control cable, pull boxes, wirings, raceways, and appurtenances
- modifying the existing Santa Clara Pipeline at Milepost 34.23 blow-off discharge pipe to excavate, remove, and replace approximately 70 linear feet of existing six-inch diameter steel discharge pipe
- modifying existing Grossmont Valve Vault at Milepost 41.68 to furnish and install lockout for existing 54-inch butterfly valve

Work began in October 2016. Work was reported in Bulletin 132-18 as having been accepted in November 2017; however, the current anticipated acceptance date is August 2019.

North San Joaquin Division

Clifton Court Forebay Dam

The refurbishment of radial Gate Nos. 1, 2, 3, 4, and 5 on the Clifton Court Forebay Dam control structure (Specification No. 16-06) began in October 2016. This project involves the sequential removal, refurbishment to original design at shop, transport back to the site, and reinstallation of the radial gates. Work is scheduled to be completed in October 2019. Acceptance is expected in October 2020.

Erosion repairs at Stations 238+00, 252+00, and 254+00 (Specification No. 18-13) began in May 2018. Work includes repairing damage to an existing asphalt concrete roadway and eroded bank slopes. The expected acceptance date is pending.

Chrismen Pumping Plant

Apron repairs (Specification No. 18-20) began in December 2018. Work includes removing and replacing existing broken concrete panels, as well as placing reinforcing steel and backfilling. Work is expected to be accepted in September 2019.

Sherman Island

Construction of the Little Baja and the Manzo Ranch fish release sites, on the northwest side of Sherman Island, began in April 2016 (Specification No. 16-01). The project complies with the 2009 National Marine Fisheries Service's biological opinion mandate to reduce predation and improve survival rates of fish salvaged from the Skinner Fish Facility. The project is scheduled to be completed by June 2019.

West Weber North Storage Facility

Work required to provide a facility that will be used in DWR's flood-fighting and related emergency response functions (Specification No. 17-01) began in May 2017. Work includes modifications to an existing warehouse building, construction of a rock conveyor and barge docking area, and other various site improvements. Work is expected to be accepted in October 2019.

SWP Telecommunications Towers

Construction of telecommunications towers at three SWP facility locations (Specification No. 17-02) began in May 2017. Work was reported in Bulletin 132-18 as having been accepted in December 2017; however, it was accepted in April 2018.

Mojave Division

Cedar Springs Dam

Spillway repair work (Specification No. 17-20) began in September 2017. Work was reported in Bulletin 132-18 as having been accepted in November 2017; however, it was accepted in May 2018.

Santa Ana Division

East Branch Extension Phase II

Phase II of the East Branch Extension will complete the planned capacity increase for the East Branch Extension. Phase II will allow San Gorgonio Pass Water Agency to receive its maximum annual Table A water and allow the San Bernardino Valley Municipal Water District to increase its distribution system capacity to its Redlands and Yucaipa Valley service areas. Principal Phase II features include approximately six miles of new 72-inch and 66-inch diameter pipe, a new reservoir (Citrus Reservoir), a new 160 cubic feet per second pump station (Citrus Pump Station), expansion of the existing Crafton Hills Pump Station, and installation of an additional pump at Cherry Valley Pump Station.

Crafton Hills Pump Station, Cherry Valley Pump Station, and Mentone Pipeline.

Manufacturing, testing, and delivery of 12 AWWA (American Water Works Association) butterfly valve assemblies with actuators for Crafton Hills Pump Station, Cherry Valley Pump Station, and Mentone Pipeline (Specification No. 10-17) began in February 2011. Spare parts and special tools were included in the contract work. Work was completed in mid-2013. Work was reported in Bulletin 132-18 as having been accepted in July 2017; however, it was accepted in August 2018.

Crafton Hills and Citrus Pump Stations.

Work on the Crafton Hills and Citrus pump stations (Specification No. 13-12) included manufacturing, factory testing,

and commissioning equipment for a prefabricated control building and associated equipment, accessories, tools, special tools, and spare parts. Also included were 5 kilovolt (kV), 4,000 amperes (A) switchgear motor breaker cubicle assemblies; 5 kV, 4,000 A main and tie breaker switchgear cubicle assemblies; 5 kV, 4,000 A station service breaker switchgear cubicle assemblies; and 5 kV-class surge protection equipment in the main incoming bus compartments. Fabrication began in June 2014 and was completed in October 2016. Work was accepted in November 2018.

Crafton Hills, Citrus, and Cherry Valley Pump Stations. Manufacturing, testing, and delivering 12 ANSI (American National Standards Institute) ball valve assemblies with actuators and four actuators for Citrus Pump Station, Crafton Hills Pump Station, and Cherry Valley Pump Station (Specification No. 10-18) began in January 2011. The valves were delivered to the site in October 2012. Spare parts and special tools were included in the contract work. Work was reported in Bulletin 132-18 as having been accepted in July 2017; however, it was accepted in July 2018.

Work to provide pumps, motors, variable frequency drives, excitation system equipment, and associated hardware for the pump stations (Specification No. 13-01) began in June 2013. Units were delivered in December 2015. Work was reported in Bulletin 132-18 as having been accepted in July 2017; however, acceptance is expected in December 2019.

In March 2015, work began on a contract for the following completion work (Specification No. 14-21) at Citrus, Crafton Hills, and Cherry Valley pump stations:

- install DWR-furnished pumps, motors, valves, switchgear equipment and

materials, motor field supply equipment and materials

- replace existing station service transformer with new DWR-furnished station service transformer

Work was accepted in July 2018.

West Branch

Los Robles Road—Bridge

The seismic retrofit of the bridge at Los Robles Road (Specification No. 18-08) began in July 2018. Work includes protecting in place the California Aqueduct, existing utility lines, and other facilities during selective demolition and modification of the existing bridge; constructing shear keys at bridge abutments; constructing new extended footings at bridge piers; installing steel pier casings; and repairing cracks. Work is expected to be accepted in January 2020.

Perris Dam

The seismic remediation of Perris Dam (Specification No. 14-03) began in August 2014. The work involved construction of a new compacted berm; extension of the existing blanket drain; construction of a new drain line, a new toe drain, and a relief well system; cement deep soil mixing treatment of the alluvium beneath the footprint of the compacted berm; road work; and other related work. The rock material for the project was produced on-site using blasting methods and a rock processing plant. Work was accepted in June 2018.

Pyramid Dam

Repairs to the Pyramid Dam spillway (Specification No. 17-19) began in September 2017. Work was reported in Bulletin 132-18 as having been accepted in November 2017; however, it was accepted in May 2018.

Construction Activities in Multiple Divisions

Badger Hill Pipeline and Mojave Siphon

Work to remove and replace the existing lining in manifolds and pipeline, construct a flow metering vault, remove and replace a joint seal at Mojave Siphon Check 66, and remove and reinstall pipe spool pieces (Specification No. 13-14) began in the San Joaquin and Southern field divisions in November 2013. Because of emergency work in Specification No. 05-16, work under this contract (Specification No. 13-14) was suspended through November 2017. Work was completed in April 2018 and accepted in October 2018.

San Joaquin Field Division

Replacement of the existing standby engine generators with new liquefied petroleum gas and diesel standby engine generators (Specification No. 14-19) began at 21 check sites and eight pumping plant sites in the San Joaquin Field Division in May 2015. Work included installing new fuel tanks, transfer switches, and load banks to support operation of the new standby engine generators. The sites included all of the Coastal Branch pumping plants and check sites; all check sites from Check 22 to 39 on the California Aqueduct; and Teerink, Buena Vista, and Edmonston pumping plants. Work was accepted in June 2018.

Roaring River Distribution System

Drain structure replacement (Specification No. 17-11) began in June 2017. Work included replacing an existing 36-inch pipe with a 48-inch pipe adjacent to the DWR salinity gate structures within the Montezuma Slough. Work was originally accepted in July 2017. Approximately two weeks after initial project completion, DWR noted that the pipe crossing was beginning to erode and collapse. DWR ordered the contractor to mobilize equipment, materials, and manpower to construct a cofferdam

to assess damage and plan necessary repairs. Acceptance is now expected in February 2019.

Western drain installation (Specification No. 18-06) began in June 2018. Work includes installing a 48-inch pipe, canal gate, flap gate, timber bulkheads, walkways, and miscellaneous items. Work is expected to be accepted in February 2019.

Elk Slough, Cache Slough, Lindsey Slough, Steamboat Slough, and Shag Slough

Phase III of emergency levee repairs at nine sites (Specification No. 18-03) began in June 2018. Work includes landside slope repair; waterside slope repair; tree removal; clearing and grubbing; earthfill; and seeding and erosion control. Work is expected to be accepted in November 2019.

Suisun Marsh and Delta Legal Boundary

Levee and wetland maintenance (Specification No. 18-02) began in April 2018. Work consists of levee, road, and water control structure repairs; channel flow improvements, associated appurtenant structures, and other earthwork; and interior property maintenance, including selective trash and debris removal and disposal from both above and below the waterline. The expected acceptance date is pending.

Decker Island

Converting existing wetland into tidal habitat (Specification No. 18-04) began in July 2018. Work consists of constructing a staging area; degrading the northern area; breaching the southern area; constructing and reconfiguring berms; and constructing a turnaround pad. The expected acceptance date is pending.

Sacramento Maintenance Yard

Roofing replacement (Specification No. 18-10) began in May 2018. Work consists of removing and disposing of existing

built-up roofing; providing and installing styrene-butadiene-styrene modified bitumen roofing system, cover board, tapered and non-tapered rigid insulation, and reflective roof coating; sheet metal work; painting; sealants; gutters, downspouts, and roof accessories; and plywood. Work is expected to be accepted in June 2019.

Phase I of the site rehabilitation project, pavement, and utilities (Specification No. 18-12), began in July 2018. Work consists of demolishing and excavating various areas; installing a new drainage system; installing conduits and pull boxes for future electrical and communication work; repaving site with additional hot mixed asphalt; and removing the existing water distribution system and sewer lines and installing a new water distribution system and new sewer lines. The expected acceptance date is pending.

Environmental Activities

Notable Environmental Work

Perris Dam Emergency Release Facility Efforts

Efforts to support the seismic remediation of Perris Dam continued in 2018. On May 2, 2018, the *Perris Dam Emergency Release Facility Project Final Environmental Impact Report* was certified, and a notice of determination was published at the State Clearinghouse. The final environmental impact report analyzed impacts from the emergency release facility (formerly named the emergency outlet extension) component of the Perris Dam Seismic Remediation Project. Upon completion of the final environmental impact report, work began to finalize design for the project.

Subsidence Program

San Joaquin Field Division Liner Raise and Instrumentation Project

Environmental planning for the California Aqueduct Subsidence Program began,

including environmental surveys to prepare an initial study and mitigated negative declaration for the San Joaquin Field Division Liner Raise and Instrumentation Project.

Real Estate Activities

DWR conducted the following real estate activities from January 1 through December 31, 2018.

SWP Acquisitions

In 2018, DWR conducted the following activities related to SWP acquisitions.

Yolo Bypass Salmonid Habitat Restoration and Fish Passage Program

Acquisition activities included the following:

- closed escrow for one permanent easement (4.77 acres) that will be used to construct, operate, and maintain the Wallace Weir Fish Rescue Facility in Yolo County
- closed escrow for one permanent easement (1.66 acres) that will be used to construct, operate, and maintain the Wallace Weir Fish Rescue Facility in Yolo County
- closed escrow for one permanent easement (3.10 acres) that will be used to construct, operate, and maintain the Fremont Weir Adult Fish Passage Facility in Yolo County
- negotiated and fully executed a temporary entry permit for Yolo County Assessor Parcel Nos. 042-270-015-000 and 014-600-073-000 that allows DWR to enter with all necessary equipment for accessing existing telemetry receivers and conducting environmental, cultural, geological, and other surveys as part of the Agricultural Road Crossing 4 Fish Passage Project

Oroville Dam Spillways Incident

Acquisition activities included the following:

- negotiated and fully executed a temporary entry permit for Butte County Assessor Parcel No. 069-010-022 that allows a mobile cellular tower at Oroville Dam for mobile data and cellular communication
- negotiated and executed a temporary site license for Butte County Assessor Parcel No. 069-010-022 that allows a cell phone provider to install, operate, and maintain a temporary cell tower site on wheels to improve cell service at the Oroville Dam spillways incident construction site

Fish Restoration Program

Acquisition activities included the following:

- negotiated and obtained a fully executed temporary entry permit from The Metropolitan Water District of Southern California for Solano County Assessor Parcel No. 0090-060-010 to conduct a jurisdictional delineation and a series of topography and bathymetry surveys for the Chipps Island acquisition and tidal habitat restoration project
- executed and recorded a quitclaim deed releasing a sealed and abandoned natural gas pipeline from the property owner to DWR to allow tidal habitat restoration to proceed on Bradmoor Island in Solano County as part of the Bradmoor Island tidal habitat restoration project
- acquired DWR Parcel No. FSR-04 (28.76 acres), also known as Contra Costa County Assessor Parcel No. 074-020-002-7, for the Winter Island acquisition and tidal habitat restoration project
- executed a temporary entry permit for Decker Island in Solano County that allows use of the dock and pier for loading construction and monitoring equipment to assist in the next phase of

riparian habitat monitoring for the Decker Island tidal habitat restoration project

- coordinated the removal of an electrical line and seven Pacific Gas & Electric Company electrical utility poles, and accepted and recorded the quitclaim deed of Pacific Gas & Electric Company's pole line easement, as part of the Arnold Slough tidal habitat restoration project

North Central Region Office Coordinated Temporary Entry Permits

Acquisition activities included the following:

- executed a temporary entry permit for continued use and access to a monitoring station and processed a warrant request for a one-time payment to property owner for repair costs associated with the existing platform located on San Joaquin County Assessor Parcel No. 189-050-43 near Finck Road
- executed a warrant request for \$1,920, payable to the property owner of Contra Costa County Assessor Parcel Nos. 030-090-005-7 and 030-090-047-9, for the continued annual installation of a water quality monitoring station at Bethel Island's Piper Slough in support of DWR's Division of Operations and Maintenance's Delta operations project
- executed a warrant request for the annual payment to a landowner for a temporary entry permit to enter Contra Costa County Assessor Parcel Nos. 030-090-005-7 and 030-090-047-9 to access, install, operate, and maintain a telemetered water quality monitoring station on Bethel Island in support of DWR's Division of Operations and Maintenance's Delta operations project

East Branch Extension, Phase I Improvements and Phase II Projects

DWR fully executed two quitclaim deeds to clear temporary construction easements.

Lake Perris Emergency Release Facility

Acquisition activities included the following:

- negotiated and fully executed a temporary entry permit and an addendum to allow geotechnical exploration at Perris Dam on Riverside County Assessor Parcel No. 302-270-007
- facilitated the extension of the previously established Architecture Revolving Fund account with the Department of General Services to contract for specialized right-of-way services through the Department of General Services' Real Property Services Section

SBA—Santa Clara Pipeline Emergency Repair Milepost 32.41

On December 22, 2017, the SBA's Santa Clara Pipeline experienced an uncontrolled flow of water near Milepost 32.41 in the City of Fremont. Ensuing acquisition activities in 2018 included the following:

- submitted a right-of-way certification allowing the advertisement for Specification No. 18-08 to conduct repairs to the Santa Clara Pipeline
- fully executed a temporary entry permit and right-of-way agreement to enter private property, conduct inspections, and reimburse property owner on Alameda County Assessor Parcel No. 519-1671-060 for any damages resulting from the cleaning, repairs, or replacement of damaged property
- negotiated and obtained a fully executed temporary entry permit to enter private property on Alameda County Assessor Parcel No. 519-1673-019 and assess, inspect, document, and remediate any potential effects caused by the unintentional release of water
- executed a right-of-way agreement for Alameda County Assessor Parcel No. 519-1673-019 allowing DWR to reimburse private property owner for any damages to property

South Delta Temporary Barriers Project

Acquisition activities included the following:

- negotiated and fully executed two temporary entry permits to stage construction equipment, stockpile rock-fill materials, store steel culverts, and to perform operation and maintenance of a temporary rock barrier at Head of Old River, in Old River where it splits from the San Joaquin River, on San Joaquin County Assessor Parcel Nos. 213-310-06, -31, and -33
- negotiated and fully executed an addendum to two temporary entry permits to install shore-based acoustic telemetry receiver equipment on San Joaquin County Assessor Parcel Nos. 213-310-06, -31, and -33 as part of a large-scale acoustic telemetry study that is an integral part of DWR's required adaptive management strategy
- negotiated and fully executed two temporary entry permits to allow access for the installation and maintenance of a public information kiosk on San Joaquin County Assessor Parcel No. 210-210-18 in support of the Bay Delta Office
- negotiated and executed a temporary entry permit to allow access, operation, and maintenance of temporary rock barriers at Middle River on San Joaquin County Assessor Parcel No. 131-120-04 in support of the Bay Delta Office

Delta Island Consumptive Use Monitoring Program

DWR negotiated and fully executed four temporary entry permits for access to existing water information monitoring stations on San Joaquin County Assessor Parcel Nos. 069-020-19 and 001-050-10, as well as Sacramento County Assessor Parcel Nos. 146-0110-016, -19, and -20, and 146-0190-005, to perform maintenance and collect water quality data.

Milepost 62 Embankment and Liner Repair Project

The California Aqueduct liner needed repairs at mileposts 62.26 and 65.77 in Merced County. Acquisition activities required for construction purposes included the following:

- executed a temporary access permit with the U.S. Bureau of Reclamation to facilitate the extraction of rock-fill material
- executed two right-of-way contracts for temporary construction areas

Los Banos Detention Dam Vegetation Removal Project

DWR negotiated and fully executed a temporary entry permit for Merced County Assessor Parcel No. 088-070-029 that allows DWR to enter with all necessary equipment for clearing vegetation from the downstream channel of the Los Banos Detention Dam and box culvert channel.

2014-Part 12D Parish Camp Saddle Dam Study (R-1 and R-9)

DWR negotiated and executed a temporary entry permit for Butte County Assessor Parcel Nos. 061-470-001, -002, -008, and -015 that allows DWR geologists to enter with all necessary equipment for performing periodic maintenance, collecting water quality data, and collecting geologic data.

Devil Canyon Project, Federal Energy Regulatory Commission Relicensing

DWR executed a temporary entry permit for access onto property in Hesperia, California, to study the environmental conditions and impacts of Cedar Springs Dam releases upon the West Fork of the Mojave River for approximately six miles downstream from the Cedar Springs Dam.

Morrow Island Monitoring Project

DWR executed the automatic lease renewal and payment with Morrow Island Land Company for access onto Morrow Island for two water monitoring stations, Godfather II and Goodyear, for the purposes of performing periodic maintenance and data collection on behalf of, and in support of, DWR's Division of Environmental Services.

Temporary Entry Permits Summary

In 2018, DWR obtained 41 temporary entry permits:

- Agricultural Road Crossing 4 Fish Passage Project, 1
- Cold stream gauge project, 1
- Decker Island restoration project, 1
- Delta Island Consumptive Use Monitoring Program, 4
- Devil Canyon Project, Federal Energy Regulatory Commission relicensing, 1
- Fish Restoration Program, Chippis Island, 2
- Kiosk—Head of Old River, 2
- Lake Oroville spillways recovery project, 1
- Lake Perris emergency release facility project, 2
- Los Banos Detention Dam vegetation removal project, 1
- Milepost 62 embankment and liner repair project, 1
- North Central Region Office Coordinated Temporary Entry Permits Program, 14
- SBA—Santa Clara Pipeline emergency repair, 2
- South Delta Improvement Program—temporary rock barriers, 1
- South Delta Temporary Barriers Project, 4
- Sycamore Island fishing pond enhancement project, 1
- 2014-12D Parish Camp Saddle Dam study, 1
- 2017 storm damage emergency rehabilitation, 1

SWP Property Management

In 2018, DWR conducted the following activities related to property management:

- managed leasing activities of SWP nonoperating properties, which produced \$728,342
- processed 39 and executed 15 encroachment permit applications
- collected fees totaling \$627,962 for review and inspection costs related to encroachment permit applications
- coordinated review of one tentative tract map development within one mile of the California Aqueduct

SWP Appraisals

In 2018, 23 percent of total appraisal assignments (8 of 35) completed by DWR were exclusively for the SWP:

- Fish Restoration Program—completed four appraisals (two each for the Prospect Island and Chipps Island projects) and two appraisal reviews (for the Prospect Island project)
- California WaterFix Project—completed one appraisal and one appraisal review, both for Bouldin Island

Table 11-1 Design Activities, 2018

| Construction Division and Facility | Design Activity | Date Design Began | Design Actual/ Estimated Completion Date |
|---|--|--------------------------|---|
| Upper Feather River Division | | | |
| Antelope Dam, Grizzly Valley Dam, and Frenchman Dam spillways | Inspections | June 2017 | pending |
| Upper Feather River dams | Faulting and seismicity updated reports | February 2016 | November 2019 |
| Upper Feather River | Phase II Light Detection and Ranging (LiDAR) and orthomosaic from photogrammetry study | March 2017 | July 2019 |
| Oroville Division | | | |
| Oroville, Thermalito Afterbay, and Thermalito Forebay dams | Radial gate programmatic refurbishment | December 2016 | November 2018 |
| Oroville Dam | Seepage and slope stability analyses | July 2016 | September 2018 |
| | Emergency spillway stability analyses (Part 12) | January 2017 | June 2018 |
| Bidwell Canyon Boat Ramp, Site 3 | Parking expansion | June 2017 | September 2018 |
| Bidwell Canyon Boat Ramp, Site 5 | Stage 1 boat ramp lane additions | June 2017 | July 2018 |
| Bidwell Canyon Boat Ramp, Site 8 | Stage 2 parking lot expansion and boat ramp lane addition | June 2017 | March 2019 |
| Bidwell Canyon Marina, Site 4 | Parking lot expansion | November 2017 | February 2019 |
| Bidwell Saddle Dam Trailhead, Site 7 | Access improvements | June 2017 | April 2019 |
| Enterprise, Site 6 | Boat ramp extension and expansion | June 2017 | December 2018 |
| Lime Saddle, Site 2 | Parking expansion | June 2017 | June 2018 |
| Bidwell Canyon and Lime Saddle marinas, Site 9 | Low water access | June 2017 | October 2018 |
| Oroville Field Division Federal Energy Regulatory Commission License Coordination Branch | Modular office building project | February 2017 | May 2019 |
| Hyatt Powerplant | Emergency recovery 230 kilovolt power lines project | February 2017 | July 2019 |
| Oroville, Thermalito Afterbay, Thermalito Diversion, Thermalito Forebay, Bidwell Canyon Saddle, Parish Camp Saddle, and Feather River Fish Barrier dams | Updated faulting and seismicity reports (Part 12) | January 2017 | April 2018 |
| Suisun Marsh Facilities | | | |
| Roaring River Distribution System | West drain structure improvement project | November 2017 | April 2018 |
| Delta Facilities | | | |
| Prospect Island | Tidal habitat restoration | November 2016 | March 2018 |
| Winter Island | Tidal habitat restoration | March 2015 | October 2019 |
| Decker Island | Habitat restoration | January 2016 | June 2018 |
| Sacramento Maintenance Yard | Rehabilitation project | December 2017 | May 2018 |
| North Bay Aqueduct | | | |
| North Bay Aqueduct | Alternate intake study | October 2008 | June 2018 |

Table 11-1 Design Activities, 2018

Sheet 2 of 2

| Construction Division and Facility | Design Activity | Date Design Began | Design Actual/ Estimated Completion Date |
|------------------------------------|---|-------------------|---|
| South Bay Aqueduct | | | |
| South Bay Aqueduct | Milepost 35 out of round repair | August 2017 | October 2021 |
| | Compression vault project | January 2015 | June 2019 |
| Del Valle Dam | Phase II conservation outlet works intake structure stability investigation | December 2018 | December 2019 |
| Del Valle Dam Spillway | Inspections | September 2017 | pending |
| Del Valle Pipeline | Sycamore Park slide gate hydraulic study | April 2018 | pending |
| Dyer Reservoir | Emergency repair to liner | April 2018 | May 2018 |
| North San Joaquin Division | | | |
| Clifton Court Forebay Dam | Dredging in depth study | June 2016 | December 2018 |
| Delta Field Division | Lower Elkhorn Basin levee setback | April 2016 | July 2019 |
| San Luis Division | | | |
| Dos Amigos Pumping Plant | Geologic investigation, review, planning workshop | October 2018 | October 2020 |
| San Luis Field Division | Inspect and repair irrigation crossings | July 2016 | September 2020 |
| | Pools 20 and 21 embankment subsidence rehabilitation | August 2018 | October 2020 |
| South San Joaquin Division | | | |
| Buena Vista Pumping Plant | Replace water line | October 2016 | pending |
| San Joaquin Field Division | Liner raise and instrumentation | February 2018 | December 2020 |
| West Branch | | | |
| Pyramid Dam Spillway | Inspections | May 2017 | pending |
| Castaic Dam Spillway | Inspections | October 2017 | pending |
| Tehachapi Division | | | |
| Edmonston Pumping Plant | East and west elevators replacement | December 2017 | December 2020 |
| Mojave Division | | | |
| Cottonwood Chute No. 2 | Generator design | March 2016 | February 2019 |
| Cedar Springs Dam Spillway | Inspections | July 2017 | pending |
| Santa Ana Division | | | |
| Perris Dam | Emergency release facility preliminary design and environmental documents | October 2006 | January 2019 |
| Crafton Hills Reservoir | Seepage repair study | May 2016 | August 2018 |
| Miscellaneous | | | |
| State Water Project | Light Detection and Ranging (LiDAR) and ortho photogrammetry study | June 2016 | pending |
| California WaterFix—Bouldin Island | Access roads and site improvement | December 2017 | August 2018 |
| California WaterFix—Legal Delta | Right-of-way due diligence research study | October 2017 | December 2019 |

Table 11-2 Construction Activities, 2018

Sheet 1 of 3

| Construction Division and Facility | Construction Contract (Specification Number) | Notice to Begin Work | Acceptance Date (expected or actual) | Estimated Total Contract Costs (in thousands of dollars) |
|---|---|---------------------------------|---|---|
| State Water Project—General | | | | |
| Antelope Dam, Frenchman Dam, and Grizzly Valley Dam | Spillway repairs (17-17) | August 2017 | June 2018 | 403 |
| Northern Yolo Bypass | Fremont Weir modification to build new channel for improved adult fish passage (17-18) | September 2017 | August 2020 | 8,292 |
| Oroville Division | | | | |
| Hyatt Powerplant, Thermalito Diversion Dam Powerplant, and Oroville Operations and Maintenance Center | Fire systems modernization (15-06) | October 2015 | pending | 14,875 |
| Robie Thermalito Pumping-Generating Plant | Main control board system installation (16-11) | December 2016 | pending | 2,470 |
| | Life safety improvements (16-14) | February 2017 | pending | 1,688 |
| Oroville Dam | Service spillway (flood control outlet) and emergency spillway repairs (17-04) | February 2017 | pending | 108,152 |
| | Service spillway (flood control outlet) and emergency spillway restoration (17-09) | April 2017 | pending | 701,814 |
| Thermalito Diversion Pool | Water-based operation to remove sediment and debris (17-10) | June 2017 | July 2018 | 22,395 |
| Bidwell Canyon Boat Ramp, Site 5 | Stage 1 boat ramp lane additions (17-25) | December 2017 | April 2018 | 1,274 |
| Bidwell Canyon Parking Lot, Site 8 | Stage II improvements, including reconstructing and paving existing gravel lot to provide additional paved vehicle/trailer parking spaces (18-05) | October 2018 | pending | 6,505 |
| Bidwell Saddle Dam Trailhead, Site 7 | Improvements to add recreational picnic areas and accessible parking (18-15) | August 2018 | pending | 390 |
| Low Water Access Trail, Site 9a, Lake Oroville Marina | Construct trail from existing Lime Saddle boat ramp to mobile Lake Oroville Marina (18-17) | October 2018 | July 2020 | 625 |
| Oroville Dam, Thermalito Diversion Dam, and Oroville Operations and Maintenance Center | Security improvements at the Oroville Field Division water facilities located in Butte County (18-09) | August 2018 | pending | 25,253 |
| Thermalito Diversion Dam | Radial gates maintenance repair, Phase II (18-07) | June 2018 | February 2019 | 1,131 |
| Bidwell Canyon Marina Parking Lot, Site 4 | Expansion, including additional parking spaces east of the Bidwell Campground Gold Flat Loop and accessibility improvements in the existing tiered marina parking lot (18-16) | November 2018 | November 2019 | 851 |

Table 11-2 Construction Activities, 2018

Sheet 2 of 3

| Construction Division and Facility | Construction Contract (Specification Number) | Notice to Begin Work | Acceptance Date (expected or actual) | Estimated Total Contract Costs (in thousands of dollars) |
|--|---|---------------------------------|---|---|
| South Bay Aqueduct | | | | |
| Santa Clara Pipeline Mileposts 16.30, 28.90, 34.23, and 41.68 | Modify valve vaults to furnish and install lockouts for butterfly valves and modify an existing gas line (16-09) | October 2016 | August 2019 | 3,597 |
| North San Joaquin Division | | | | |
| Sherman Island | Construct fish release sites at Little Baja and Manzo Ranch (16-01) | April 2016 | June 2019 | 2,268 |
| Clifton Court Forebay Dam | Refurbish radial gates 1, 2, 3, 4, and 5 (16-06) Repair existing eroded bank slope and damage to existing asphalt concrete roadway (18-13) | September 2016 May 2018 | October 2020 pending | 3,960 406 |
| West Weber North Storage Facility | Site improvements (17-01) | May 2017 | October 2019 | 9,285 |
| SWP Telecommunications Towers | Construction (17-02) | May 2017 | April 2018 | 633 |
| Chrisman Pumping Plant | Apron repairs, remove and replace existing broken concrete panels; place reinforcing steel and backfill (18-20) | December 2018 | September 2019 | 781 |
| Mojave Division | | | | |
| Cedar Springs Dam | Spillway repair (17-20) | September 2017 | May 2018 | 443 |
| Santa Ana Division | | | | |
| East Branch Extension Phase II | | | | |
| Crafton Hills and Cherry Valley pump stations and Mentone Pipeline | Manufacture, test, and deliver 12 AWWA butterfly valves (10-17) | February 2011 | August 2018 | 497 |
| Crafton Hills and Citrus pump stations | Furnish 5 kilovolt switchgear (13-12) | May 2014 | November 2018 | 4,565 |
| Crafton Hills, Citrus, and Cherry Valley pump stations | Manufacture, test, and deliver 12 ANSI ball valves (10-18) Provide pumps, motors, variable frequency drives, and excitation system equipment (13-01) | January 2011 June 2013 | July 2018 December 2019 | 2,993 18,151 |
| | Crafton Hills Pump Station Expansion (completion work), construct Citrus Pump Station (completion work), and install one additional pump/motor unit at Cherry Valley Pump Station (14-21) | March 2015 | July 2018 | 23,871 |
| West Branch | | | | |
| Perris Dam | Seismic remediation of dam embankment (14-03) | August 2014 | June 2018 | 75,539 |
| Pyramid Dam | Spillway repairs (17-19) | September 2017 | May 2018 | 968 |
| Los Robles Road | Seismic retrofit of bridge (18-08) | July 2018 | January 2020 | 3,515 |

Table 11-2 Construction Activities, 2018

| Construction Division and Facility | Construction Contract (Specification Number) | Notice to Begin Work | Acceptance Date (expected or actual) | Estimated Total Contract Costs (in thousands of dollars) |
|---|--|---------------------------------|---|---|
| Multiple Divisions | | | | |
| Badger Hill Pipeline and Mojave Siphon | Pipeline repair (13-14) | November 2013 | October 2018 | 3,325 |
| San Joaquin Field Division | Replace standby engine generators (14-19) | May 2015 | June 2018 | 4,450 |
| Roaring River Distribution System, Montezuma Slough | Drain structure replacement (17-11) | June 2017 | February 2019 | 1,167 |
| Suisun Marsh and Delta Legal Boundary | Levee and wetland maintenance 2018, 2019, 2020, and 2021: levee repairs, road repairs, water control structural repairs, channel flow improvements, associated appurtenant structures and other earthwork; interior property maintenance and selective trash & debris removal & disposal from both above and below waterline (18-02) | April 2018 | pending | 2,045 |
| Elk Slough, Cache Slough, Lindsey Slough, Steamboat Slough, and Shag Slough | Levee repairs at nine sites: landside slope repair, waterside slope repair, tree removal, clearing and grubbing, earthfill, seeding and erosion control (18-03) | June 2018 | November 2019 | 4,402 |
| Decker Island | Tidal wetland habitat restoration (18-04) | July 2018 | pending | 681 |
| Roaring River Distribution System, western drain | Installation of a 48-inch pipe, canal gate, flap gate, timber bulkheads, walkways, and miscellaneous items (18-06) | June 2018 | February 2019 | 757 |
| Sacramento Maintenance Yard | Roofing replacement (18-10) Phase I site rehabilitation including demolition and excavation of various areas and installation of new drainage system (18-12) | May 2018 July 2018 | June 2019 pending | 158 6,044 |



Chapter 12

Recreation

A California Department of Forestry and Fire Protection helicopter at a 2017 Catch A Special Thrill (C.A.S.T.) for Kids fishing event on Brannan Island.

Significant Events in 2018

In 2018, recreation use in the Lake Oroville State Recreation Area continued to be affected by the prior year's Oroville Dam spillways incident. To compensate for the temporary closure of some recreation sites and facilities, the Department of Water Resources (DWR) continued to improve facilities at other sites.

DWR and its recreation contractor co-hosted Pyramid Lake's first annual Catch A Special Thrill (C.A.S.T.) for Kids fishing event. At the late-summer outing, 30 children with special needs were paired with the area's bass fishermen for a day of fishing on Pyramid Lake.

The Perris Dam Seismic Remediation Project was officially completed in April 2018. That spring, DWR began a controlled refilling of the reservoir to its originally intended water levels. The gradual restoration of normal water levels created new recreation opportunities and restored old but forgotten recreation to the lake, including a completed nine-mile lakeshore trail that crosses the dam, enhanced fisheries with habitats installed by the Department of Fish and Wildlife (DFW), a re-opened campground, additional boat ramps, an accessible pier for users with disabilities, and waterfowl hunting.

Information for this chapter was provided by the Division of Integrated Regional Water Management, the Public Affairs Office, the Division of Environmental Services, and the State Water Project Analysis Office.

The State Water Project (SWP) is a multipurpose project that provides recreational benefits to millions of Californians. In addition to providing water supply, flood control, and habitat for fish and wildlife, the SWP offers extensive and varied recreational opportunities—tours, sightseeing, fishing, hunting, picnicking, camping, boating, water skiing, bicycling, hiking, and swimming. Under the Davis-Dolwig Act, these recreational opportunities, as well as fish and wildlife enhancements, are not allocable as water and power costs to the SWP water contractors. The Davis-Dolwig Act, together with the Burns-Porter Act, provide financing for SWP recreational facilities and fish and wildlife enhancement projects, declaring that these projects benefit all the people of California and should be paid for by all Californians. Department of Water Resources (DWR) coordinates with the California Department of Parks and Recreation (California State Parks) and the Department of Fish and Wildlife (DFW) to ensure that the recreation and fish and wildlife enhancement potential at SWP facilities is fully realized.

Recreation Areas

The SWP has 36 developed recreation areas or sites throughout California, including 18 developed fishing access sites. Figure 12-1 shows the name and location of each area.

Recreation Use

Recreation Days

Since the SWP began delivering water in 1962, nearly 256.7 million recreation days have been recorded at SWP recreation facilities. A recreation day is defined as one individual user visiting a recreation site along the SWP within all or part of a one-day period.

In 2018, SWP facilities supported an estimated 4.7 million recreation days of use (Table 12-1), up five percent from 2017's 4.5 million recreation days and the fourth highest on record. (The SWP supported the highest attendance at 4,818,900 in 2000.) Most of the SWP recreation use was concentrated at the major reservoirs, with approximately 42 percent of the recreation attendance occurring in the Southern Field Division, 36 percent occurring in the Oroville Field Division, and the remaining 22 percent distributed between the remaining three field divisions.

SWP Educational Visitors Centers

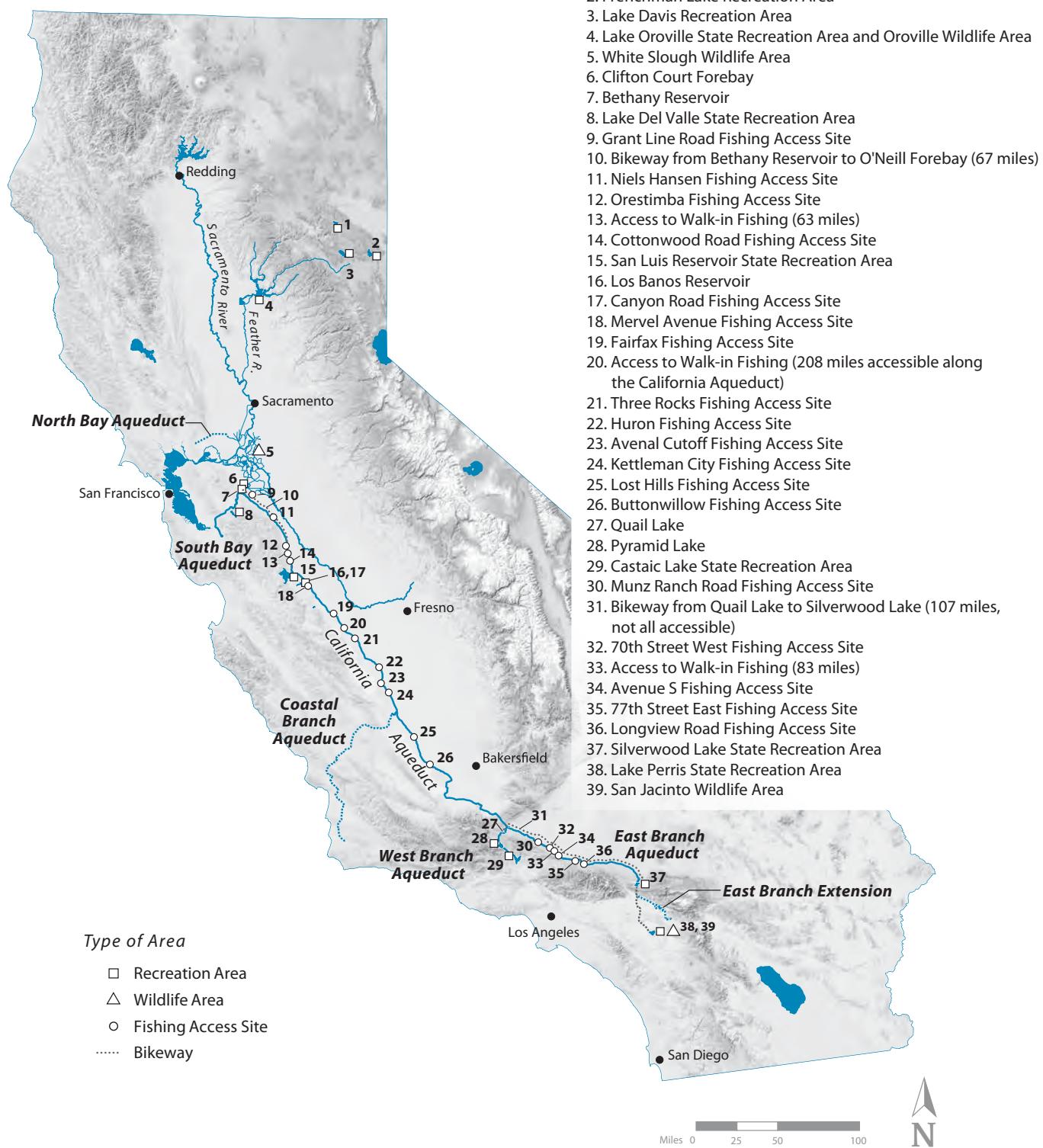
Visitation at DWR's three SWP educational visitors centers, in recreation days, totaled approximately 452,200:

- (1) 112,400 at Lake Oroville Visitors Center
- (2) 173,700 at Romero Overlook Visitors Center, San Luis Reservoir
- (3) 166,100 at Vista Del Lago Visitors Center, Pyramid Lake

Overall, the recreation usage of over 4.7 million recreation days at the SWP facilities listed in Table 12-1 contributed significantly to the total visitation reported at the 280 units of the California State Park System in fiscal year 2018–2019.

Three additional visitors centers located at SWP facilities are operated by either California State Parks or by East Bay Regional Park District (EBRPD):

- (1) Rocky Ridge Visitors Center, located at Lake Del Valle, is operated by EBRPD and received 15,896 visitors in 2018. Using DWR's annual allocation of the Land and Water Conservation Fund grant and EBRPD's own funding sources, this visitors center will be closed for remodeling and renovation from 2019 through 2020.

**Figure 12-1** Names and Locations of SWP Recreation Areas

- (2) Ya'i Heki' Regional Indian Museum, located at Lake Perris, was originally constructed by DWR and is operated by California State Parks. It received 3,401 visitors in 2018.
- (3) The Silverwood Lake Visitors Center, constructed by California State Parks, was closed to the public in 2018. See the "Improvements to Facilities, Silverwood Lake State Recreation Area" section in this chapter for more information.

Upper Feather River Lakes Recreation Studies

The U.S. Forest Service operates the recreation areas at the Upper Feather River lakes. Only paid recreation uses, such as campground or day-use fees, are reported to DWR. Free dispersed recreation use is not reported; consequently, recreation use is underreported for the three Upper Feather River lakes in Table 12-1. In an effort to obtain more accurate data about these locations, DWR conducts an annual creel survey and an annual fisheries survey at one of the Upper Feather River lakes on a rotating basis.

Creel Survey 2018

A creel survey is a sampling tool used to measure the fishing activities of sport anglers and to estimate the amount of fish harvested from a body of water. It involves interviewing anglers about the day's fishing effort, including what the angler caught, released, and how much time was spent fishing. In 2018, DWR conducted its creel survey at Frenchman Lake between the last weekend in April and November 15. A total of 490 recreation interviews were conducted, and an estimated 166,500 persons used the lake for camping, fishing, and day use (see Table 12-1).

Table 12-1 Estimated Recreation Days in 2018, by Field Division Facility

| Facility, Grouped by Field Division | Recreation Days (rounded) |
|--|---------------------------|
| Frenchman Lake | 166,500 ^a |
| Antelope Lake | 94,400 ^a |
| Lake Davis | 89,000 ^a |
| Lake Oroville, Thermalito Diversion Pool, and Thermalito Forebay | 585,300 |
| Thermalito Afterbay and Oroville Wildlife Area | 449,400 |
| Feather River Fish Hatchery | 186,400 ^b |
| Lake Oroville Visitors Center | 112,400 |
| Oroville Field Division Subtotal | 1,683,400 |
| Lake Del Valle | 595,500 |
| Bethany Reservoir | 4,100 ^c |
| White Slough Wildlife Area | 5,500 |
| Delta Field Division Subtotal | 605,100 |
| San Luis Reservoir State Recreation Area: San Luis Reservoir, O'Neill Forebay, and Los Banos Reservoir | 276,100 |
| Romero Overlook Visitors Center | 173,700 |
| San Luis Field Division Subtotal | 449,800 |
| Fishing Access Sites: Kettleman City, Lost Hills, Buttonwillow, and California Aqueduct Walk-in Fishing | 9,300 ^a |
| San Joaquin Field Division Subtotal | 9,300 |
| Silverwood Lake | 322,900 |
| Lake Perris | 857,500 |
| Vista Del Lago Visitors Center | 166,100 |
| Pyramid Lake | 92,900 |
| Castaic Lake and Castaic Lagoon | 520,400 |
| Fishing Access Sites: Quail Lake | 2,200 ^a |
| Longview Road | 100 ^a |
| California Aqueduct: Walk-in Fishing | 3,200 ^a |
| Bikeway | 5,200 ^a |
| Southern Field Division Subtotal | 1,970,500 |
| Total for Recreational Sites | 4,265,900 |
| Total for Visitors Centers | 452,200 |
| Grand Total | 4,718,100 |

Note: These values are provided by facility operators and numerous other sources, and vary in their degree of accuracy. Recreation days are based on counts except where noted, which are based on partial data.

^aThese locations are not regularly monitored and are visually monitored only. It is likely that these areas are used significantly more than what is represented here, but it is difficult to ascertain realistic annual use.

^bThe Feather River Fish Hatchery was closed for three months in 2018 as a result of the 2017 Oroville Dam spillways incident.

^cAt this facility, attendance is only counted Thursdays through Sundays, but the park is open to the public the remainder of the week.

Fisheries Survey 2018

Since construction of the Upper Feather River projects in the 1960s, streamflow release schedules for all three reservoirs (Antelope, Frenchman, and Davis lakes) have been reevaluated and modified to varying degrees. DWR modifies streamflow to improve downstream conditions for both streamside recreation and wild trout populations. Managing these reservoirs provides information about recreation enhancement use levels and quality, as well as reassurance that northern pike (*Esox lucius*) remain eradicated from the system. The annual fisheries survey provides additional data about fishery abundance, populations, and health.

For 2018, DWR conducted its electrofishing survey on Little Last Chance Creek below Frenchman Dam. Data was collected at three stations using the multiple-pass depletion method. A total of 88 rainbow trout (*Oncorhynchus mykiss*) and 46 brown trout (*Salmo trutta*) were captured and measured.

Recreation Facilities

Planning

SWP Recreation Coordinating Committee

In 1960, the San Luis Reservoir Recreation Coordinating Committee was formed, which included stakeholders from both the Lake Oroville and Lake Perris projects. Shortly thereafter, two additional committees were formed: the Los Angeles and Ventura Counties Committee; and the Riverside and San Bernardino Counties Committee. The purpose of these committees was to present current information and exchange ideas for the ongoing and future recreation planning and maintenance at all SWP facilities. Attendees included SWP participants and the press.

In 1984, the three committees were combined into one and renamed the SWP

Recreation Coordinating Committee (SWP RCC). The SWP RCC meets biannually throughout the state at SWP facilities to continue its function as an open forum to discuss ongoing and future SWP recreation projects. Discussion topics commonly include the following:

- alternative funding of recreation projects
- planning for climatic and seasonal changes in water deliveries
- public outreach and water safety programs
- common problems encountered with aging SWP facilities

The spring 2018 meeting of the SWP RCC was held in Portola, near Lake Davis. DWR's Division of Environmental Services presented the history of and methods used to eradicate northern pike at Lake Davis and Frenchman Lake from 1989 to 2007. The Wildlife Conservation Board discussed the many grants available to State and local agencies to plan and implement recreation projects. The second day of the meeting included visits to both Frenchman Lake and Lake Davis recreation facilities.

The fall 2018 meeting was held in West Sacramento at DWR's North Central Region Office. California State Parks presented its Division of Boating and Waterways' Quagga and Zebra Mussel Infestation Prevention Grant Program. DWR's Division of Environmental Services and North Central Region Office discussed its recent memorandum report, *California Aqueduct Recreation Facilities: Bikeway and Fishing Access Status Review*. The second day of the meeting included a tour led by EBRPD to see the recreation facilities available at Lake Del Valle Regional Park and the improvements performed there using DWR's annual allotment from the Land and Water Conservation Fund grant. It concluded with a visit to EBRPD's Shadow Cliffs Regional Recreation Area to inspect new facilities constructed for EBRPD's solar panel program.

and reclaimed water program, which provide electricity and irrigation water to many of EBRPD's parks, including Lake Del Valle Regional Park.

Lake Oroville State Recreation Area

The Oroville Dam spillways incident in February 2017 affected several Oroville recreation facilities. The recreation facilities most affected by the spillways incident were located near the Oroville Dam and around the Diversion Pool. Flows over the Oroville Dam emergency spillway washed out the road used to access the Spillway Recreation Area. Closure of the Spillway Recreation Area and ensuing repair and construction activities also led to the closure of several miles of trails, including approximately 37 miles of bicycle trails within the Lake

Oroville State Recreation Area, though equestrian trail access throughout the Loafer Creek Recreation Area was not affected. Figure 12-2 depicts most of the trail closures. The Oroville Dam Overlook Day Use Areas remained closed throughout 2018, and the adjacent parking lots were used as construction and staging areas for the recovery effort. Burma Road, sections of the Dan Beebe and Brad Freeman trails, and the entire Diversion Pool were also closed to the public. Many of the recreation facilities are expected to reopen to the public in 2019 or 2020.

Amendment to Oroville Recreation Plan

Due to Temporary Closures. To help offset temporary closures and provide additional recreational opportunities that benefit the

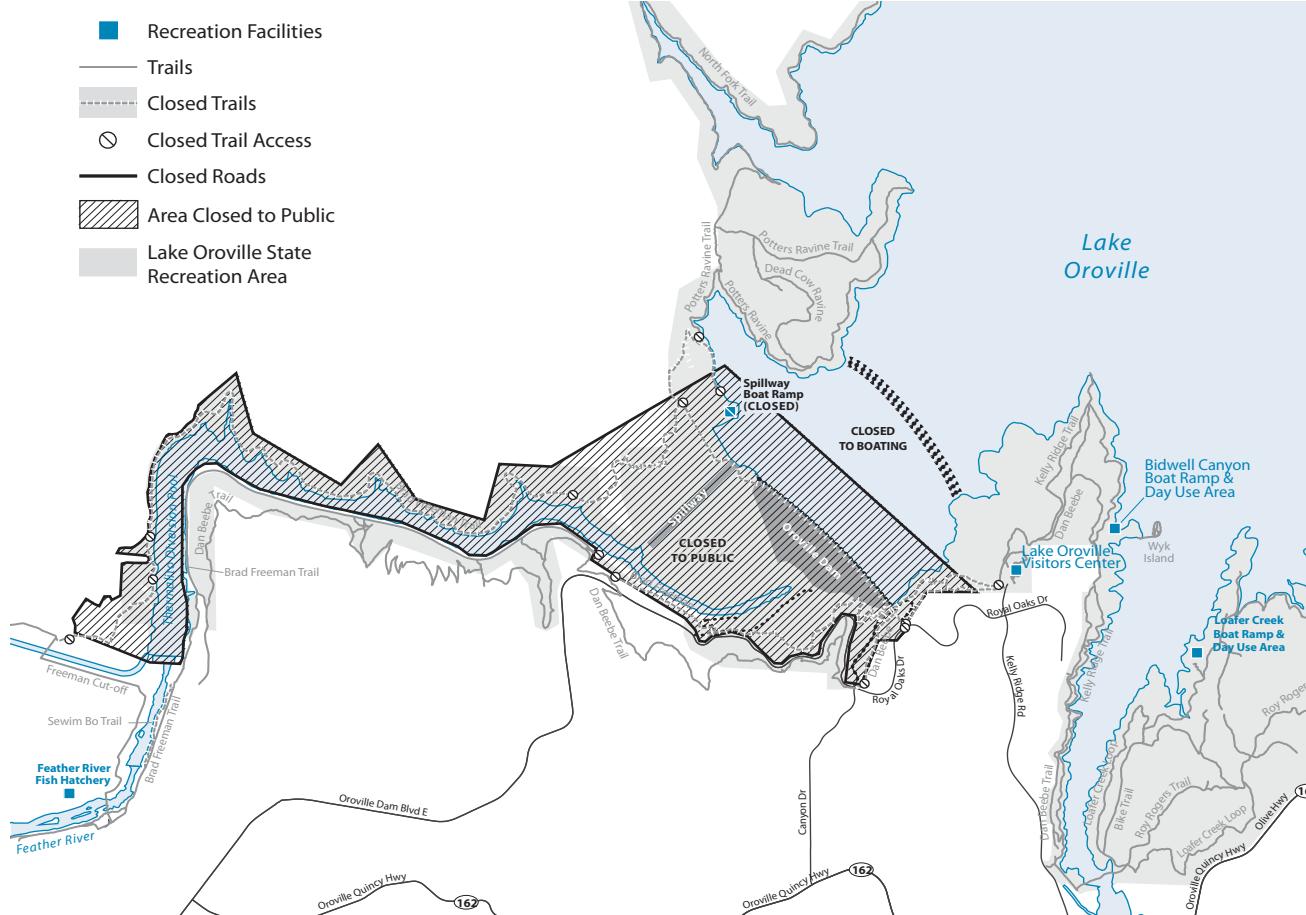


Figure 12-2 Map of Locations Affected by the Oroville Dam Spillways Incident in February 2017

local community in the near term, DWR requested that the Federal Energy Regulatory Commission amend the current (1993) Oroville Facilities recreation plan to include a variety of recreation improvements. These improvements include parking lot expansions, trailhead improvements, new and extended boat ramp lanes, and a substantial new two-stage boat launch facility at Loafer Creek. The Federal Energy Regulatory Commission approved these projects, and DWR implemented several of them in 2018. The Bidwell Saddle Dam Trailhead was also improved. DWR plans to continue implementing these projects through 2023.

Parking will be increased at the following locations:

- Bidwell Canyon Boat Ramp (Stage 2, 97 paved vehicle/trailer spaces)
- Bidwell Canyon Marina (108 single-vehicle spaces)
- Enterprise Boat Ramp (new Stage 2, 10 vehicle/trailer spaces)
- Loafer Point Boat Ramp (Stage 1, 92 vehicle/trailer spaces)
- Loafer Point Boat Ramp (Stage 2, 179 vehicle/trailer spaces)

New boat launch lanes will be added at the following locations:

- Bidwell Canyon Boat Ramp (Stage 2, 2 lanes)
- Enterprise Boat Ramp (2 lanes)
- Loafer Creek Recreation Area (Stage 1, 3 lanes)
- Loafer Creek Recreation Area (Stage 2, 6 lanes)

Many of the projects will require permits, and the scope is subject to change as the projects develop.

Lake Del Valle State Recreation Area

EBRPD worked on the following facility planning in 2018 at Lake Del Valle Regional Park.

New Trail. EBRPD plans to construct a trail to connect Lake Del Valle Regional Park with Shadow Cliffs Regional Recreation Area. A portion of this project was completed in 2014 in cooperation between the City of Livermore and a building materials company. Two and a half miles remain to be completed of the 6.5-mile regional trail, which will eventually connect roughly 44 miles of continuous trail composing part of the 1,200-mile Juan Bautista de Anza National Historic Trail. Pending final designs, cost estimates, permitting, and environmental compliance, the gap south from Vallecitos Road to Livermore Area Regional Park District's Sycamore Grove Park is expected to be completed sometime in 2020.

Dog Run Slide Area. EBRPD plans to repair the dog run slide area to stabilize and prevent further damage to the bank and trail. Repairs include using soil anchors and reinforcing a shotcrete wall. This will conform with the existing slide repair performed in 2015. Work is expected to be completed in 2020 with a budget of \$500,000.

Building Replacements. EBRPD plans to purchase and replace the Kayak Center building along the beach with a trailer, which is scheduled for delivery in March 2019. The budget for this replacement is \$160,000. Service yard electrical improvements, installation of a ramp accessible to users with disabilities, a raised courtyard, and delivery and renovation of two modular buildings is also planned. Construction is expected to be completed in 2020 with a budget of \$850,000.

Castaic Lake State Recreation Area

The 50-year contract to manage recreation at Castaic Lake State Recreation Area between California State Parks and the Los Angeles County Department of Parks and Recreation (LADPR) expires in November 2019. A new contract is being negotiated between the two agencies for a 25-year term to begin upon expiration of the existing contract. Both agencies highly desire to continue the existing relationship.

The County of Los Angeles authorized LADPR to hire a private engineering firm to assess and prioritize the refurbishment of park facilities. The first tasks will be to fix or replace all facility restroom roofs, upgrade the electrical systems, upgrade the irrigation system, and make accessibility upgrades for users with disabilities.

Grant funding through the local Los Angeles County Safe Neighborhood Parks Act of 1996 (Proposition A) ended when Proposition A sunset on June 30, 2018, but one million dollars in funds was set aside to build a "family pavilion" for family and corporate events. Additional upgrades for users with disabilities and new playgrounds around the family pavilion will also be included.

Los Angeles County's local Safe, Clean Neighborhood Parks and Beaches Measure of 2016 (Measure A), which was passed with no sunset period, authorized up to almost four million dollars for Castaic Lake State Recreation Area upgrades. Two million dollars will be used to build picnic shelters throughout the Castaic Lake State Recreation Area, and the other 1.8 million dollars will be used to build 62 recreational vehicle sites with full hook-ups, including sewer hookups. Because the current recreational vehicle camping fees without hookups are \$20, this will allow the park to charge more competitive camping fees.

LADPR is working with DWR and DFW to create a net that will prevent fish from spilling over the Castaic Lagoon Afterbay Control Structure during a flood event so that DFW can meet necessary permitting criteria to plant rainbow trout into Castaic Lagoon.

Silverwood Lake State Recreation Area

At the Rio Group Campground, improvement plans include demolition of the current rotted wooden shade structures, concrete pads, and concrete barbecue counters. These will be replaced with metal shade structures; new concrete pads; and new serving counters and adjustable barbecue stations. All old picnic tables will be replaced with new concrete picnic tables. The facility restroom doors and fixtures will also be upgraded.

New Facilities

DWR's Grant Funding for New Recreation Land and Water Conservation Fund.

Congress enacted the federal Land and Water Conservation Fund Act of 1965 (Title 54, United States Code Section 200301 et seq.) to help preserve, develop, and ensure access to outdoor recreation resources for the health and wellness of U.S. citizens. The law created the Land and Water Conservation Fund as a dedicated funding source to implement these goals. Derived from various types of revenue, including investment earnings from offshore oil and gas leasing, the Land and Water Conservation Fund provides matching grants to states for outdoor recreation projects. Administered by the National Park Service at the federal level and by California State Parks at the State level, DWR receives an annual allocation but must file an application and comply with the Land and Water Conservation Fund's stringent qualification process.

The following application was submitted in 2018 for the SWP:

- DWR jointly used its annual allocation for federal fiscal year 2016–2017 with

EBRPD for the expansion and renovation of the Rocky Ridge Visitors Center at Lake Del Valle. With an annual allocation of \$134,319, EBRPD budgeted \$1,787,300 for this project and plans to complete it in 2020. DWR will contribute interactive displays to educate the public about Lake Del Valle's relationship to the SWP.

Lake Del Valle State Recreation Area

The following projects were completed:

- installed two equipment storage buildings in the service yard as part of Phase II upgrades and renovations
- completed asphalt work and opened two new restroom buildings, #19 and #21, in the campground with funding partly from a Land and Water Conservation Fund grant provided to DWR and the Wildlife Conservation Board

Improvements to Facilities

Lake Oroville State Recreation Area

In 2018, the new gravel parking lot constructed in 2017 at Lime Saddle Recreation Area received lighting, asphalt, drainage improvements, curbs, and striping to accommodate 60 vehicles with trailers. Facility improvements also included upgrading access for users with disabilities.

Picnic tables, shade trees, and a large shade structure were added to the Bidwell Saddle Dam Trailhead, and potable water for a horse watering trough, sink, drinking fountain, and hose bibs was also added.

Two new lanes were added to the Bidwell Canyon Stage I Boat Ramp, which triggered additional access improvements for users with disabilities. In late 2018, construction began on a project to improve and expand the Stage II Boat Ramp at Bidwell Canyon. It is expected to be completed when lower lake levels allow construction to resume. The Stage II expansion provides two new boarding float lanes, two additional

boat launch lanes, and just under 100 new paved parking spaces. (The area formerly accommodated approximately 50 gravel spaces.)

Lake Del Valle State Recreation Area

EBRPD made the following facility improvements in 2018:

- laid rock in the Arroyo Road Staging Area
- added 72.5 tons of boulders in the campground
- installed bicycle and pedestrian counters and car counters at three park entrances
- replaced four large group barbecues at picnic sites
- added storage containers for the service yard and made general improvements
- made improvements to the detention pond
- installed programmable thermostats: two in the visitors center, one in the marine service yard office, and one in the east shore main concession interior

Castaic Lake State Recreation Area

Expanded Beach Hours. LADPR, in an effort to provide more recreational opportunities to local communities, decided to keep the beaches at Castaic Lake open seven days per week during the summer months beginning July 1. In prior summers, they were only open four days per week. This resulted in a 25 percent increase in park attendance.

Dragon Boat Purchase. Castaic Lake purchased a fifth dragon boat from a distributor in China. Each boat costs \$20,000; these are rented out to corporate and young adult teams for competitive dragon boat racing.

Filming. Hollywood production companies came to Castaic Lake throughout the summer of 2018 to include the beauty of Castaic Lake in several movies, television shows, and commercials.

Fire-scoopers. During local 2018 wildland fires, the California Department of Forestry and Fire Protection used air tankers colloquially referred to as “water scoopers” or “fire-scoopers” to scoop up water from Castaic Lake and drop on fires. The use of these amphibious aircraft, which skim the surface of a body of water and scoop water into an onboard tank to drop on fires, has not affected recreational use of the lake.

Silverwood Lake State Recreation Area

California State Parks began a long-term construction and repair project at its visitors center:

- repaired the concrete floor
- replaced the heating, ventilating, and air-conditioning (HVAC) system and upgraded the electrical service to accommodate the new HVAC system
- repaired doors and windows as needed
- installed carpet throughout the inside of the visitors center
- began improving the existing bicycle and pedestrian trail from parking lot #3 for a distance of one-half mile, which included meeting accessibility standards along the trail and constructing an accessible lake overlook for users with disabilities

Recreation Activities

The SWP, with its many reservoirs and hundreds of miles of aqueducts, offers Californians extensive and varied recreational opportunities. Figure 12-3 shows the various types of recreation available along the SWP.

Antelope Lake Recreation Area

DWR and the U.S. Forest Service co-hosted a fall kid’s fishing derby. Drought information, coloring books, and prizes, including fishing poles and fishing reels, were provided. Twenty-five children participated in the fishing derby.

Lake Davis Recreation Area

DWR participated in the Lake Davis Father’s Day Fishing Derby for kids and adults. The event was attended by 50 people and was hosted by the Volunteer Fire Department.

Lake Davis was the venue for a bike race with approximately 200 participants.

Lake Oroville State Recreation Area

DWR, California State Parks, and local agencies sponsored several activities at Lake Oroville State Recreation Area in 2018. These activities occurred despite limitations imposed by the Oroville Dam spillways incident’s closures and subsequent facility changes.

Kiwanis hosted a “Hooked on Fishing, Not on Drugs” free kid’s fishing day at Bedrock Park in the spring. Approximately 900 people attended the half-day event.

California State Parks hosted Bidwell Bar Days at the Bidwell Canyon Day Use Area’s historic Toll House. The event treated 300 park visitors to a day in the life of the old west.

DWR and California State Parks helped support, through a contract with the Oroville Chamber of Commerce, the annual Oroville Salmon Festival. This one-day fall event was held at the Feather River Fish Hatchery, downtown Oroville, and the Feather River Nature Center. An estimated 25,000 participants attended it.

California State Parks helped host the annual Fourth of July celebration at Thermalito Forebay. DWR and other groups sponsored the fireworks display, which was attended by 15,000 people.

The annual Special Olympics for those with disabilities was attended by approximately 500 people. California State Parks set up a

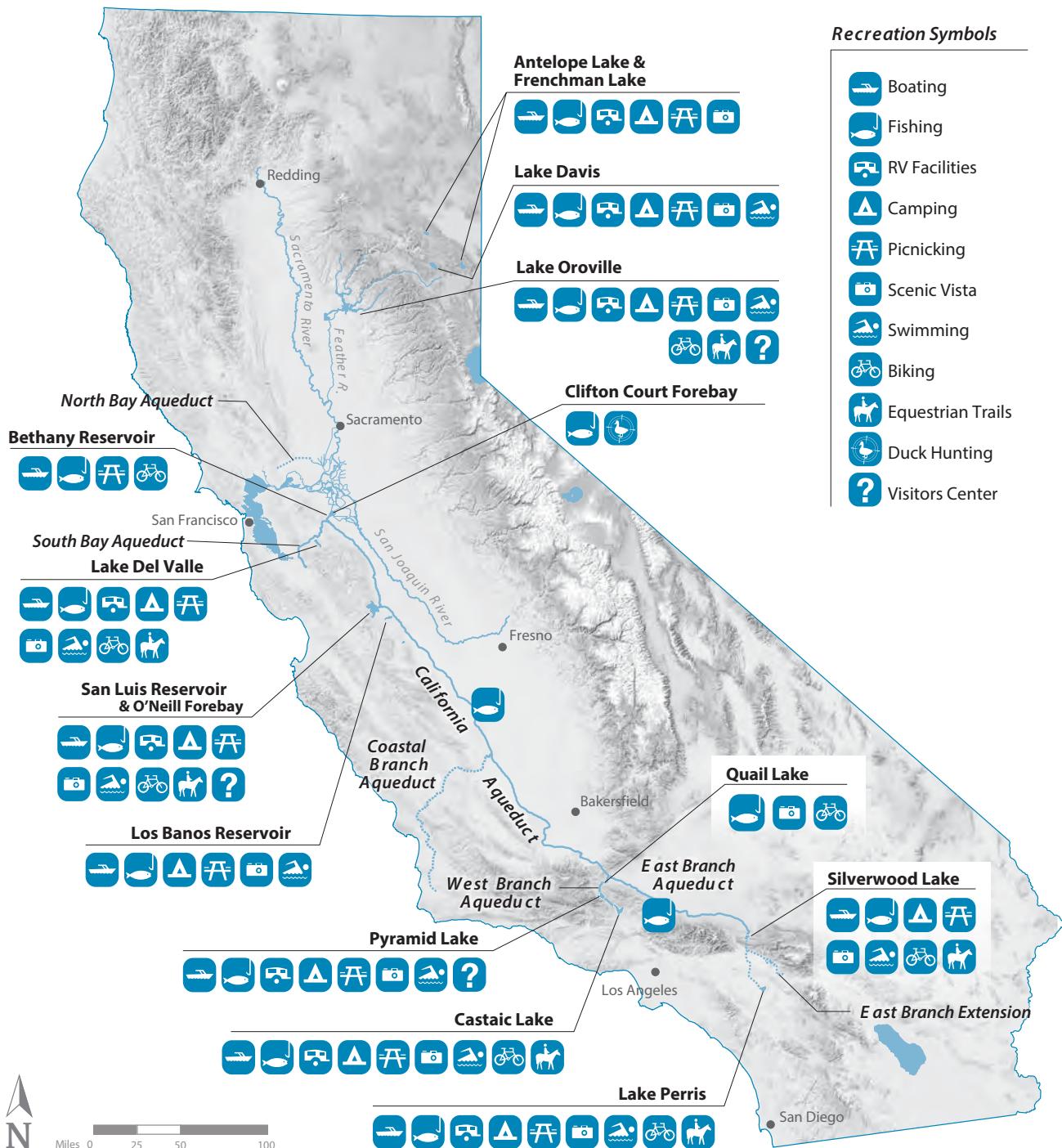


Figure 12-3 Types of Recreation along the SWP

booth with information about local trails that are suitable for individuals with disabilities.

DWR, California State Parks, and the California Department of Forestry and Fire Protection, with assistance from the California Conservation Corps, hosted a Catch A Special Thrill (C.A.S.T.) for Kids fishing event for children with special needs. Due to the Oroville Dam spillways incident, the 14th annual Lake Oroville C.A.S.T. for Kids fishing event, usually held at the Spillway Launch Ramp, was moved to the Bidwell Marina. Eighty boat captains took children fishing. Gift baskets were donated for a fundraiser to cover miscellaneous expenses. Besides learning about the sport of fishing, the children also learned about fishing ethics, boating safety, and California's natural resources.

Early in December, Oroville celebrated the Parade of Lights with approximately 5,500 attendees and a Butte County Explorers Faire with 300 attendees.

DWR provided 32 guided tours of the Lake Oroville spillways and Feather River Fish Hatchery to representatives and associates of The Metropolitan Water District of Southern California. Approximately 1,024 guests took guided tours of these facilities in 2018.

Lake Del Valle State Recreation Area

EBRPD sponsored or co-sponsored the following activities in 2018.

Four Aquatic Adventure Camps, hosted by the local Fire Department and Lifeguard Services, served 76 children between June and July.

During Coastal Cleanup 2018, 110 volunteers cleaned up 2.75 miles of the lake shoreline by removing 165 pounds of trash and 85 pounds of recyclable materials.

Two-hundred forty-one Regional in Nature programs led by naturalists served

6,707 individuals, and 61 non-Regional in Nature programs served 2,833 individuals.

Thirty campfire programs served 1,962 attendees.

Thirty-nine boat tours of Lake Del Valle served 688 attendees.

The Community Outreach Overnight Program, co-sponsored by the YMCA and in partnership with other community groups, provided three camping trips at Lake Del Valle for 57 children and their families.

EBRPD hosted a Fishing Recreation Program, which consisted of a Bass Basics class with 13 participants, a Trout Basics class for six participants, and Fishing Field Trips for 34 participants.

Twenty-three school programs provided 1,586 students with programs such as the Arroyo Study; Del Valle Discoveries; Del Valle Water Wonders; Exploring the Land Adventure Hikes; Geology: If Rocks Could Talk; Nature of the Land Adventure Hike; Stream Study; and U-Pick Nature Program.

Vamos a Aprender ("Let's Go Learn" in Spanish) was created in 2015 to provide free water safety education to children 7 to 15 years of age. The program aims to increase water safety practices and assist Spanish-speaking children with water safety education, as well as teach children how to properly fit and wear a life jacket.

To learn about the local fauna and flora, 15,896 attendees visited the Rocky Ridge Visitors Center.

San Luis Reservoir State Recreation Area

California State Parks sponsored 10 "Path of the Padres" hikes funded by the Four Rivers Association. During March and April, 130 hikers experienced wildflowers,

geology, cultural and historical areas, and Native American sites along a 35-mile trail. (As early as 1805, the Mission Padres and accompanying soldiers rested at Los Banos del Padre Arroyo, now known as Los Banos Creek.) Water conservation and the reservoir systems at Los Banos and San Luis reservoirs were discussed on a boat ride to the trailhead.

DWR and its partners, including California State Parks, the California Department of Forestry and Fire Protection, DFW, the San Joaquin River Exchange Contractors Water Authority, the San Luis & Delta-Mendota Water Authority, and the U.S. Bureau of Reclamation, hosted 15 children with special needs at a C.A.S.T. for Kids fishing event at O'Neill Forebay. The area's top Delta tournament fishermen took the children out for an adventure, educating the children about fishing and fishing ethics. DWR's Delta Field Division provided breakfast burritos, and Kiwanis International provided a barbecue lunch. The Veterans of Foreign Wars conducted an American flag ceremony at the end of the event.

Castaic Lake State Recreation Area

LADPR and Friends of Castaic Lake sponsored the following activities in 2018.

- 10 "Splash in the Water" events for 300 children ages 7 to 14 who learned about water safety, kayaking, canoeing, stand-up paddle boarding, and sailing
- 16 sessions of FamCamp (formerly Aquatic Adventure Camp) co-sponsored by DWR for 3,500 participants ages 17 and under teaching boating safety, camping, and team-building principles
- 58 days of dragon boat paddling for 1,200 participants who learned about teamwork, cooperation, water safety, and how to paddle as a team (Each 10-person team uses the dragon boats to practice for racing throughout the area. Castaic Lake now has five boats available to the public for seasonal rental.)

- Paul George Foundation Fishing Derby competition in July for 425 children, which raised \$25,000 for the Paul George Foundation, an organization that purchases and maintains basketball courts in Palmdale
- Youth Recreation Days co-sponsored by the Off-Highway Motor Vehicle Recreation Division of California State Parks and the Los Angeles County Sheriff's Department, which taught at-risk children how to kayak, boat, and use other water-based recreational vehicles and all-terrain vehicles (ATVs)
- four moonlight kayak events offered to 75 participants who learned about the environment at the lake, the SWP, water safety, and boating safety
- Moonlight Fishing on the Lake sponsored by Friends of Castaic Lake for 150 guests
- Junior Lifeguard Program co-sponsored by LADPR for 550 participants ages 9 to 17 who learned life guarding, first aid, cardiopulmonary resuscitation (CPR), and water safety skills
- nine dates of "Splash Party" sponsored by the County of Los Angeles for 300 participants
- four Night Float Tube Fishing events sponsored by the Friends of Castaic Lake for 75 participants that allowed individuals to fish the Castaic Lagoon until midnight in float tubes and kayaks
- USA Open Water Swim event in June for 200 children aged 18 and under
- C.A.S.T. for Kids fishing event hosted by DWR and LADPR for 75 participants, where 35 disadvantaged children and children with disabilities had the opportunity to learn how to fish with the area's top anglers

The following three runs were held at Castaic Lake during 2018:

- (1) 5K run around the Castaic Dam facility, hosted by a local non-profit, 120 participants

- (2) 5K obstacle race and mud run, hosted by an obstacle race company, 7,000 participants
- (3) two-day obstacle race in December, hosted by another obstacle race company, 10,000 participants

Pyramid Lake

On August 25, DWR and its recreation contractor co-hosted Pyramid Lake's first annual C.A.S.T. for Kids fishing event. Thirty children with special needs were paired with 30 experienced local fishermen and another 31 volunteers for a day of fishing on Pyramid Lake.

Silverwood Lake State Recreation Area

In 2018, California State Parks sponsored the following activities and events at Silverwood Lake State Recreation Area.

Bald eagle barge tours were conducted every Saturday from January through March with approximately 10 to 20 participants per tour.

International Coastal Cleanup Day, to promote a clean watershed and stewardship of California's waterways, had 42 participants. The California Coastal Commission sponsored this event with the Division of Boating and Waterways section of California State Parks.

An Earth Day celebration was enjoyed by 20 participants who assisted with orchard maintenance and trail work. The Mojave River Natural History Association assisted California State Parks with organizing this event.

More than 100 children from the San Bernardino School District participated in three Adopt-A-School programs, which taught children about the history of the park, local fish and wildlife, and California's water supply.

Rangers and volunteers presented eight campfire programs for 800 attendees between Memorial Day and Labor Day weekends. Topics included wildlife issues and Silverwood Lake's relationship with the SWP. Campfire programs were co-sponsored by the Mojave River Natural History Association.

The California State Parks Foundation hosted monthly Park Champions volunteer work days from October through April. Between 10 and 20 volunteers met at the park to conduct service work such as trail maintenance, trail improvements, and litter pick-up.

DWR co-hosted a C.A.S.T. for Kids fishing event at which 28 children with special needs were paired with 21 experienced bass fishermen for a day of fishing on the lake.

Lake Perris State Recreation Area

The Perris Dam Seismic Remediation Project, the first of the three Perris Dam seismic retrofit projects, was officially completed in April 2018. DWR began a controlled refilling of the reservoir to its originally intended water levels that spring. The gradual restoration of normal water levels created new recreation opportunities and restored old but forgotten recreation to the lake:

- Cyclists were again allowed to ride their bicycles across the dam, completing a scenic nine-mile ride along the lakeshore. Joggers, hikers, bird-watchers, and naturalists were also able to enjoy the nine-mile lakeshore trail to take in the abundant wildlife of the area.
- DFW installed fish habitat to enhance fisheries in the area.
- The south-side campground, which had been closed for several years due to the lowered lake levels, reopened and has attracted fishermen, kayakers, and Boy Scout troops to the area.

- Three of the four available boat launch ramps reopened, allowing more availability for boaters to use and enjoy the lake. During low water, only one boat launch ramp was usable.
- An accessible pier was installed, allowing users with disabilities to have enhanced lake access for the first time in several years.
- Because of the increased lake area with higher water levels, waterfowl hunting was allowed for the first time in many years. In addition, California State Parks is working with DFW to open a section of the lake to bowhunters for upland waterfowl hunting as well.

Lake Perris is under consideration as a location for future Olympic events, if the Olympic Games are awarded to Los Angeles. California State Parks will be working with the Olympics committee for upcoming inspections of the Lake Perris State Recreation Area and its facilities.

California State Parks hosted the following activities in 2018:

- 202 campfire programs
- 1,692 hiking tour talks
- 447 Junior Ranger Programs
- 3,436 special events
- 1,129 field trips
- 1,177 off-site events
- 10 community events with 262 participants in March
- one Boy Scout event in June with more than 65 participating Boy Scouts
- one after-school extended learning program event with 33 participants in July
- 20 adult tours with 180 participants in November
- two sessions of the Aquatic Adventure Camp with 75 children attending each session
- a Junior Lifeguard Program, which taught 50 children important lifeguard skills

and prepared them for possible work as a lifeguard (The 2018 program at Lake Perris absorbed the Silverwood Lake Junior Lifeguard Program.)

California State Parks and corporate partners sponsored two music festivals with over 3,000 participants at the first event and approximately 12,000 at the second event. Three stages were set up on the beach for the second event.

Fish Planting

In 2018, DFW planted 477,000 fish into SWP reservoirs (see Table 12-2). This was 18 percent more fish than the 404,400 fish planted in 2017. DWR purchased the trout planted in Pyramid, Castaic, and Silverwood lakes for recreation mitigation under its hydropower license, Federal Energy Regulatory Commission Project No. 2426.

EBRPD purchased and planted additional fish into Lake Del Valle: 20,487 pounds of three-to-six pound rainbow trout from a supplier near Mount Lassen, and 21,250 pounds of channel catfish (*Ictalurus punctatus*). EBRPD charges an additional fishing permit fee to compensate for the cost of these non-State purchases, but the popularity of this supplier's rainbow trout makes Lake Del Valle a popular fishing spot in the San Francisco Bay Area.

DWR continued to purchase Chinook salmon eggs in 2018 for DFW to rear at the Feather River Fish Hatchery for release into Lake Oroville. A total of 127,500 Chinook salmon were released into Lake Oroville for recreation enhancement in 2018.

SWP Deliveries for Recreation

DWR has an agreement with California State Parks to provide onshore recreation water at several SWP facilities in an amount prorated

Table 12-2 Fish Planted by the Department of Fish and Wildlife in 2018 (thousands)¹

| Location and Size | Eagle Lake | | Rainbow Trout | Brook Trout | Rainbow Trout | Chinook Salmon | Steelhead Trout | Brown Trout | Total for Lake |
|--------------------------|----------------------|--------------------|----------------------|--------------------|----------------------|-----------------------|------------------------|--------------------|-----------------------|
| | Rainbow Trout | Brook Trout | | | | | | | |
| Antelope Lake | 11.0 | 4.6 | 17.8 | | | | | | 33.4 |
| Lake Davis | | | 19.4 | | | | | | 19.4 |
| Frenchman Lake | 19.3 | | | | | | | | 19.3 |
| Lake Oroville | | | | | 127.5 | | | | 127.5 |
| Thermalito Afterbay | | | | | | 182.2 | | | 182.2 |
| Lake Del Valle | | | 13.4 | | | | | | 13.4 |
| Los Banos Reservoir | | | 4.7 | | | | | | 4.7 |
| Pyramid Lake | 1.2 | | 6.1 | | | | | | 7.3 |
| Castaic Lake | 8.5 | | 24.1 | | | | | | 32.6 |
| Silverwood Lake | | | 10.0 | | | | 26.2 | | 36.2 |
| Lake Perris | | | 1.0 | | | | | | 1.0 |
| Total | 40.0 | 4.6 | 96.5 | | | 127.5 | 182.2 | 26.2 | 477.0 |

¹ Information provided by the Department of Fish and Wildlife

to the yearly SWP Table A allocation. Per the 35 percent SWP Table A allocation for 2018, maximum diversion amounts under the onshore recreation agreement were allocated at 35 percent, or a total of 2,375 acre-feet (af) as follows: 963 af at San Luis Reservoir; 140 af at Lake Del Valle; 816 af at Castaic Lake and Castaic Lagoon; 438 af at Lake Perris; and 18 af at Bethany Reservoir. Actual deliveries under the agreement totaled 220 af as follows: 6 af at San Luis Reservoir; 100 af at Lake Del Valle; 19 af at Castaic Lake and Castaic Lagoon; 95 af at Lake Perris; 0 af at Bethany Reservoir. Additional SWP recreation deliveries included 60 af at Silverwood Lake and 51 af at Pyramid Lake.

prior to 2018. The increase in 2018 included \$21,119,604 in joint costs and \$7,396,891 in specific costs. These costs are budgeted by DWR from funds available for financing project construction costs. Recreation and enhancement costs not reported in this table are budgeted by several State departments and are financed by appropriations from a variety of funds.

Recreation Financing

Capital Cost Allocations

Table 12-3 shows capital costs allocated to recreation and fish and wildlife enhancement and overall costs of lands acquired for recreation development through 2018. Total capital costs increased by \$29,751,340 over those reported in Bulletin 132-18 due to an increase of \$28,516,495 in 2018, and an upward adjustment of \$1,234,845 in years

Table 12-3 Recreation and Enhancement Capital Costs of the State Water Project (in dollars)

| Facility | Joint Costs Allocated to Recreation and Enhancement | | | Specific Costs Allocated to Recreation and Enhancement | | | Total |
|--|--|-------------------|--------------------|---|------------------|-------------------|--------------------|
| | 1952–2017 Updated | 2018 | Subtotal | 1952–2017 Updated | 2018 | Subtotal | |
| Frenchman Dam and Lake (78.5%) ^a | | | | | | | |
| California Water Resources Development Bond Fund | 102,997 | 0 | 102,997 | 3,379 | 0 | 3,379 | 106,376 |
| All Other Funds | 2,728,136 | 7,174 | 2,735,310 | 49,950 | 0 | 49,950 | 2,785,260 |
| Antelope Dam and Lake (100%) ^a | | | | | | | |
| California Water Resources Development Bond Fund | 1,033,261 | 0 | 1,033,261 | 3,167 | 0 | 3,167 | 1,036,428 |
| All Other Funds | 4,635,151 | 7,970 | 4,643,121 | 201,137 | 0 | 201,137 | 4,844,258 |
| Grizzly Valley Dam and Lake Davis (99.0%) ^a | | | | | | | |
| California Water Resources Development Bond Fund | 4,003,092 | 0 | 4,003,092 | 204,475 | 0 | 204,475 | 4,207,567 |
| All Other Funds | 4,194,902 | 0 | 4,194,902 | 554,246 | 0 | 554,246 | 4,749,148 |
| Other Feather River Projects (100%) ^a | | | | | | | |
| California Water Resources Development Bond Fund | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| All Other Funds | 746,153 | 0 | 746,153 | 9,921 | 0 | 9,921 | 756,074 |
| Delta Facilities (3.4%) ^a | | | | | | | |
| California Water Resources Development Bond Fund | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| All Other Funds | 16,013,053 | 1,447,001 | 17,460,054 | 0 | 0 | 0 | 17,460,054 |
| San Luis Dam and Reservoir, O'Neill Forebay, and Los Banos Reservoir (3.4%) ^a | | | | | | | |
| California Water Resources Development Bond Fund | 988,910 | 0 | 988,910 | 395,284 | 0 | 395,284 | 1,384,194 |
| All Other Funds | 5,277,571 | 651,277 | 5,928,848 | 867,243 | 0 | 867,243 | 6,796,091 |
| California Aqueduct, Delta to Dos Amigos Pumping Plant (3.4%) ^a | | | | | | | |
| California Water Resources Development Bond Fund | 4,467,667 | 0 | 4,467,667 | 422,681 | 0 | 422,681 | 4,890,348 |
| All Other Funds | 6,805,225 | 713,359 | 7,518,584 | -91,879 | 0 | -91,879 | 7,426,705 |
| Oroville Division (2.9%) ^a | | | | | | | |
| California Water Resources Development Bond Fund | 5,725,216 | 0 | 5,725,216 | 7,809,509 | 0 | 7,809,509 | 13,534,725 |
| All Other Funds | 21,298,477 | 13,472,627 | 34,771,104 | 8,180,299 | 7,109,738 | 15,290,037 | 50,061,141 |
| Del Valle Dam and Lake Del Valle (48.0%) ^a | | | | | | | |
| California Water Resources Development Bond Fund | 10,546,762 | 0 | 10,546,762 | 519,425 | 0 | 519,425 | 11,066,187 |
| All Other Funds | 4,402,355 | 9,533 | 4,411,888 | -32,202 | 0 | -32,202 | 4,379,686 |
| California Aqueduct, Dos Amigos Pumping Plant to Termini (0.4%–32.3%) ^{a,b} | | | | | | | |
| California Water Resources Development Bond Fund | 48,382,162 | 0 | 48,382,162 | 3,880,547 | 0 | 3,880,547 | 52,262,709 |
| All Other Funds | 135,873,266 | 4,810,663 | 140,683,929 | 7,275,620 | 287,153 | 7,562,773 | 148,246,702 |
| Total | 277,224,356 | 21,119,604 | 298,343,960 | 30,252,811 | 7,396,891 | 37,649,702 | 335,993,662 |

^a Percentages are the share of joint costs.^b Recreation costs for Dos Amigos Pumping Plant to Termini include \$2,905,649 for Castaic Dam and Lake, \$795,130 for Cedar Springs Dam and Silverwood Lake, \$6,844,482 for Perris Dam and Lake Perris, and \$898,059 for the California Aqueduct.



Chapter 13

Financial Analysis

Deer wander onto the Oroville Dam emergency spillway splashpad constructed between the secant pile wall and the spillway weir during Phase 2 of the recovery effort.

Significant Events in 2018

On October 18, the Department of Water Resources (DWR) delivered \$215.295 million of Water System Revenue Bonds, Series AZ. The proceeds were presold on October 10 to refinance commercial paper, refinance previously sold bonds, and pay bond financing costs.

Information for this chapter was provided by the State Water Project Analysis Office in conjunction with the Division of Fiscal Services.

This chapter presents both a summary and a detailed explanation of the State Water Project's (SWP) current financial analysis, capital costs and requirements, revenues and expenses, and bond activities for years 2018 through 2028.

The Department of Water Resources (DWR) performs a financial analysis annually to ensure the SWP financing program will have sufficient funds to meet construction obligations; project operations, maintenance, power, and replacement (OMP&R) costs; and debt service payments for bonds expended for construction. The results of the current financial analysis, dated December 31, 2018, are presented in Tables 13-1 and 13-2, located at the end of this chapter. (Please note that, in some instances, the tables and text figures in this chapter may not sum as expected due to rounding.)

Future contingencies may change the financial analysis, some of which include

- alterations in schedules of currently planned construction for future facilities;
- changes in economic conditions, including changes in interest rates and in SWP water contractor Table A amounts due to changes in amounts of water needed, conserved, or reclaimed;
- development of additional sources of water not foreseen at this time;
- deviations from the assumptions regarding actual rates of price escalations for future construction from those currently assumed for cost estimates;
- increases in capital costs related to additional conservation facilities; and
- outcome of lawsuits now pending before the courts.

Capital Requirements and Financing

In conducting the current financial analysis, DWR projected that future construction

costs through the year 2028, including reimbursement of \$609 million interim financing for prior expenditures, will total \$2.9 billion. Special capital requirements for revenue bond financing of these construction costs are projected at \$178 million for a total capital requirement of \$3.1 billion. This projection includes construction and financing costs for the following significant SWP projects planned for completion by 2028:

- Perris Dam remediation
- Thermalito Diversion Dam Powerplant restoration and modernization
- Phase II of the East Branch Extension
- Hyatt Powerplant refurbishments
- Gianelli Pumping-Generating Plant refurbishments
- Edmonston Pumping Plant refurbishments
- SWP relay replacement program
- SWP Sacramento-San Joaquin Delta (Delta) compliance program
- SWP fire systems modernization
- Sherman and Twitchell islands fish screens
- Oroville Dam Spillway response, recovery, and restoration
- Oroville Dam safety comprehensive needs assessment

Most of these capital requirements will be financed from the projected sale of \$3 billion of revenue bonds. No direct payments from SWP water contractors are projected. The remaining \$45 million of the total capital requirement of \$3.1 billion will be financed from capital resources revenues and the transfer of revenues not needed for operation costs or debt service.

The analysis of capital requirements and financing presented in Table 13-1 does not include the costs and financing of all facilities needed to develop the remaining yield necessary to meet the total 4.2 million acre-foot contractual commitment to SWP water supply contractors. Table 13-1 also excludes the costs of associated facilities financed and constructed by local interests or State agencies other than DWR. Those facilities are essential for realizing full benefits from the SWP and include onshore recreational developments at SWP facilities and local distribution facilities.

The allocation of capital expenditures for various SWP purposes is detailed in Table 13-3.

Capital Requirements

Lines 1 through 20 in Table 13-1 show actual and projected SWP capital requirements through 2028. Estimates of future capital expenditures include allowances for construction cost escalation of 4.2 percent per year from 2019 through 2028. Right-of-way costs are escalated at 4.0 percent per year from 2019 through 2028. Capital expenditures for the SWP also include requirements other than those for construction, such as disbursements made as part of the Davis-Grunsky Act Program (Line 16) and special capital requirements under revenue bond financing (Line 17). DWR will decide whether to construct facilities only after examining alternatives and completing environmental documentation and other review processes.

Line 1, Initial Project Facilities, includes only those facilities completed in the initial construction program, which concluded December 31, 1973 (see Bulletin 132-74, Chapter 2). Additional costs after 1973, and estimated costs of remaining work on the initial SWP facilities, are not included.

Line 2, North Bay Aqueduct, consists of the costs for Phase II, improvements, and the Alternate Intake Project.

Operational in May 1988, Phase II connected with the Phase I facilities, which were completed in 1968 (Phase I costs are included in the initial project facilities discussed in Line 1). Phase II included costs for pipelines, pumping plants, and a small reservoir necessary to divert water from the western Delta to Napa and Solano counties for urban use. The improvements consisted of replacing the existing tank with two 5-million-gallon tanks. Construction of the new tanks began in 2007 and was completed in 2010.

The Alternate Intake Project, currently in the design phase, includes a new point of diversion along the Sacramento River or its tributaries, a new pumping plant, an in-line storage tank, and an underground pipeline connection to the existing North Bay Aqueduct. Completion of the environmental documentation, design, and construction has been postponed. In 2018, the project was suspended at the request of the Solano County Water Agency.

Line 3, Delta and Suisun Marsh Facilities, shows historical costs that include planning for general Delta facilities and the previously planned peripheral canal and overland water delivery facilities for the western Delta. Also included are historical planning costs for Suisun Marsh as well as construction costs for the Suisun Marsh Salinity Control Gates and an access road. The projected amounts include projected planning costs plus projected costs for fish screens at Sherman and Twitchell islands.

Line 4, Final Four Units at Banks Pumping Plant, includes costs of the final four 1,067 cubic feet per second units, which became operational in spring 1992.

Table 13-3 Allocation of Capital Expenditures (in thousands of dollars)

| Facilities and Construction Divisions | Expenditures Incurred Through 2018 | Future Expenditures | Total | Preliminary Allocation Among Project Purposes | | | |
|--|------------------------------------|---------------------|-------------------|---|----------------------------|--|--------------------|
| | | | | Water Supply and Power Generation | Flood Control ¹ | Recreation and Fish and Wildlife Enhancement | Other ² |
| Project Construction Expenditures | | | | | | | |
| Upper Feather Division | 20,048 | 19,253 | 39,300 | 3,342 | 0 | 35,958 | 0 |
| Oroville Division (excludes Small Hydro) | 1,295,152 | 460,062 | 1,755,214 | 1,607,497 | 71,761 | 75,956 | 0 |
| Delta Facilities Division | 544,156 | 520,028 | 1,064,184 | 1,000,728 | 0 | 63,456 | 0 |
| North Bay Aqueduct | 121,000 | 5,938 | 126,938 | 126,938 | 0 | 0 | 0 |
| South Bay Aqueduct (excludes Enlargement) | 203,321 | 12,017 | 215,339 | 183,257 | 11,989 | 20,093 | 0 |
| California Aqueduct | | | | | | | |
| North San Joaquin Division | 459,953 | 88,263 | 548,216 | 532,905 | 0 | 15,311 | 0 |
| San Luis Division | 553,051 | 166,385 | 719,436 | 703,581 | 0 | 15,855 | 0 |
| South San Joaquin Division | 358,377 | 148,559 | 506,937 | 488,529 | 0 | 18,407 | 0 |
| Tehachapi Division | 394,281 | 112,914 | 507,196 | 485,911 | 0 | 21,285 | 0 |
| Mojave Division (excludes Small Hydro) | 385,071 | 87,312 | 472,383 | 430,792 | 0 | 41,592 | 0 |
| Santa Ana Division | 460,873 | 202,066 | 662,939 | 543,406 | 0 | 119,533 | 0 |
| West Branch | 578,315 | 267,234 | 845,549 | 795,160 | 0 | 50,389 | 0 |
| Coastal Branch | 505,944 | 46,423 | 552,367 | 552,367 | 0 | 0 | 0 |
| <i>Subtotal, California Aqueduct</i> | <i>3,695,865</i> | <i>1,119,157</i> | <i>4,815,022</i> | <i>4,532,652</i> | <i>0</i> | <i>282,371</i> | <i>0</i> |
| Other Project Facilities | | | | | | | |
| Small Hydroelectric Power Generating Facilities | 101,128 | 18,521 | 119,649 | 119,649 | 0 | 0 | 0 |
| Off-Aqueduct Power Generating Facilities | 491,574 | 0 | 491,574 | 491,574 | 0 | 0 | 0 |
| South Bay Aqueduct Enlargement | 207,801 | 1,890 | 209,691 | 209,691 | 0 | 0 | 0 |
| East Branch Enlargement | 462,031 | 0 | 462,031 | 462,031 | 0 | 0 | 0 |
| East Branch Extension | 420,712 | 327 | 421,039 | 421,039 | 0 | 0 | 0 |
| Coastal Power Allocation | 30,708 | 0 | 30,708 | 30,708 | 0 | 0 | 0 |
| Agricultural Drainage Facilities | 90,086 | 17,660 | 107,746 | 0 | 0 | 0 | 107,746 |
| Planning and Pre-operations | 84,635 | 32,720 | 117,355 | 117,355 | 0 | 0 | 0 |
| Unassigned/Miscellaneous | 13,408 | 72,246 | 85,654 | 0 | 0 | 0 | 85,654 |
| <i>Subtotal, Project Construction Expenditures</i> | <i>7,781,626</i> | <i>2,279,819</i> | <i>10,061,445</i> | <i>9,306,461</i> | <i>83,750</i> | <i>477,834</i> | <i>193,400</i> |
| Other Capital Requirements | | | | | | | |
| Davis-Grunsky Act Program | 130,000 | 0 | 130,000 | 0 | 0 | 0 | 130,000 |
| Total Capital Expenditures | 7,911,626 | 2,279,819 | 10,191,445 | 9,306,461 | 83,750 | 477,834 | 323,400 |

¹ Reflects DWR's allocation to this purpose, irrespective of federal payments.² Includes costs currently unassigned to purpose, planning costs of deleted features of project facilities, initial costs of inventoried items, and costs assigned to the Davis-Grunsky Act Program.

Line 5, Coastal Branch Aqueduct, includes all costs for the planning, design, and construction of Phase II of the Coastal Branch of the California Aqueduct. Phase II construction began in October 1993 and was completed in 1997. Water deliveries from Phase II facilities began in July 1997.

Line 6, West Branch Aqueduct, shows costs for all facilities on the West Branch except Warne Powerplant. Those costs are included in Line 11.

Line 7, East Branch Enlargement, includes expenditures for Phases I and II of the East Branch Enlargement. Phase I included the enlargement share of power plant costs at Mojave Siphon and Devil Canyon. (The remaining power plant costs are included in Line 11.) East Branch Enlargement costs for Phase I, by facility, are presented in Table 13-4. Costs for Alamo Powerplant consist of expenditures for Unit 1 facilities allocated to enlargement.

Table 13-4 East Branch Enlargement Capital Costs by Facility (in millions of dollars)

| Facility | Amount |
|---|--------------|
| Aqueduct and Siphons | 128.1 |
| Pearblossom Pumping Plant | 70.1 |
| Alamo Powerplant | 5.0 |
| Mojave Siphon Powerplant | 47.3 |
| Devil Canyon Powerplant and Second Afterbay | 202.9 |
| Total | 453.4 |

Work on the draft environmental impact report, mapping, and conceptual design for Phase II of the enlargement began in March 2007 and ceased in 2013 at the request of the participating contractors. Project costs include raising the canal embankment and concrete lining, constructing additional siphon barrels, adding bays to check structures, constructing Unit 2 at Alamo Powerplant, and adding two pump/motor units and a discharge line

at Pearblossom Pumping Plant. Phase II construction has been postponed indefinitely.

All costs in Line 7 are allocated to and repaid by the seven Southern California contractors participating in the East Branch Enlargement.

Line 8, East Branch Improvements, shows all aqueduct costs on the East Branch not allocated to the enlargement project. Those costs include improvements constructed concurrently with the enlargement work, the reconstruction of the San Bernardino Tunnel Intake, and the construction of the Tehachapi East Afterbay. Costs for power plant construction at Alamo, Mojave Siphon, and Devil Canyon are not included in this line.

Line 9, East Branch Extension, shows expenditures for Phases I and II of the extension of the East Branch of the California Aqueduct. The East Branch Extension extends the California Aqueduct east from the Devil Canyon Powerplant to a terminus at Noble Creek near Beaumont in Riverside County. The extension provides water service to the San Gorgonio Pass Water Agency and the San Bernardino Valley Municipal Water District. Construction of Phase I began in February 1999 and was completed in 2003. Phase I improvements included enlargement of the Crafton Hills Reservoir and construction of the Yucaipa Connector Pipeline. Construction of this phase was completed in 2014. Phase II will increase the pumping capacity to 100 percent of design capacity. Construction of Phase II began in 2012 and is scheduled to be completed in 2019. All costs in Line 9 will be allocated to and repaid by the two participating contractors.

Line 10, South Bay Aqueduct Improvements and Enlargement, shows expenditures for providing additional capacity required to meet increases in water demands for the service area of Alameda County Flood Control and Water Conservation District, Zone 7, and increasing the existing capacity

of the South Bay Aqueduct (SBA) to its original design capacity. Construction began in 2006, and overall project work was completed in 2016.

Line 11, Power Generation and Transmission Facilities, does not include the East Branch Enlargement share of costs for Alamo, Mojave Siphon, and Devil Canyon power plants shown in Line 7 of Table 13-1. The capital costs for facilities included in Line 11 are shown in Table 13-5.

Table 13-5 Estimated Capital Costs for Power Generation and Transmission Facilities (in millions of dollars)

| Power Plants | Amount |
|---------------------------|--------------|
| Reid Gardner, Unit 4 | 314.2 |
| Bottle Rock | 120.9 |
| South Geysers | 49.6 |
| Devil Canyon | 36.8 |
| Warne | 84.5 |
| Alamo | 44.9 |
| Mojave Siphon | 42.1 |
| Hyatt | 46.2 |
| Thermalito | 135.4 |
| <i>Subtotal</i> | 874.5 |
| Transmission Lines | |
| Midway–Wheeler Ridge | 10.7 |
| Geysers–Lakeville | 6.9 |
| <i>Subtotal</i> | 17.6 |
| Total | 892.1 |

Line 12, Additional Conservation Facilities, shows projected costs to plan and study additional conservation facilities. Specific planning activities and projected spending amounts for 2019 through 2028 are shown in Table 13-6. Expenditures for these items are being reviewed. Construction costs of additional conservation facilities are not included in the financial analysis.

Line 12 does not include the Bay Delta Conservation Plan/California WaterFix costs. DWR's share of the Bay Delta Conservation

Plan/California WaterFix expenditures for preliminary planning and environmental impact report preparation are currently financed by participating contractors.

Line 13, Agricultural Drainage Facilities, includes projected costs of the Agricultural Drainage Program. The activities in this program are monitoring, evaluating, reducing, and treating drainage, as well as investigating treatment and reuse of drainage water.

DWR assumes that future costs of the drainage program will be financed by revenue transfers (Line 37).

Line 14, Other Costs, includes items such as general design and construction costs, costs of completing operation and maintenance facilities, and costs of other completion activities for the initial facilities of the California Aqueduct. Portions of those costs ultimately will be allocated to California Aqueduct units described in the preceding paragraphs.

Line 15, Total Project Construction Expenditures, is the total of Lines 1 through 14.

Line 16, Davis–Grunsky Act Program Costs, shows costs of the Davis–Grunsky Act Program, a financial assistance program. Authorized in 1960 as part of the Burns–Porter Act, the Davis–Grunsky Act provides construction loans for local domestic water projects and agricultural water supply. It also provides grants

Table 13-6 Estimated Future Costs for Planning Additional Conservation Facilities (in millions of dollars)

| Activity | Amount |
|-------------------------|-------------|
| SWP Future Water Supply | 32.7 |
| Other Planning Costs | 0.0 |
| Total | 32.7 |

for recreation and fish and wildlife enhancement. Additionally, loans and grants may be given to rehabilitate dams and reservoirs.

DWR's ongoing administration of Davis-Grunsky Act program loans and grants includes management and oversight of recreation projects and contracts. Administration costs are recovered from revenues generated by repayment of Davis-Grunsky Act loans. Recreation grant contracts are amended to reflect modification of DWR's fee oversight functions and actual construction of recreation facilities.

The Davis-Grunsky Act requires participating State agencies to operate and maintain the recreation projects, while DWR inspects the recreation facilities, monitors the recreation

contracts, and maintains a list of the recreation projects.

As of December 31, 2018, DWR had disbursed \$130 million (including \$8.5 million for administration) in grants and loans to local agencies throughout the state.

Line 17, Special Capital Requirements Under Revenue Bond Financing, presents special capital requirements at the time revenue bonds are sold. The financial analysis assumes that proceeds from any future revenue bonds will be used to pay for bond discounts, bond issuance costs, and debt service reserve requirements. Information about the application of proceeds to these special requirements for actual and assumed revenue bond sales is presented in Table 13-7.

Table 13-7 Application of Revenue Bond Proceeds (in millions of dollars)

| Bond Series¹ | Construction Expenditures | Other Capital Requirements | | | | | Total Principal Amount of Bonds |
|------------------------------------|----------------------------------|-----------------------------------|----------------------|-----------------------------|---|-----------------|--|
| | | Reimbursement of General Fund | Capitalized Interest | Capitalized Operating Costs | Bond Financing and Refunding Costs ² | <i>Subtotal</i> | |
| Oroville | 218.0 | 2.6 | 19.9 | 1.5 | 3.0 | 27.0 | 245.0 |
| Devil Canyon–Castaic | 126.4 | 0.0 | 10.0 | 0.7 | 2.1 | 12.8 | 139.2 |
| Pyramid Series A | 74.0 | 0.0 | 19.2 | 1.0 | 1.6 | 21.8 | 95.8 |
| Reid Gardner Series B | 146.1 | 0.0 | 41.9 | 0.0 | 12.0 | 53.9 | 200.0 |
| Reid Gardner Series C | 91.1 | 0.0 | 17.9 | 7.9 | 8.1 | 33.9 | 125.0 |
| Small Hydro–South Geysers Series D | 49.6 | 0.0 | 19.9 | 0.0 | 5.5 | 25.4 | 75.0 |
| Bottle Rock Series E | 96.9 | 0.0 | 22.0 | 3.7 | 2.4 | 28.1 | 125.0 |
| Alamo–South Geysers Series F | 59.1 | 0.0 | 14.2 | 0.0 | 1.7 | 15.9 | 75.0 |
| Reid Gardner Series G | 1.6 | 0.0 | 0.0 | 0.0 | 237.9 | 237.9 | 239.5 |
| Power Facilities Series H | 22.2 | 0.0 | 0.0 | 0.0 | 184.5 | 184.5 | 206.7 |
| East Branch Enlargement Series A | 108.3 | 0.0 | 12.6 | 0.0 | 11.1 | 23.7 | 132.0 |
| Water System Facilities Series B | 97.4 | 0.0 | 0.0 | 0.0 | 2.6 | 2.6 | 100.0 |
| Water System Facilities Series C | 0.6 | 0.0 | 0.0 | 0.0 | 8.4 | 8.4 | 9.0 |
| Water System Facilities Series D | 95.9 | 0.0 | 2.9 | 0.0 | 1.2 | 4.1 | 100.0 |
| Water System Facilities Series E | 0.4 | 0.0 | 0.0 | 0.0 | 8.6 | 8.6 | 9.0 |
| Water System Facilities Series F | 0.0 | 0.0 | 0.0 | 0.0 | 160.0 | 160.0 | 160.0 |
| Water System Facilities Series G | 86.8 | 0.0 | 4.6 | 0.0 | 8.6 | 13.2 | 100.0 |
| Water System Facilities Series H | 85.5 | 0.0 | 5.7 | 0.0 | 8.8 | 14.5 | 100.0 |
| Water System Facilities Series I | 158.9 | 0.0 | 5.8 | 0.0 | 15.3 | 21.1 | 180.0 |
| Water System Facilities Series J | 0.0 | 0.0 | 0.0 | 0.0 | 649.8 | 649.8 | 649.8 |
| Water System Facilities Series K | 88.6 | 0.0 | 3.1 | 0.0 | 8.3 | 11.4 | 100.0 |
| Water System Facilities Series L | 0.0 | 0.0 | 0.0 | 0.0 | 537.8 | 537.8 | 537.8 |
| Water System Facilities Series M | 166.3 | 0.0 | 9.9 | 0.0 | 13.8 | 23.7 | 190.0 |
| Water System Facilities Series N | 137.4 | 0.0 | 6.0 | 0.0 | 8.6 | 14.6 | 152.0 |
| Water System Facilities Series O | 156.5 | 0.0 | 8.4 | 0.0 | 170.1 | 178.5 | 335.0 |

Table 13-7 Application of Revenue Bond Proceeds (in millions of dollars)

| Bond Series¹ | Construction Expenditures | Other Capital Requirements | | | | | Total Principal Amount of Bonds |
|--------------------------------------|----------------------------------|-----------------------------------|----------------------|-----------------------------|---|----------------|--|
| | | Reimbursement of General Fund | Capitalized Interest | Capitalized Operating Costs | Bond Financing and Refunding Costs ² | Subtotal | |
| Water System Facilities Series P | 141.6 | 0.0 | 5.2 | 0.0 | 13.2 | 18.4 | 160.0 |
| Water System Facilities Series Q | 135.0 | 0.0 | 8.0 | 0.0 | 123.6 | 131.6 | 266.6 |
| Water System Facilities Series R | 0.0 | 0.0 | 0.0 | 0.0 | 20.7 | 20.7 | 20.7 |
| Water System Facilities Series S | 78.2 | 0.0 | 5.8 | 0.0 | 116.2 | 122.0 | 200.2 |
| Water System Facilities Series T | 0.0 | 0.0 | 0.0 | 0.0 | 135.7 | 135.7 | 135.7 |
| Water System Facilities Series U | 98.7 | 0.0 | 5.3 | 0.0 | 103.2 | 108.5 | 207.2 |
| Water System Facilities Series V | 0.0 | 0.0 | 0.0 | 0.0 | 20.6 | 20.6 | 20.6 |
| Water System Facilities Series W | 41.0 | 0.0 | 1.3 | 0.0 | 218.7 | 220.0 | 261.0 |
| Water System Facilities Series X | 0.0 | 0.0 | 0.0 | 0.0 | 160.2 | 160.2 | 160.2 |
| Water System Facilities Series Y | 0.0 | 0.0 | 0.0 | 0.0 | 329.9 | 329.9 | 329.9 |
| Water System Facilities Series Z | 0.0 | 0.0 | 0.0 | 0.0 | 170.7 | 170.7 | 170.7 |
| Water System Facilities Series AA | 0.0 | 0.0 | 0.0 | 0.0 | 108.7 | 108.7 | 108.7 |
| Water System Facilities Series AB | 92.2 | 0.0 | 3.9 | 0.0 | 93.6 | 97.5 | 189.7 |
| Water System Facilities Series AC | 13.7 | 0.0 | 0.6 | 0.0 | 257.7 | 258.3 | 272.0 |
| Water System Facilities Series AD | 12.4 | 0.0 | 0.9 | 0.0 | 99.1 | 100.0 | 112.4 |
| Water System Facilities Series AE | 383.9 | 0.0 | 9.5 | 0.0 | 239.5 | 249.0 | 632.9 |
| Water System Facilities Series AF | 33.4 | 0.0 | 1.3 | 0.0 | 253.1 | 254.4 | 287.7 |
| Water System Facilities Series AG | 9.9 | 0.0 | 0.4 | 0.0 | 158.8 | 159.2 | 169.1 |
| Water System Facilities Series AH | 71.7 | 0.0 | 3.6 | 0.0 | 22.3 | 26.0 | 97.7 |
| Water System Facilities Series AI | 0.0 | 0.0 | 0.0 | 0.0 | 92.3 | 92.3 | 92.3 |
| Water System Facilities Series AJ | 69.3 | 0.0 | 3.7 | 0.0 | 143.9 | 147.6 | 216.9 |
| Water System Facilities Series AK | 32.0 | 0.0 | 0.9 | 0.0 | 3.4 | 4.3 | 36.3 |
| Water System Facilities Series AL | 0.0 | 0.0 | 0.0 | 0.0 | 105.9 | 105.9 | 105.9 |
| Water System Facilities Series AM | 0.0 | 0.0 | 0.0 | 0.0 | 184.0 | 184.0 | 184.0 |
| Water System Facilities Series AN | 44.8 | 0.0 | 0.3 | 0.0 | 4.4 | 4.7 | 49.5 |
| Water System Facilities Series AO | 0.0 | 0.0 | 0.0 | 0.0 | 317.5 | 317.5 | 317.5 |
| Water System Facilities Series AP | 47.7 | 0.0 | 1.2 | 0.0 | (3.5) | (2.4) | 45.3 |
| Water System Facilities Series AQ | 122.6 | 0.0 | 7.2 | 0.0 | (9.6) | (2.4) | 120.2 |
| Water System Facilities Series AR | 168.1 | 0.0 | 5.4 | 0.0 | (12.1) | (6.7) | 161.4 |
| Water System Facilities Series AS | 0.0 | 0.0 | 0.0 | 0.0 | 645.8 | 645.8 | 645.8 |
| Water System Facilities Series AT | 139.5 | 0.0 | 5.9 | 0.0 | 3.9 | 9.8 | 149.2 |
| Water System Facilities Series AU | 104.6 | 0.0 | 3.4 | 0.0 | 1.3 | 4.7 | 109.3 |
| Water System Facilities Series AV | 120.9 | 0.0 | 7.3 | 0.0 | (21.7) | (14.4) | 106.5 |
| Water System Facilities Series AW | 363.0 | 0.0 | 29.5 | 0.0 | 35.7 | 65.1 | 428.1 |
| Water System Facilities Series AX | 0.0 | 0.0 | 0.0 | 0.0 | 350.7 | 350.7 | 350.7 |
| Water System Facilities Series AY | 0.0 | 0.0 | 0.0 | 0.0 | 140.8 | 140.8 | 140.8 |
| Water System Facilities Series AZ | 129.7 | 0.0 | 6.6 | 0.0 | 79.0 | 85.6 | 215.3 |
| Subtotal | 4,521.5 | 2.6 | 341.2 | 14.8 | 6,778.9 | 7,137.5 | 11,659.0^a |
| Future East Branch Enlargement Bonds | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Future East Branch Extension Bonds | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |
| Future SBA Enlargement Bonds | 1.9 | 0.0 | 0.1 | 0.0 | 0.1 | 0.2 | 2.0 |
| Future Water System Facilities Bonds | 2,841.4 | 0.0 | 78.3 | 0.0 | 99.7 | 178.0 | 3,019.4 |
| Total | 7,365.1 | 2.6 | 419.6 | 14.8 | 6,878.7 | 7,315.7 | 14,680.8 |

¹ Actual bond issue for all except future East Branch Enlargement, future East Branch Extension, future South Bay Aqueduct Improvements and Enlargement, and future Water System Facilities bonds.

² Bond financing and refunding costs include funds applied to debt service reserve requirements.

^a Includes \$6,683.7 million of refunded principal, leaving a net principal obligation of \$4,975.3 million.

Line 18, Total Capital Requirements, is the total of Lines 15, 16, and 17.

Line 19, Power Facilities Capital Requirements, shows the total capital requirements for power facilities included in Line 18.

Line 20, Water Facilities Capital Requirements, shows the total capital requirements for water facilities included in Line 18.

Capital Financing

The SWP was constructed using three general types of financing: Burns-Porter Act, revenue bonds, and capital resources. Lines 21 through 37 of Table 13-1 present specific information about these financing sources.

Burns-Porter Act

Burns-Porter Act financing is derived from the sale of California Water Resources Development Bonds (general obligation bonds) and State tideland oil revenues deposited in the California Water Fund as authorized by the Burns-Porter Act (California Water Code Sections 12930–12944), approved by voters in November 1960. The Burns-Porter Act authorized an issuance of \$1.75 billion of general obligation State bonds, which are repaid by revenues received according to the water supply contracts. Of that authorization, \$130 million was reserved specifically for the Davis-Grunsky Act Program.

Proceeds from the sale of general obligation bonds were deposited in the California Water Resources Development Bond Fund—Bond Proceeds Account, from which monies were expended only for the construction of SWP facilities and for the Davis-Grunsky Act Program. Approximately 21 percent of the expenditures through 2018 for construction and the Davis-Grunsky Act Program were financed with general obligation bonds.

Monies deposited in the California Water Fund were appropriated for purposes outlined in the Burns-Porter Act. Such deposits were derived from a portion of the State tideland oil revenues, in accordance with a continuing authorization. The California Water Fund was used to finance \$508 million, or approximately 6 percent, of the construction expenditures through 2018.

Revenue Bonds

Revenue bond financing is derived from the sale of revenue bonds as authorized by the Central Valley Project Act (California Water Code Sections 11100–11925). DWR's authority to issue revenue bonds was confirmed by a decision of the California Supreme Court in 1963 (*Warne v. Harkness*, 60 Cal. 2d 579).

Proceeds from the sale of revenue bonds are deposited in the Central Valley Water Project Construction Fund, from which money is expended only for purposes specified in the resolution authorizing each bond sale. Those purposes, in addition to paying construction, planning, and right-of-way costs, may include funding the Debt Service Reserve Account, paying interest on bonds, and paying water system operating expenses during a specified period.

As of December 31, 2018, DWR had sold \$11.7 billion of revenue bonds. That amount includes \$6.7 billion of refunded bonds, leaving a total principal obligation of \$5 billion.

Capital Resources

Capital resources financing is derived from payments and appropriations (including a portion of the State tideland oil revenues) authorized by a variety of special contracts, cost-sharing agreements, and legislative actions concerning the SWP, plus accrued interest on these funds. Capital resources revenues are deposited in the Central Valley Water Project Construction Fund and

may be expended for interest on general obligation bonds and costs of constructing SWP facilities.

According to DWR's financial management policy, the capital resources revenues are used first to cover any general obligation bond debt service that exceeds available revenues.

Capital Financing Sources

Capital financing sources include power revenue bonds, East Branch Enlargement bonds, East Branch Extension bonds, SBA Enlargement bonds, water system facilities bonds, initial project facilities bonds, bond proceeds from the Davis-Grunsky Act Program, California Water Fund monies, and capital resources revenues.

Line 21, Power Facilities Revenue Bonds through Series H, includes the proceeds applied from power revenue bonds for Oroville, Devil Canyon, Castaic, Warne, Reid Gardner, Bottle Rock, Alamo, South Geysers, and small hydro projects.

No future power revenue bond sales are projected for this financial analysis.

Line 22, East Branch Enlargement, Current Bonds, shows that \$483 million of Water System Revenue Bond proceeds has been applied to the East Branch Enlargement project through December 31, 2018. Of this total, \$425 million was used for construction expenditures and \$58 million was used for bond discounts, interest costs, and debt service reserve requirements.

Line 23, East Branch Enlargement, Future Bonds, shows no projected bond sales for this financial analysis.

Line 24, East Branch Extension, Current Bonds, shows that \$415 million of Water System Revenue Bond proceeds has been spent through December 31, 2018.

Line 25, East Branch Extension, Future Bonds, shows DWR's estimate of \$0.4 million of additional bonds required to complete construction of the East Branch Extension and to pay for bond discounts, capitalized interest, and debt service reserve requirements.

Line 26, South Bay Aqueduct Enlargement, Current Bonds, shows that \$225 million of Water System Revenue Bond proceeds had been spent through December 31, 2018.

Line 27, South Bay Aqueduct Enlargement, Future Bonds, shows DWR's estimate of \$2 million of additional bonds required to complete construction of the SBA Enlargement and to pay for bond discounts, capitalized interest, and debt service reserve requirements.

Line 28, Water System Facilities, Current Bonds, shows that through December 31, 2018, \$2.8 billion of proceeds from Water System Revenue Bonds, Series A through Series AZ, was applied to SWP projects other than the East Branch Enlargement, the East Branch Extension, and the SBA Enlargement. Of this total, \$2.6 billion was used to pay for construction expenditures and \$0.2 billion was used to pay for bond discounts, capitalized interest, and debt service reserve requirements.

Line 29, Water System Facilities, Future Bonds, shows that \$3 billion of future water revenue bonds is needed to provide \$2.8 billion for construction of SWP water system facilities and \$0.2 billion for bond discounts, interest costs, and debt service reserve requirements.

Line 30, Subtotal, Water System Revenue Bonds, is the total of Lines 22 through 29.

Line 31, Initial Project Facilities Bond Proceeds, shows the amount of general obligation bonds sold to provide financing costs for initial SWP facilities and for costs of planning certain additional conservation facilities.

Financing initial facilities from general obligation bonds was completed in mid-1972 and totaled \$1.444 billion: \$1.750 billion Burns-Porter Act authorization less \$130 million reserved for the Davis-Grunsky Act Program and \$176 million “offset” for additional conservation facilities. (The Burns-Porter Act provides that to the extent California Water Fund monies are expended, an equal amount of general obligation bonds are reserved [offset] for financing the construction of additional conservation facilities in certain watersheds.)

In mid-1972, the reservation of offset bonds was effectively limited to \$176 million, the total amount of California Water Fund monies expended up to that time. By mid-1972, all general obligation bonds authorized by the Burns-Porter Act had been offset, reserved for the Davis-Grunsky Act Program, or used for SWP construction.

Approximately \$8.5 million of the offset bonds have been used to finance planning studies of the Middle Fork Eel River Development. This financial analysis is not based on the use of any offset bond proceeds to meet capital requirements. If, at some time, the State constructs an additional conservation facility, as specified in California Water Code Section 12938, the remaining offset bonds could be sold.

Line 32, Davis-Grunsky Act Program Bond Proceeds, shows, for simplification, the entire \$130 million of capital expenditures authorized for the Davis-Grunsky Act Program, according to the Burns-Porter Act, as being funded by proceeds from the sale of general obligation bonds. In fact, \$102 million originated from bond proceeds while \$28 million from the California Water Fund was used for the program in lieu of bond proceeds prior to 1969. Since the final offset in 1994, DWR has accumulated \$44.6 million in capital costs through fiscal year 2006–2007.

Line 33, Application of California Water Fund Monies, shows the amount of SWP costs financed under the Burns-Porter Act. The act provides that any available money in the California Water Fund must be used for construction in lieu of proceeds from the sale of general obligation bonds.

When the Burns-Porter Act became effective in late 1960, approximately \$97 million had been accumulated in the fund. That balance, plus subsequent appropriations, interest earnings, and other miscellaneous income to the fund through December 31, 2015, was used to finance a total of \$508 million of SWP costs.

Line 34, Interim Financing, shows the net annual amounts of funds flowing into and out of the Water Revenue Commercial Paper Notes program. This program was established in March 1993 to provide an ongoing source of interim financing for water system projects prior to permanent financing from the sale of long-term revenue bonds. DWR has authority to issue up to \$600 million of Water Revenue Commercial Paper Notes. In addition, DWR authorized issuance of its Water Revenue Commercial Paper Notes for \$800 million to cover costs of the Oroville Dam Spillway Recovery and Restoration Project that is not federally reimbursed. A positive number indicates money borrowed from the program to finance construction costs. A negative number indicates money repaid to the program. The financial analysis assumes that all funds borrowed from the program will be repaid before the end of the analysis period.

Line 35, Direct Pay, shows the revenues received directly from the contractors rather than financing through bonds for certain SWP project construction expenditures. At this time, the North Bay Aqueduct Alternate Intake is funded this way.

Line 36, Application of Capital Resources Revenues to Construction, presents the

Capital Resources Revenues applied for capital expenditures.

Line 37, Revenue Transfers Applied, shows monies assumed to be transferred to the California Water Fund, according to provisions of the Burns-Porter Act, and subsequently reappropriated to construction (see Line 40 of Table 13-2). Projected amounts for the years 2019 through 2028 include funds to finance expenditures for agricultural drainage facilities, as indicated in Line 13 of Table 13-1, and expenditures for additional conservation facilities, as indicated in Line 12.

Line 38, Subtotal, Other Capital Financing, is the total of Lines 31 through 37.

Line 39, Total Financing of Capital Requirements, totals Lines 21, 30, and 38.

Annual Revenues and Expenditures

After financial analysis of SWP operations, DWR concluded that projected payments by contractors and other revenues will be adequate to pay annual OMP&R costs and meet all repayment obligations on funds used to finance SWP construction and other authorized costs during the period 2019 through 2028. Data on annual revenues and expenditures are presented in Table 13-2. A detailed discussion of each line item follows.

Project Revenues

Project revenues primarily consist of SWP water contractor payments required under their individual water supply contracts. Those revenues are deposited in two funds: the Central Valley Water Project Revenue Fund, where all revenues pledged to revenue bonds are placed, and the California Water Resources Development Bond Fund—Systems Revenue Account, where all other SWP operating revenues

are placed. Use of those funds is limited to paying operating costs and debt service, except that revenues in excess of those costs may be deposited to a reserve for future SWP construction since the California Water Fund has been repaid (see Line 39).

Line 1, Capital Resources Revenues, includes

- federal payments for SWP capital expenditures;
- appropriations for capital costs allocated to recreation;
- appropriations for SWP capital expenditures prior to passage of the Burns-Porter Act and according to Senate Bill 261 (Cologne; Chapter 411, Statutes of 1968);
- payments from Los Angeles Department of Water and Power for Castaic power development;
- advances from contractors for construction of requested work;
- investment earnings on the Capital Resources Account; and
- investment earnings on unexpended revenue bond proceeds.

Historically, appropriations for capital costs allocated to recreation and fish and wildlife enhancement (RFWE) amounted to \$5 million per year and were appropriated by the California Legislature from the State tideland oil revenues. There have been no appropriations from this fund since 1985.

Legislation enacted in 1989 offset a portion of the amount owed to the SWP by the State for costs allocated to RFWE against the amount the SWP owed to the California Water Fund (see Line 39). Since the final offset in 1994, DWR has accumulated \$121.4 million in capital costs through December 31, 2018.

In 2012, the Davis-Dolwig Act was amended to appropriate \$10 million per fiscal year from the Harbors and Watercraft Revolving

Fund to cover a portion of the OMP&R and capital costs allocated to RFWE. Starting in fiscal year 2012–2013, \$7.5 million is being appropriated for ongoing OMP&R and capital costs and \$2.5 million is being appropriated to reimburse for past unreimbursed OMP&R and capital costs.

Lines 2 through 12, Water Contractor Payments, show amounts of the separate elements of water contractor payments.

Amounts in Line 4 also include revenues sufficient to cover costs associated with sales of excess power. Appendix B of this bulletin presents a detailed explanation of payments identified in Lines 2 through 12.

OMP&R costs are repaid as they are incurred as part of the Transportation Charge; therefore, no interest charges are included. Construction costs included in the Transportation Charge, and all construction and annual OMP&R costs included in the Delta Water Charge, are to be repaid with interest at the Project Interest Rate.

The Project Interest Rate, as defined in Article 1(r) of the standard provisions for SWP water supply contracts, is the weighted average of the rates paid on certain securities issued and loans obtained to finance SWP facilities.

According to the original water supply contract provisions, the basis for determining the Project Interest Rate was the weighted average of rates paid on general obligation bond sales only. In 1969, after Oroville Revenue Bonds were issued, the contracts were amended to expand the basis to include rates on all other securities sold and loans obtained thereafter for financing SWP facilities, including revenue bonds (see Bulletin 132-70, page 28).

However, not all proceeds from the sale of revenue bonds are melded into the calculation of the Project Interest Rate. Only

those proceeds applied to construction costs (the only application of general obligation bonds permitted by law) and those consumed by the bond discount (a component of the total interest cost of a revenue bond issue) are included in the calculation (see Table 13-8).

Calculations for determining the Project Interest Rate do not include proceeds from the sale of revenue bonds for Off-Aqueduct Power facilities, the East Branch Enlargement facilities, SBA, or water system facilities defined in the Water Revenue Bond Amendment. Table 13-9 lists all bond sales by date and presents basic information used in the calculation of the Project Interest Rate.

Information about contractor water charges in Appendix B, which can be found in the back of this bulletin, is based on known conditions and substantiates DWR's determination of 2020 water charges to be billed on July 1, 2019. However, information about significant differences between the sum of future charges included in Lines 2 through 12 of Table 13-2 and the substantiation of 2019 charges included in Appendix B are as described below.

- Future capital costs in Appendix B are based on the prevailing prices as of December 31, 2018. Those costs presented in the financial analysis include allowances for price escalation.
- Pre-2019 charges in Appendix B represent charges as they should have been, according to currently known conditions. Pre-2019 charges included in Table 13-2 are those actually paid as part of previously determined bills.
- Charges in Appendix B are unadjusted for past overpayments or underpayments. Charges included in Table 13-2 for 2019 and thereafter have been adjusted for any apparent overpayments or underpayments of pre-2019 charges.
- Charges in Appendix B for East Branch Enlargement costs include the amounts

Table 13-8 Revenue Bond Proceeds Affecting Project Interest Rate (in millions of dollars)

| Project | Proceeds Included in Project Interest Rate | | | | | Percentage of Total Amount Included in Calculating Project Interest Rate [4] / [5] |
|--|---|---|--|---|--|---|
| | Applied to Construction Costs [1] | Less Portion of Proceeds Derived from Interest Earnings Prior to Delivery of Bonds [2] | Plus Bond Financing and Refunding Costs [3] | Subtotal, Proceeds Included in Calculating Project Interest Rate [1] - [2] + [3] | Total Principal Amount of Bonds [5] | |
| Devil Canyon-Castaic Project Revenue Bonds | 125.3 | 1.5 | 1.4 | 125.2 | 139.2 | 90 |
| Pyramid Project Revenue Bonds (Series A) | 71.2 | 0.5 | 1.1 | 71.8 | 95.8 | 75 |
| Alamo Project Bond Anticipation Note | 16.8 | 0.1 | 0.3 | 17.0 | 24.4 | 70 |
| Small Hydro Project I Revenue Bonds (Series D) | 25.4 | 0.2 | 1.5 | 26.7 | 37.5 | 71 |
| Alamo Project Revenue Bonds (Series F) | 38.9 | 0.3 | 0.7 | 39.3 | 50.0 | 79 |
| Power Facilities Revenue Bonds (Series H) | | | | | | |
| Pyramid Project | 5.0 | 0.0 | 0.1 | 5.1 | 5.1 | 100 |
| Alamo Project | 1.7 | 0.0 | 0.0 | 1.7 | 1.7 | 100 |
| Small Hydro Project I | 25.2 ^a | 0.2 | 0.4 | 25.4 | 35.6 | 71 |
| Water System Revenue Bonds (Series J) | | | | | | |
| Pyramid Project | 0.0 | 0.0 | 75.9 ^b | 75.9 | 99.2 ^b | 77 |
| Alamo Project | 0.0 | 0.0 | 45.6 ^b | 45.6 | 57.1 ^b | 80 |
| Small Hydro Project I | 0.0 | 0.0 | 27.8 ^b | 27.8 | 38.8 ^b | 72 |
| Water System Revenue Bonds (Series L) | | | | | | |
| Small Hydro Project I | 0.0 | 0.0 | 1.5 ^b | 1.5 | 2.1 ^b | 71 |
| Water System Revenue Bonds (Series Q) | | | | | | |
| Pyramid Project | 0.0 | 0.0 | 3.0 ^b | 3.0 | 3.9 ^b | 77 |
| Alamo Project | 0.0 | 0.0 | 4.8 ^b | 4.8 | 6.0 ^b | 80 |
| Water System Revenue Bonds (Series S) | | | | | | |
| Pyramid Project | 0.0 | 0.0 | 8.0 ^b | 8.0 | 10.4 ^b | 77 |
| Alamo Project | 0.0 | 0.0 | 7.6 ^b | 7.6 | 9.5 ^b | 80 |
| Water System Revenue Bonds (Series U) | | | | | | |
| Pyramid Project | 0.0 | 0.0 | 2.4 ^b | 2.4 | 3.2 ^b | 75 |
| Alamo Project | 0.0 | 0.0 | 3.2 ^b | 3.2 | 4.0 ^b | 80 |
| Water System Revenue Bonds (Series W) | | | | | | |
| Pyramid Project | 0.0 | 0.0 | 27.7 ^b | 27.7 | 36.0 ^b | 77 |
| Alamo Project | 0.0 | 0.0 | 11.8 ^b | 11.8 | 14.7 ^b | 80 |
| Small Hydro Project (construction) | 3.4 | 0.0 | 0.0 | 3.4 | 3.7 | 92 |
| Small Hydro Project (refunding) | 0.0 | 0.0 | 16.3 ^b | 16.3 | 22.7 ^b | 72 |
| Water System Revenue Bonds (Series X) | | | | | | |
| Pyramid Project | 0.0 | 0.0 | 8.5 ^b | 8.5 | 11.0 ^b | 77 |
| Alamo Project (Series H refunding) | 0.0 | 0.0 | 0.3 ^b | 0.3 | 0.3 ^b | 100 |
| Alamo Project (Series F refunding) | 0.0 | 0.0 | 3.9 ^b | 3.9 | 4.9 ^b | 79 |
| Small Hydro Project | 0.0 | 0.0 | 4.6 ^b | 4.6 | 6.4 ^b | 72 |

^a Amount consists of 71 percent of proceeds deposited in escrow to refund portion of Series D bonds (\$35.1 million plus deposits to construction account [\$0.3 million]).^b Represents amount of principal used to refund portions of prior bond issues.

Table 13-9 Actual Bond Sales, Delivery Dates, and Project Interest Rates, by Date of Sale

1 of 3

| Bond Sales | Date of Sale | Delivery Date | Dollar-Years ¹ (thousands) | Interest Cost (thousands) | Issue Interest Rate ² (percent) | Project Interest Rate ³ (percent) |
|--|--------------|---------------|--|------------------------------|---|---|
| \$ 50,000,000 Bond Anticipation Notes | 11/21/63 | 11/21/63 | 26,944 | 531 | 1.971 | 1.971 |
| \$100,000,000 Series A Water Bonds | 2/18/64 | 2/18/64 | 3,402,000 | 119,750 | 3.520 | 3.508 |
| \$ 50,000,000 Series B Water Bonds | 5/5/64 | 5/5/64 | 1,726,000 | 60,986 | 3.533 | 3.516 |
| \$100,000,000 Series C Water Bonds | 10/7/64 | 10/7/64 | 3,452,000 | 123,764 | 3.585 | 3.544 |
| \$100,000,000 Series D Water Bonds | 2/16/65 | 2/16/65 | 3,497,900 | 122,403 | 3.499 | 3.531 |
| \$100,000,000 Series E Water Bonds | 11/23/65 | 11/23/65 | 3,497,900 | 130,029 | 3.717 | 3.573 |
| \$100,000,000 Series F Water Bonds | 6/8/66 | 6/8/66 | 3,497,900 | 137,359 | 3.927 | 3.638 |
| \$100,000,000 Series G Water Bonds | 11/22/66 | 11/22/66 | 3,497,900 | 143,788 | 4.111 | 3.711 |
| \$100,000,000 Series H Water Bonds | 3/21/67 | 3/21/67 | 3,497,900 | 129,261 | 3.695 | 3.709 |
| \$100,000,000 Series J Water Bonds | 7/18/67 | 7/18/67 | 3,497,900 | 143,199 | 4.094 | 3.754 |
| \$100,000,000 Series K Water Bonds | 11/14/67 | 11/14/67 | 3,497,900 | 163,887 | 4.685 | 3.853 |
| \$150,000,000 Revenue Bonds, Oroville Division, Series A | 4/3/68 | 4/3/68 | 5,228,700 | 270,289 | 5.169 | |
| \$100,000,000 Series L Water Bonds | 7/11/68 | 7/11/68 | 3,497,900 | 166,918 | 4.772 | 3.941 |
| \$100,000,000 Series M Water Bonds | 10/22/68 | 10/22/68 | 3,497,900 | 169,989 | 4.860 | 4.021 |
| \$ 94,995,000 Revenue Bonds, Oroville Division, Series B | 4/1/69 | 4/1/69 | 3,423,460 | 195,902 | 5.722 | |
| \$ 46,761,000 Cumulative 1970 General Fund Borrowing, repaid 7/10/70 | - | | 4,938 | 346 | 7.007 | |
| \$200,000,000 Series N and P Bond Anticipation Notes | 6/16/70 | 6/16/70 | 200,000 | 11,660 | 5.830 | 4.030 |
| \$100,000,000 Series N Water Bonds | 2/2/71 | 2/2/71 | 3,447,900 | 190,292 | 5.519 | 4.148 |
| \$100,000,000 Series Q Bond Anticipation Notes | 3/10/71 | 3/10/71 | 100,000 | 2,349 | 2.349 | 4.143 |
| \$100,000,000 Series P Water Bonds | 4/21/71 | 4/21/71 | 3,397,900 | 193,377 | 5.691 | 4.255 |
| \$150,000,000 Series Q and R Water Bonds | 11/9/71 | 11/9/71 | 5,171,850 | 265,734 | 5.138 | 4.342 |
| \$ 40,000,000 Series S Water Bonds | 3/28/72 | 3/28/72 | 1,399,160 | 76,509 | 5.468 | 4.371 |
| \$139,165,000 Devil Canyon–Castaic Revenue Bonds | 8/8/72 | 8/8/72 | 4,776,204 | 258,839 | 5.419 | 4.457 |
| \$ 10,000,000 Series T Water Bonds | 3/20/73 | 3/20/73 | 185,265 | 9,491 | 5.123 | 4.459 |
| \$ 10,000,000 Series U Water Bonds | 1/13/76 | 1/13/76 | 158,750 | 8,731 | 5.500 | 4.462 |
| \$ 10,000,000 Series V Water Bonds | 11/15/77 | 11/15/77 | 158,750 | 7,573 | 4.770 | 4.462 |
| \$ 95,800,000 Pyramid Hydroelectric Revenue Bonds | 10/23/79 | 10/23/79 | 2,260,072 | 172,495 | 7.632 | 4.584 |
| \$150,000,000 Reid Gardner Project, Series A Bond Anticipation Notes | 7/1/81 | 7/1/81 | 347,906 | 29,572 | 8.500 | |
| \$ 75,600,000 Bottle Rock Project, Bond Anticipation Notes | 12/1/81 | 12/1/81 | 264,600 | 25,137 | 9.500 | |
| \$ 24,400,000 Alamo Project, Bond Anticipation Notes | 12/1/81 | 12/1/81 | 24,266 | 2,305 | 9.499 | 4.589 |
| \$200,000,000 Reid Gardner Project, Series B Revenue Bonds | 7/7/82 | 7/7/82 | 4,623,137 | 553,793 | 11.979 | |
| \$125,000,000 Reid Gardner Project, Series C Revenue Bonds | 11/16/82 | 11/16/82 | 2,720,045 | 255,744 | 9.402 | |
| \$ 37,500,000 Small Hydro Project I, Series D Revenue Bonds | 11/16/82 | 11/16/82 | 837,769 | 84,587 | 10.097 | 4.666 |
| \$ 37,500,000 South Geysers Project, Series D Revenue Bonds | 11/16/82 | 11/16/82 | 930,325 | 90,021 | 9.676 | |
| \$125,000,000 Bottle Rock Project, Series E Revenue Bonds | 4/27/83 | 4/27/83 | 2,624,805 | 225,102 | 8.576 | |
| \$ 50,000,000 Alamo Project, Series F Revenue Bonds | 4/27/83 | 4/27/83 | 1,190,763 | 100,836 | 8.468 | 4.727 |
| \$ 25,000,000 South Geysers Project, Series F Revenue Bonds | 4/27/83 | 4/27/83 | 608,550 | 52,578 | 8.640 | |
| \$239,505,000 Reid Gardner Project, Series G Revenue Bonds | 3/15/85 | 3/15/85 | 4,524,136 | 425,840 | 9.413 | |
| \$206,690,000 Power Facilities Series H Revenue Bonds | 6/20/86 | 6/20/86 | 4,430,520 | 347,745 | 7.849 | 4.713 |
| \$132,000,000 East Branch Enlargement, Series A Water System Revenue Bonds | 7/15/86 | 7/15/86 | 3,427,165 | 254,915 | 7.438 | |
| \$100,000,000 Series B Water System Revenue Bonds | 5/5/87 | 5/5/87 | 2,564,012 | 194,817 | 7.598 | |
| \$ 9,000,000 Series C Water System Revenue Bonds | 12/1/87 | 12/1/87 | 324,000 | 31,995 | 9.875 | |

Table 13-9 Actual Bond Sales, Delivery Dates, and Project Interest Rates, by Date of Sale

2 of 3

| Bond Sales | Date of Sale | Delivery Date | Dollar-Years ¹ (thousands) | Interest Cost (thousands) | Issue Interest Rate ² (percent) | Project Interest Rate ³ (percent) |
|--|--------------|---------------|--|------------------------------|---|---|
| \$100,000,000 Series D Water System Revenue Bonds | 6/14/88 | 6/14/88 | 2,640,510 | 201,253 | 7.622 | |
| \$ 9,000,000 Series E Water System Revenue Bonds | 11/29/88 | 12/5/88 | 324,000 | 31,995 | 9.875 | |
| \$160,030,000 Series F Water System Revenue Bonds | 3/15/89 | 4/20/89 | 2,779,838 | 189,261 | 6.808 | |
| \$100,000,000 Series G Water System Revenue Bonds | 3/6/90 | 3/6/90 | 2,434,175 | 172,277 | 7.077 | |
| \$100,000,000 Series H Water System Revenue Bonds | 1/10/91 | 1/10/91 | 2,459,172 | 168,857 | 6.866 | |
| \$180,000,000 Series I Water System Revenue Bonds | 5/14/91 | 5/14/91 | 4,366,680 | 294,090 | 6.735 | |
| \$ 9,000,000 Series W Water Bonds | 8/1/91 | 8/1/91 | 95,250 | 6,172 | 6.480 | |
| \$649,835,000 Series J Water System Revenue Bonds | 1/16/92 | 1/28/92 | 12,422,222 | 745,198 | 5.999 | 4.621 |
| \$100,000,000 Series K Water System Revenue Bonds | 5/12/92 | 6/4/92 | 2,366,783 | 147,064 | 6.214 | |
| \$537,830,000 Series L Water System Revenue Bonds | 5/19/93 | 6/2/93 | 11,414,859 | 640,518 | 5.611 | 4.620 |
| \$ 2,000,000 Series X Water Bonds | 9/1/93 | 9/1/93 | 26,000 | 1,247 | 4.796 | 4.621 |
| \$ 1,400,000 Series Y Water Bonds | 11/30/94 | 11/30/94 | 19,483 | 1,249 | 6.411 | |
| \$190,000,000 Series M Water System Revenue Bonds | 12/9/93 | 12/21/93 | 3,911,846 | 194,981 | 4.984 | |
| \$152,000,000 Series N Water System Revenue Bonds | 3/3/95 | 3/14/95 | 2,241,606 | 122,658 | 5.472 | |
| \$335,000,000 Series O Water System Revenue Bonds | 12/5/95 | 12/20/95 | 7,528,890 | 375,667 | 4.990 | |
| \$160,000,000 Series P Water System Revenue Bonds | 5/7/96 | 5/22/96 | 3,553,823 | 204,524 | 5.755 | |
| \$266,630,000 Series Q Water System Revenue Bonds | 11/5/96 | 12/4/96 | 5,481,815 | 299,846 | 5.470 | 4.620 |
| \$ 20,700,000 Series R Water System Revenue Bonds | 3/10/97 | 3/12/97 | 564,125 | 36,627 | 6.493 | |
| \$200,205,000 Series S Water System Revenue Bonds | 7/30/97 | 8/13/97 | 4,093,110 | 203,755 | 4.978 | 4.615 |
| \$135,665,000 Series T Water System Revenue Bonds | 7/30/97 | 3/4/98 | 1,310,620 | 66,942 | 5.108 | |
| \$207,180,000 Series U Water System Revenue Bonds | 11/19/98 | 12/1/98 | 4,032,075 | 200,758 | 4.979 | |
| \$ 20,580,000 Series V Water System Revenue Bonds | 11/19/98 | 12/1/98 | 525,100 | 32,819 | 6.250 | |
| \$260,995,000 Series W Water System Revenue Bonds | 5/1/01 | 5/17/01 | 3,659,312 | 195,822 | 5.351 | 4.613 |
| \$160,225,000 Series X Water System Revenue Bonds | 5/1/02 | 6/4/02 | 2,732,785 | 139,109 | 5.090 | 4.610 |
| \$329,885,000 Series Y Water System Revenue Bonds | 7/25/02 | 3/5/03 | 4,422,973 | 222,654 | 5.034 | |
| \$170,655,000 Series Z Water System Revenue Bonds | 10/1/02 | 10/16/02 | 1,706,132 | 75,696 | 4.437 | |
| \$108,705,000 Series AA Water System Revenue Bonds | 10/4/02 | 3/5/03 | 2,114,341 | 104,220 | 4.929 | |
| \$189,625,000 Series AB Water System Revenue Bonds | 3/9/04 | 3/18/04 | 4,344,942 | 173,788 | 4.000 | |
| \$272,070,000 Series AC Water System Revenue Bonds | 12/15/04 | 1/6/05 | 4,479,436 | 209,150 | 4.669 | |
| \$112,390,000 Series AD Water System Revenue Bonds | 6/14/05 | 7/7/05 | 1,827,449 | 90,461 | 4.950 | 4.608 |
| \$632,890,000 Series AE Water System Revenue Bonds | 4/23/08 | 5/1/08 | 8,884,000 | 436,216 | 4.910 | |
| \$287,735,000 Series AF Water System Revenue Bonds | 3/11/09 | 3/19/09 | 2,980,895 | 143,464 | 4.813 | |
| \$169,115,000 Series AG Water System Revenue Bonds | 11/17/09 | 12/2/09 | 2,907,605 | 142,774 | 4.910 | |
| \$ 97,675,000 Series AH Water System Revenue Bonds | 10/27/10 | 11/9/10 | 1,432,014 | 72,176 | 5.040 | 4.610 |
| \$ 92,275,000 Series AI Water System Revenue Bonds | 10/27/10 | 9/7/11 | 698,716 | 34,936 | 5.000 | |
| \$216,930,000 Series AJ Water System Revenue Bonds | 10/6/11 | 10/13/11 | 2,080,429 | 100,663 | 4.839 | |
| \$ 36,370,000 Series AK Water System Revenue Bonds | 2/28/12 | 3/13/12 | 495,566 | 23,466 | 4.735 | |
| \$105,875,000 Series AL Water System Revenue Bonds | 2/28/12 | 9/5/12 | 739,447 | 36,972 | 5.000 | |
| \$183,960,000 Series AM Water System Revenue Bonds | 2/28/12 | 3/5/13 | 1,440,539 | 72,027 | 5.000 | |
| \$ 49,525,000 Series AN Water System Revenue Bonds | 9/19/12 | 9/27/12 | 646,489 | 31,783 | 4.916 | |
| \$317,505,000 Series AO Water System Revenue Bonds | 9/19/12 | 9/27/12 | 2,830,185 | 71,219 | 2.516 | |
| \$ 45,340,000 Series AP Water System Revenue Bonds | 3/12/13 | 3/26/13 | 621,111 | 25,008 | 4.026 | |

Table 13-9 Actual Bond Sales, Delivery Dates, and Project Interest Rates, by Date of Sale

| Bond Sales | Date of Sale | Delivery Date | Dollar-Years ¹ (thousands) | Interest Cost (thousands) | Issue Interest Rate ² (percent) | Project Interest Rate ³ (percent) |
|---|--------------|---------------|--|------------------------------|---|---|
| \$120,205,000 Series AQ Water System Revenue Bonds | 5/21/13 | 6/18/13 | 2,120,496 | 85,993 | 4.055 | |
| \$161,445,000 Series AR Water System Revenue Bonds | 2/25/14 | 3/6/14 | 2,126,626 | 91,827 | 4.318 | |
| \$645,795,000 Series AS Water System Revenue Bonds | 9/30/14 | 10/30/14 | 7,285,936 | 363,246 | 4.986 | |
| \$149,245,000 Series AT Water System Revenue Bonds ⁴ | 10/29/14 | 11/6/14 | 2,784,834 | 83,541 | 3.000 | |
| \$109,275,000 Series AU Water System Revenue Bonds ⁴ | 8/25/15 | 9/2/15 | 1,946,180 | 40,285 | 2.070 | |
| \$106,530,000 Series AV Water System Revenue Bonds | 5/10/16 | 5/24/16 | 1,302,906 | 56,488 | 4.336 | |
| \$428,130,000 Series AW Water System Revenue Bonds | 10/13/16 | 10/20/16 | 5,454,047 | 259,585 | 4.759 | |
| \$350,670,000 Series AX Water System Revenue Bonds | 12/6/17 | 12/9/17 | 2,920,117 | 146,006 | 5.000 | |
| \$140,825,000 Series AY Water System Revenue Bonds | 12/6/17 | 12/9/17 | 1,050,620 | 30,038 | 2.859 | |
| \$215,295,000 Series AZ Water System Revenue Bonds | 10/10/18 | 10/18/18 | 1,906,161 | 94,688 | 4.967 | |
| Total | | | 253,977,265 | 13,941,495 | | |
| Portion allocated to Project Interest Rate | | | 63,903,487 | 2,945,789 | 4.610 | 4.610 |

¹ A unit equivalent to one dollar of principal amount outstanding for one year.² The total interest rate (without regard to discounts paid or to premiums received) divided by the total dollar-years, expressed as a percent.³ Cumulative interest costs divided by cumulative dollar-years, expressed as a percent. (Excluding Oroville Division bonds and revenue bonds for Off-Aqueduct Power Facilities, East Branch Enlargement Facilities, East Branch Extension Facilities, Water System Facilities as defined in the Water Revenue Bond Amendment, Coastal Branch Extension Facilities, or South Bay Aqueduct Enlargement Facilities.)⁴ Variable rate issue. Assumed an interest rate. Actual interest cost and rate will vary.

for debt service and 25 percent cover for the East Branch Enlargement share of the Series A through Series AZ bonds. Charges in Table 13-2 apply to Series A through Series AZ bonds and also include amounts of the debt service and cover for assumed future bonds.

- The water revenue bond surcharge in Appendix B applies only to the Series B through Series AZ bonds. Surcharge values included in Table 13-2 apply to Series B through Series AZ bonds and to assumed future issues required to finance SWP construction costs included in Table 13-1.

Line 13, Subtotal, Water Contractor Payments, is the total of Lines 2 through 12.

Line 14, Revenue Bond Cover Adjustments, represents the credit to contractors resulting from the cover of 25 percent of the annual debt service for Power Facilities Revenue Bonds and Water System Revenue Bonds. Cover is collected as required by the bond resolutions to provide security to the

bondholders. If not needed to meet annual bond service, the cover is credited to the contractors in the following year. The annual charges for the following cost components include an amount for bond cover:

- minimum OMP&R component of the Transportation Charge for Off-Aqueduct Power Facilities
- Water System Revenue Bond Surcharge
- capital cost component of the Transportation Charge for East Branch Enlargement Facilities
- capital cost component of the Transportation Charge for Coastal Branch Extension Facilities
- capital cost component of the Transportation Charge for East Branch Extension Facilities
- capital cost component of the Transportation Charge for Tehachapi Afterbay
- capital cost component of the Transportation Charge for SBA Enlargement

Line 15, Rate Management Adjustments, shows the projected amount of revenue reductions allocated to contractors after repayment of the California Water Fund (see Line 39). Under provisions of the Monterey Amendment, the reduction amount allocated to agricultural contractors is deposited into a trust fund to stabilize payments in water-short years. The urban contractor allocation is applied as a direct reduction in charges.

Line 16, Federal Payments for Project Operating Costs, shows federal payments made in accordance with the December 31, 1961, agreement between California and the United States providing for DWR to operate and maintain the San Luis Joint-Use Facilities. According to the January 12, 1972, supplement to the agreement, the U.S. Bureau of Reclamation (Reclamation) initially paid 45 percent of operations, maintenance, and replacement (OM&R) costs for those activities. (The percentage does not apply to power costs; Reclamation and DWR each provide their own power to pump water through the joint facilities.)

The percentage paid by Reclamation is periodically reviewed by Reclamation and DWR. A review of the percentage paid by Reclamation was completed in 1987 and resulted in a federal share of 44.09 percent. During the most recent review concluded in August 2015, DWR agreed to reevaluate Reclamation's percentage every five years based on the preceding five years of actual operating expenditures. Operating expenditures for calendar years 2006 through 2010 were reviewed, and the percentage paid by Reclamation for calendar years 2011 through 2017 was reduced to 39.72 percent. In 2018, the percentage was set at 39.90. The amounts in Line 16 are based on the assumption that the federal share will continue at this level for calendar years 2019 through 2028.

Line 17, Appropriations for Operating Costs Allocated to Recreation, shows appropriations made under the Davis-Dolwig Act. In passing the Davis-Dolwig Act, the California Legislature declared its intent that, except for funds provided according to Assembly Bill 12 (Porter, et al.; Chapter 27, Statutes of 1966), DWR's budget will include appropriations of monies from the General Fund necessary for RFWE in connection with State water projects.

Annual OMP&R costs allocated to RFWE are to be paid by annual appropriations from the General Fund. Through fiscal year 1982–1983, these appropriations totaled \$16.7 million. No additional appropriations have been made from this fund since fiscal year 1982–1983.

Legislation enacted in 1989 offset a portion of the amount owed to the SWP by the State for costs allocated to RFWE against the amount the SWP owed to the California Water Fund (see Line 39). Since the final offset in 1994, DWR has accumulated \$257.7 million in OMP&R costs through December 31, 2018.

In 2012, the Davis-Dolwig Act was amended to appropriate \$10 million per fiscal year from the Harbors and Watercraft Revolving Fund to cover a portion of the OMP&R and capital costs allocated to RFWE. Starting in fiscal year 2012–2013, \$7.5 million is being appropriated for ongoing OM&R and capital RFWE costs and \$2.5 million is being appropriated to reimburse DWR for past unreimbursed OMP&R and capital costs.

Line 18, Davis-Grunsky Loan Repayments, shows the repayments by local agencies of \$79.9 million of loans disbursed as of December 31, 2018. Repayment on any future loans was assumed to be beyond the period covered by the financial analysis.

Line 19, Revenue Bond Proceeds, includes bond proceeds classified as special reserves

according to the description of revenue bond financing in Line 17 of Table 13-1. Those proceeds, used for capitalized OMP&R costs, revenue bond debt service, and debt service reserves, are not classified as revenue but are included in this line to simplify the financial presentation.

Line 20, Interest Earnings on Operating Revenues, includes interest earnings on unexpended proceeds from the sale of general obligation bonds, interest on operating reserves, and other short-term investment earnings on SWP revenues.

Line 21, Oroville-Thermalito Payments, shows payments from Pacific Gas & Electric Company, Southern California Edison, and San Diego Gas & Electric Company for power generation at the Oroville facilities. Those utilities purchased all power generation from Hyatt and Thermalito power plants before April 1, 1983, in accordance with a power sale contract dated November 29, 1967. The historic amount includes the amounts of final settlement of payments made according to the contract.

Line 22, Miscellaneous Revenues, includes all other operating revenues not included in Lines 2 through 21.

Line 23, Subtotal, Other Revenues, is the total of Lines 16 through 22.

Line 24, Total Operating Revenues, is the total of Lines 13, 14, 15, and 23.

Line 25, Total Operating Revenues and Capital Resources Revenues, is the total of Lines 1 and 24.

Project Expenses

Project expenses include

- operations, maintenance, and power costs;
- deposits to replacement reserves;

- deposits to special reserves;
- capital resources expenditures; and
- debt service.

Revenue bond proceeds earmarked for debt service during construction and the first year's operating expenses are deposited in the Central Valley Water Project Construction Fund and disbursed in accordance with resolutions authorizing the issuance of such bonds.

Water contractor revenues associated with operating costs and debt service attributable to projects financed by revenue bonds are deposited in the Central Valley Water Project Revenue Fund for appropriate disbursement. All other operating revenues are deposited in the California Water Resources Development Bond Fund—Systems Revenue Account and are disbursed in accordance with the following four priorities of use, as specified in the Burns-Porter Act:

- SWP OMP&R costs
- general obligation bond debt service
- repayment of expenditures from the California Water Fund
- deposits to a reserve for future SWP construction

Project expenses are presented in Lines 26 through 36 of Table 13-2.

Line 26, Project Operations, Maintenance, Power, and Replacement Costs, shows the OMP&R portion of the historical and projected costs presented in Table 13-10.

Table 13-10 and Line 26 of Table 13-2 also include the amounts of the operations and maintenance costs for the federal share of joint facilities and those OMP&R costs allocated to recreation, which are intended to be offset by revenues listed in Lines 16 and 17.

Table 13-10 Operations, Maintenance, Power, and Replacement Costs by Facility, Composition, and Purpose (in thousands of dollars)

| Feature | Calendar Year | | | | | | | | | | TOTAL |
|---|-------------------|----------------|----------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | 1962-2016 | 2017 | 2018 | 1962-2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | |
| Project Facility | | | | | | | | | | | |
| Feather River facilities | 1,697,242 | 79,348 | 90,214 | 1,866,804 | 78,942 | 80,468 | 81,378 | 82,846 | 82,635 | 83,706 | 84,153 |
| North Bay Aqueduct | 124,009 | 5,859 | 8,548 | 138,416 | 8,951 | 8,527 | 7,634 | 8,305 | 8,277 | 8,375 | 8,411 |
| Delta facilities | 1,072,238 | 40,016 | 73,863 | 1,186,117 | 78,732 | 84,037 | 81,860 | 82,554 | 74,332 | 75,957 | 76,863 |
| Suisun Marsh | 65,625 | 12,855 | 12,802 | 91,282 | 4,956 | 4,998 | 4,924 | 5,020 | 5,007 | 5,072 | 5,099 |
| South Bay Aqueduct | 430,512 | 23,006 | 28,912 | 482,430 | 20,936 | 21,607 | 23,038 | 22,159 | 22,073 | 22,306 | 22,374 |
| California Aqueduct | | | | | | | | | | | |
| Delta to Edmonston | 4,759,334 | 277,872 | 225,412 | 5,262,619 | 259,681 | 255,226 | 257,076 | 273,399 | 258,552 | 260,072 | 264,821 |
| Edmonston to Perris | 4,347,952 | 269,943 | 225,510 | 4,843,405 | 248,294 | 250,513 | 254,714 | 267,998 | 264,648 | 262,911 | 265,880 |
| West Branch | 208,225 | 39,129 | 32,987 | 280,341 | 32,141 | 35,884 | 36,669 | 33,414 | 34,031 | 34,346 | 34,892 |
| Coastal Branch | 379,094 | 27,068 | 30,611 | 436,773 | 24,256 | 23,281 | 23,152 | 24,726 | 24,635 | 24,958 | 24,984 |
| East Branch Enlargement | 148,610 | 9,722 | 10,966 | 169,298 | 12,059 | 11,028 | 11,745 | 11,839 | 11,692 | 11,726 | 11,672 |
| East Branch Extension | 57,201 | 8,813 | 9,998 | 76,012 | 10,067 | 10,356 | 9,485 | 9,598 | 9,565 | 9,678 | 9,719 |
| Off-Aqueduct power-generating facilities | 1,665,347 | 109 | 109 | 1,665,564 | 110 | 110 | 111 | 112 | 112 | 113 | 113 |
| Recreation, planning, and Central Valley Project negotiations | 10,432 | 1,146 | 1,294 | 12,872 | 2,386 | 2,386 | 2,386 | 2,386 | 0 | 0 | 0 |
| Water quality monitoring | 424,976 | 12,683 | 450,342 | 12,683 | 12,683 | 12,683 | 12,683 | 11,379 | 11,379 | 11,379 | 11,379 |
| Davis-Grunsky Act Program | 6,366 | 192 | 163 | 6,721 | 288 | 288 | 288 | 288 | 288 | 288 | 288 |
| Subtotal | 15,397,163 | 807,760 | 764,072 | 16,368,996 | 794,482 | 801,392 | 807,143 | 836,023 | 807,216 | 810,151 | 819,456 |
| Payments to/credits from PG&E* under Comprehensive Agreement | (59,848) | 0 | 0 | (59,848) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total OMP&R Costs | 15,337,315 | 807,760 | 764,072 | 16,909,148 | 794,482 | 801,392 | 807,143 | 836,023 | 807,216 | 810,151 | 819,456 |
| Composition | | | | | | | | | | | |
| Salaries and expenses of headquarters personnel | 4,284,976 | 227,717 | 203,667 | 4,716,360 | 212,204 | 213,007 | 212,433 | 228,673 | 210,931 | 215,023 | 221,884 |
| Salaries and expenses of field personnel | 5,806,196 | 221,798 | 213,632 | 6,241,626 | 222,587 | 223,429 | 222,827 | 239,862 | 221,251 | 225,544 | 232,741 |
| Pumping power | | | | | | | | | | | |
| Used by pumping plants | 4,466,792 | 430,461 | 371,820 | 5,269,074 | 399,378 | 399,259 | 404,930 | 397,649 | 403,861 | 398,753 | 393,767 |
| Produced by generation plants | (714,060) | (72,325) | (25,156) | (811,541) | (39,797) | (34,413) | (33,158) | (30,273) | (28,939) | (29,282) | (29,049) |
| Off-Aqueduct power-generating facilities requirement | 1,665,347 | 109 | 109 | 1,665,565 | 110 | 110 | 111 | 112 | 112 | 113 | 113 |
| Oroville-Thermalito insurance premiums | 8,963 | 0 | 0 | 8,963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Less portion of costs incurred during construction | (121,051) | 0 | 0 | (121,051) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Payments to/credits from PG&E* under Comprehensive Agreement | (59,848) | 0 | 0 | (59,848) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total OMP&R Costs | 15,337,315 | 807,760 | 764,072 | 16,909,148 | 794,482 | 801,392 | 807,143 | 836,023 | 807,216 | 810,151 | 819,456 |
| Project Purpose | | | | | | | | | | | |
| Water supply and power generation | 14,627,806 | 773,062 | 718,337 | 16,119,205 | 749,744 | 756,637 | 762,388 | 791,269 | 762,462 | 765,396 | 774,702 |
| Recreation and fish and wildlife enhancement | 306,930 | 19,231 | 27,408 | 353,569 | 27,408 | 27,408 | 27,408 | 27,408 | 27,408 | 27,408 | 27,408 |
| Flood control | 12,357 | 729 | 1,047 | 14,133 | 1,047 | 1,047 | 1,047 | 1,047 | 1,047 | 1,047 | 1,047 |
| Miscellaneous purposes | | | | | | | | | | | |
| Federal share: San Luis and Delta facilities | 408,958 | 13,452 | 16,013 | 438,423 | 14,732 | 14,732 | 14,732 | 14,732 | 14,732 | 14,732 | 14,732 |
| Other (Davis-Grunsky, drainage, City of Los Angeles) | 41,112 | 1,286 | 1,268 | 43,666 | 1,551 | 1,558 | 1,568 | 1,568 | 1,568 | 1,568 | 1,568 |
| Payments to/credits from PG&E* under Comprehensive Agreement | (59,848) | 0 | 0 | (59,848) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total OMP&R Costs | 15,337,315 | 807,760 | 764,072 | 16,909,148 | 794,482 | 801,392 | 807,143 | 836,023 | 807,216 | 810,151 | 819,456 |

* Pacific Gas & Electric Company

Allowances for cost escalations are included in OMP&R costs through 2018. Allowances for additional long-term price escalations in the future are not included in these estimates because changes in OMP&R costs do not substantially affect the overall results of the financial analysis. (For the most part, changes in OMP&R costs cause direct offsetting changes in operating revenues.)

Power costs make up the largest component of annual operating expenses for the SWP. Assumptions about future power sources and costs are discussed in Chapter 9, Power Resources. Line 26 also includes costs associated with power transactions that result in the sale of power not required for the delivery of water.

Line 27, Deposits to Replacement Reserves, shows funds set aside as required by contract for replacing existing SWP facilities. By December 31, 2018, a net deposit (which includes returned deposits) of \$115.2 million had been made; \$100.1 million had been spent for replacement costs. The balance of the replacement reserve as of that date was \$37.9 million.

Line 28, Deposits to Special Reserves Under Revenue Bond Financing, includes two significant components: special reserve deposits related to revenue bonds and capital resources revenue carryover from prior years used for construction in the current year. Special reserve deposits are the net of several income and expenditure items.

Income items related to revenue bonds are as follows:

- proceeds set aside to pay bond interest during construction (capitalized interest)
- proceeds set aside for first year operating costs (capitalized operations and maintenance)
- water contractor payments or bond proceeds set aside for debt service reserves

- water contractor payments for revenue bond cover requirements
- deposits to and withdrawals from operating reserves to meet day-to-day cash flow requirements

The 1952–2018 column also includes advances to DWR's revolving fund for working funds to purchase mobile equipment and to meet day-to-day operating expenses.

The expenditure items related to revenue bonds are as follows:

- debt service cover payments returned to contractors
- debt service reserve interest payments returned to contractors
- surplus account funds returned to contractors or applied to meet expenses
- total capitalized interest paid out
- total capitalized operations and maintenance paid out

Special reserves, reduced over time as reserved amounts, are used for their respective purposes. The amount indicated each year in Line 28 reflects the change from the previous year. A negative number indicates a withdrawal of special reserves to meet expenses, while a positive number indicates a deposit.

Line 29, Capital Resources Expenditures, includes the amount of capital resources revenues applied to construction that is shown in Line 36 of Table 13-1. In Table 13-2, these expenditures are funded out of withdrawals from the reserves in Line 28 and do not affect net revenues shown in Line 38.

Lines 30 and 31, Payment of Debt Service on Bonds Sold through December 31, 2018, show the total principal and interest payments, respectively, on bonds sold to date. Table 13-11 summarizes payments on general obligation bonds (Series A through Y

Table 13-11 Annual Debt Service on Bonds Sold through December 31, 2018 (in thousands of dollars)

1 of 2

| Calendar Year | Series A through Y Water Bonds | | Oroville Revenue Bonds ¹ | | Pyramid Project Revenue Bonds ² | | Alamo Project Revenue Bonds ² | | Small Hydro Project Revenue Bonds ² | | Water System Facilities Water System Revenue Bonds ³ | | Devil Canyon-Castaic Project Revenue Bonds | | Reid Gardner Project Revenue Bonds ^{2,3} | | South Geysers Project Revenue Bonds ² | | Bottle Rock Project Revenue Bonds ² | | East Branch Enlargement Project Water System Revenue Bonds ³ | | Coastal Branch Extension Facilities Water System Revenue Bonds | | East Branch Extension Facilities Water System Revenue Bonds ³ | | South Bay Enlargement Facilities Water System Revenue Bonds ³ | | Tehachapi East Afterbay Facilities Water System Revenue Bonds ³ | | Grand Total | |
|---------------|--------------------------------|----------|-------------------------------------|----------|--|----------|--|----------|--|----------|---|----------|--|----------|---|----------|--|----------|--|----------|---|----------|--|----------|--|----------|--|----------|--|----------|-------------|--------|
| | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1964 | 0 | 2,803 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,803 | | |
| 1965 | 0 | 11,114 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,114 | | |
| 1966 | 0 | 16,742 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16,742 | | |
| 1967 | 0 | 26,912 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26,912 | | |
| 1968 | 0 | 37,760 | 0 | 3,876 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41,636 | | |
| 1969 | 0 | 47,461 | 0 | 10,448 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57,909 | | |
| 1970 | 0 | 53,198 | 0 | 13,145 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66,343 | | |
| 1971 | 0 | 62,898 | 0 | 13,145 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76,043 | | |
| 1972 | 0 | 67,974 | 1,260 | 13,112 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 81,086 | | |
| 1973 | 1,200 | 69,348 | 1,330 | 13,042 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,530 | | |
| 1974 | 3,000 | 69,532 | 1,400 | 12,969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,400 | | |
| 1975 | 5,000 | 69,366 | 1,475 | 12,893 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,475 | | |
| 1976 | 7,000 | 69,407 | 1,555 | 12,811 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,555 | | |
| 1977 | 10,200 | 69,323 | 1,635 | 12,727 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,835 | | |
| 1978 | 12,700 | 69,312 | 5,775 | 12,537 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18,475 | | |
| 1979 | 13,650 | 68,690 | 11,585 | 12,275 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25,235 | | |
| 1980 | 16,050 | 67,968 | 3,265 | 11,739 | 0 | 7,900 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19,315 | | |
| 1981 | 18,050 | 67,109 | 4,885 | 11,444 | 0 | 7,292 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22,935 | | |
| 1982 | 19,250 | 66,162 | 17,920 | 10,968 | 0 | 7,292 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37,170 | | |
| 1983 | 20,520 | 65,148 | 21,110 | 10,147 | 0 | 7,292 | 0 | 2,449 | 0 | 3,727 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42,530 | | |
| 1984 | 21,785 | 64,068 | 10,005 | 9,013 | 640 | 7,292 | 0 | 4,198 | 0 | 3,727 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33,385 | | |
| 1985 | 22,555 | 62,932 | 12,700 | 8,628 | 675 | 7,238 | 0 | 4,198 | 0 | 3,727 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46,365 | | |
| 1986 | 23,830 | 61,742 | 11,435 | 7,859 | 715 | 7,377 | 0 | 4,263 | 0 | 3,537 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42,095 | | |
| 1987 | 25,495 | 60,492 | 11,715 | 7,188 | 790 | 7,513 | 265 | 4,329 | 0 | 3,348 | 0 | 4,952 | 38,265 | 87,822 | 1,135 | 7,442 | 4,860 | 32,605 | 0 | 5,312 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45,565 | | |
| 1988 | 26,770 | 59,165 | 6,685 | 6,664 | 830 | 7,447 | 280 | 4,314 | 345 | 3,348 | 710 | 11,037 | 35,620 | 91,975 | 1,205 | 7,366 | 5,065 | 32,295 | 580 | 5,521 | 1,390 | 10,849 | 995 | 9,875 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44,855 |
| 1989 | 28,145 | 57,825 | 33,705 | 5,513 | 875 | 7,378 | 295 | 4,298 | 365 | 3,328 | 1,148 | 14,373 | 64,533 | 92,715 | 1,275 | 7,284 | 7,820 | 27,557 | 709 | 5,646 | 1,565 | 11,592 | 1,078 | 10,104 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76,980 |
| 1990 | 29,385 | 56,473 | 10,385 | 4,301 | 930 | 7,305 | 320 | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 13-11 Annual Debt Service on Bonds Sold through December 31, 2018 (in thousands of dollars)

2 of 2

| Calendar Year | Series A through Y Water Bonds | | Oroville Revenue Bonds ¹ | | Pyramid Project Revenue Bonds ² | | Alamo Project Revenue Bonds ² | | Small Hydro Project Revenue Bonds ² | | Water System Facilities Water System Revenue Bonds ³ | | Devil Canyon-Castaic Project Revenue Bonds | | Reid Gardner Project Revenue Bonds ^{2,3} | | South Geysers Project Revenue Bonds ² | | Bottle Rock Project Revenue Bonds ² | | East Branch Enlargement Project Water System Revenue Bonds ³ | | Coastal Branch Extension Facilities Water System Revenue Bonds | | East Branch Extension Facilities Water System Revenue Bonds ³ | | South Bay Enlargement Facilities Water System Revenue Bonds ³ | | Tehachapi East Afterbay Facilities Water System Revenue Bonds ³ | | Grand Total | | | |
|---------------|--------------------------------|------------------|-------------------------------------|----------------|--|----------------|--|----------------|--|---------------|---|------------------|--|------------------|---|----------------|--|----------------|--|----------------|---|----------------|--|----------------|--|---------------|--|----------------|--|----------------|---------------|---------------|------------------|------------------|
| | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | Principal | Interest | | | | |
| | 2018 | 25,435 | 3,011 | 0 | 0 | 4,661 | 1,094 | 2,720 | 694 | 2,442 | 547 | 70,157 | 67,783 | 105,415 | 73,129 | 6,910 | 2,045 | 0 | 0 | 0 | 0 | 0 | 0 | 22,883 | 10,248 | 1,572 | 936 | 11,246 | 15,790 | 7,487 | 2,557 | 2,215 | 158,070 | 112,007 |
| 2019 | 16,975 | 1,804 | 0 | 0 | 4,238 | 939 | 2,499 | 641 | 2,173 | 458 | 87,019 | 76,340 | 112,904 | 80,182 | 7,325 | 1,682 | 0 | 0 | 0 | 0 | 0 | 0 | 20,227 | 9,268 | 1,350 | 1,091 | 11,807 | 16,291 | 8,236 | 7,774 | 2,670 | 2,224 | 164,519 | 118,512 |
| 2020 | 17,405 | 956 | 0 | 0 | 5,259 | 733 | 3,139 | 518 | 2,713 | 343 | 89,404 | 71,823 | 117,920 | 74,373 | 7,765 | 1,298 | 0 | 0 | 0 | 0 | 0 | 0 | 20,848 | 8,234 | 1,789 | 998 | 13,323 | 15,579 | 8,102 | 7,377 | 2,770 | 2,080 | 172,517 | 109,939 |
| 2021 | 8,595 | 318 | 0 | 0 | 2,525 | 474 | 1,591 | 365 | 1,128 | 207 | 95,173 | 67,196 | 109,012 | 68,560 | 8,230 | 890 | 0 | 0 | 0 | 0 | 0 | 0 | 22,506 | 7,212 | 1,880 | 910 | 14,006 | 14,976 | 8,376 | 6,992 | 2,924 | 1,954 | 166,934 | 101,494 |
| 2022 | 1,885 | 59 | 0 | 0 | 5,005 | 350 | 4,702 | 287 | 1,185 | 152 | 94,019 | 62,531 | 106,796 | 63,379 | 8,725 | 458 | 0 | 0 | 0 | 0 | 0 | 0 | 22,458 | 6,116 | 2,623 | 817 | 14,623 | 14,300 | 8,776 | 6,588 | 3,128 | 1,811 | 167,129 | 93,469 |
| 2023 | 85 | 7 | 0 | 0 | 1,004 | 112 | 532 | 67 | 634 | 93 | 102,778 | 57,888 | 105,033 | 58,167 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18,494 | 5,015 | 1,904 | 688 | 14,736 | 13,592 | 9,390 | 6,160 | 3,345 | 1,656 | 152,902 | 85,278 | |
| 2024 | 35 | 2 | 0 | 0 | 638 | 64 | 361 | 41 | 423 | 63 | 104,886 | 52,128 | 106,343 | 52,298 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20,613 | 4,079 | 1,994 | 597 | 15,258 | 12,870 | 9,842 | 5,675 | 3,522 | 1,485 | 157,572 | 77,004 | |
| 2025 | 0 | 0 | 0 | 0 | 135 | 33 | 96 | 23 | 167 | 42 | 101,959 | 47,964 | 102,357 | 48,062 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25,067 | 3,098 | 1,615 | 501 | 15,968 | 12,120 | 10,162 | 5,230 | 3,609 | 1,317 | 158,778 | 70,328 | |
| 2026 | 0 | 0 | 0 | 0 | 141 | 26 | 101 | 18 | 183 | 34 | 100,461 | 42,331 | 100,886 | 42,409 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,075 | 1,837 | 1,724 | 424 | 17,209 | 11,336 | 11,619 | 4,707 | 4,367 | 1,133 | 144,880 | 61,846 | |
| 2027 | 0 | 0 | 0 | 0 | 376 | 19 | 268 | 13 | 262 | 26 | 112,896 | 37,350 | 113,802 | 37,408 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,825 | 1,396 | 1,727 | 344 | 21,202 | 10,490 | 12,759 | 4,132 | 4,890 | 916 | 164,205 | 54,686 | |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | 14 | 99,371 | 31,734 | 99,517 | 31,748 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,394 | 911 | 2,667 | 260 | 26,786 | 9,441 | 14,194 | 3,499 | 5,641 | 672 | 155,199 | 46,531 | |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 155 | 7 | 109,771 | 26,218 | 109,926 | 26,225 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,040 | 576 | 2,819 | 134 | 27,966 | 8,115 | 14,856 | 2,772 | 5,909 | 387 | 168,516 | 38,209 | |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83,457 | 21,513 | 83,457 | 21,513 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,315 | 258 | 0 | 0 | 21,301 | 6,738 | 8,022 | 2,061 | 387 | 97 | 114,482 | 30,667 | |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86,285 | 18,570 | 86,285 | 18,570 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,335 | 232 | 0 | 0 | 22,343 | 5,681 | 8,374 | 1,706 | 398 | 85 | 118,735 | 26,274 | |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90,352 | 14,616 | 90,352 | 14,616 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,395 | 175 | 0 | 0 | 23,591 | 4,573 | 8,771 | 1,300 | 416 | 66 | 124,525 | 20,730 | |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 93,783 | 11,041 | 93,783 | 11,041 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,435 | 133 | 0 | 0 | 24,729 | 3,434 | 6,815 | 900 | 438 | 51 | 127,200 | 15,559 | |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 97,496 | 7,327 | 97,496 | 7,327 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,480 | 90 | 0 | 0 | 27,134 | 2,240 | 7,155 | 598 | 455 | 34 | 133,720 | 10,289 | |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100,900 | 3,760 | 100,900 | 3,760 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,525 | 46 | 0 | 0 | 28,228 | 1,147 | 7,420 | 323 | 471 | 18 | 138,544 | 5,294 | |
| Total | 1,582,400 | 2,384,309 | 244,995 | 246,522 | 106,494 | 195,997 | 59,781 | 101,057 | 48,925 | 82,070 | 2,506,031 | 2,268,517 | 4,548,626 | 5,278,472 | 139,165 | 283,872 | 440,493 | 567,878 | 65,341 | 114,454 | 137,654 | 224,290 | 481,223 | 613,725 | 42,722 | 46,283 | 414,133 | 326,461 | 219,596 | 147,283 | 68,745 | 45,422 | 6,557,698 | 7,648,139 |

<sup

water bonds), power revenue bonds by project, and water system revenue bonds (Series A through AZ).

Lines 32 and 33, Payments on Projected Future Water Bonds, include the projected annual bond debt service amounts for future water revenue bonds included on Lines 23, 25, 27, and 29 of Table 13-1 for the East Branch Enlargement, East Branch Extension, SBA Enlargement, and other water system facilities. Assumptions about the bond debt service on these future bonds are that

- interest costs for the water revenue bonds average 3.15 percent; and
- bonds are to be repaid by the end of the project repayment period (2035) or sooner, with maturities commencing in the year following the date of sale and with equal annual bond debt service for the principal repayment period.

Lines 34 and 35, Total Payments of Bond Debt Service, show the total of principal payments indicated on Lines 30 and 32, and the total of interest repayments indicated on Lines 31 and 33.

Line 36, Subtotal, Bond Debt Service, is the total of Lines 34 and 35.

Line 37, Total Operating Expenses and Bond Debt Service, is the total of Lines 26, 27, 28, 29, and 36.

Line 38, Net System Revenues, shows the annual amounts of revenues remaining after the payment of operating costs and bond debt service costs.

Line 39, California Water Fund Repayment, shows the total amount of repayments made to the California Water Fund to reimburse the fund for monies expended for construction of the State Water Resources Development System.

Repayment of the California Water Fund was completed in 1998. The \$508 million includes the \$306 million of repayments shown in Line 39 and the \$202 million of reimbursement that was credited to the SWP as offsets for RFWE expenditures.

Line 40, Revenues Used for Capital Expenditures, includes the amounts required annually for financing scheduled capital expenditures. Revenues not needed for operating costs or bond debt services are available for financing SWP capital expenditures.

Table 13-12 Estimated Unit Water Charges for 2020 and 2025, by Service Area (in dollars per acre-foot)

| Service Area and Charge | 2020 (in 2020 dollars) | 2025 (in 2025 dollars) |
|---------------------------------|------------------------------|------------------------------|
| Feather River Area | | |
| Capital; OM&R | 527 | 573 |
| North Bay Area | | |
| Capital; OM&R | 480 | 531 |
| Power | 21 | 21 |
| Total | 501 | 552 |
| South Bay Area | | |
| Capital; OM&R | 372 | 423 |
| Power | 58 | 59 |
| Total | 430 | 482 |
| Coastal Area | | |
| Capital; OM&R | 1,253 | 1,364 |
| Power | 134 | 172 |
| Total | 1,387 | 1,536 |
| San Joaquin Area | | |
| Capital; OM&R | 212 | 232 |
| Power | 29 | 30 |
| Total | 241 | 262 |
| Southern California Area | | |
| Capital; OM&R | 407 | 451 |
| Power | 170 | 188 |
| Total | 577 | 639 |

Future Costs of Water Service

Estimates of future water costs are useful to contractors for short-range and long-range planning of water needs, operations, and budgets. Unit water charges shown in Table 13-12 represent estimated costs of water delivery by service area for calendar years 2020 and 2025. The unit rates include costs of existing and future SWP facilities accounted for in Table 13-1 and Table 13-7. The unit water charges are based on the assumption that in 2020 and 2025, the SWP will be able to deliver the entire amount of water requested by each contractor. The unit water charges included in Table 13-12 are listed both as 2020 dollars and as escalated rates reflecting assumed future inflation of 4.0 percent from 2020 through 2025.

Table 13-1 Capital Requirements and Financing, December 31, 2018 (in thousands of dollars)

| Line Number/Item | Calendar Year | | | | | | | | | | | | | | | | |
|---|------------------|----------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------|--------------|------------------|-------------------|---------|
| | 1952-2016 | 2017 | 2018 | 1952-2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2019-2028 | 1952-2028 | |
| CAPITAL REQUIREMENTS | | | | | | | | | | | | | | | | | |
| 1. Initial Project Facilities | 2,202,316 | 0 | 0 | 2,202,316 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,202,316 | |
| 2. North Bay Aqueduct | 116,410 | 230 | 146 | 116,787 | 0 | 76 | 4,052 | 1,810 | 0 | 0 | 0 | 0 | 0 | 0 | 5,938 | 122,725 | |
| 3. Delta & Suisun Marsh Facilities | 342,775 | 22,417 | 42,559 | 407,751 | 88,003 | 212,223 | 130,105 | 61,617 | 7,206 | 6,956 | 6,958 | 6,960 | 0 | 0 | 520,028 | 927,779 | |
| 4. Final 4 Units at Banks Delta Pumping Plant | 43,673 | 0 | 0 | 43,673 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43,673 | |
| 5. Coastal Branch Aqueduct | 518,275 | 2,198 | 2,282 | 522,754 | 4,720 | 4,348 | 3,661 | 3,823 | 1,117 | 2,305 | 900 | 1,395 | 0 | 0 | 22,269 | 545,023 | |
| 6. West Branch Aqueduct | 221,233 | 4,287 | 5,977 | 231,498 | 12,050 | 25,550 | 45,495 | 23,401 | 23,846 | 34,240 | 24,909 | 33,551 | 0 | 0 | 223,042 | 454,540 | |
| 7. East Branch Enlargement | 462,031 | 0 | 0 | 462,031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 462,031 | |
| 8. East Branch Improvements | 524,832 | 29,791 | 20,039 | 574,661 | 15,216 | 18,564 | 32,324 | 29,803 | 2,891 | 0 | 0 | 0 | 0 | 0 | 98,798 | 673,459 | |
| 9. East Branch Extension | 400,921 | 12,985 | 6,806 | 420,712 | 231 | 96 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 327 | 421,039 | |
| 10. South Bay Aqueduct Improvements and Enlargement | 274,086 | 598 | 453 | 275,138 | 100 | 80 | 1,680 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,890 | 277,028 |
| 11. Power Generation and Transmission Facilities | 880,635 | 9,300 | 2,151 | 892,085 | 44,721 | 6,550 | 8,362 | 2,080 | 1,770 | 12,049 | 0 | 0 | 0 | 0 | 75,532 | 967,616 | |
| 12. Additional Conservation Facilities | 172,933 | 2,857 | 2,407 | 178,196 | 3,272 | 3,272 | 3,272 | 3,272 | 3,272 | 3,272 | 3,272 | 3,272 | 3,272 | 3,272 | 32,720 | 210,916 | |
| 13. Agricultural Drainage Facilities | 87,887 | 1,094 | 1,105 | 90,086 | 1,766 | 1,766 | 1,766 | 1,766 | 1,766 | 1,766 | 1,766 | 1,766 | 1,766 | 1,766 | 17,660 | 107,746 | |
| 14. Other Costs | 866,273 | 219,587 | 278,079 | 1,363,939 | 232,432 | 152,740 | 201,727 | 260,427 | 150,477 | 107,524 | 97,560 | 78,729 | 0 | 0 | 1,281,616 | 2,645,554 | |
| 15. Total Project Construction Expenditures | 7,114,280 | 305,344 | 362,003 | 7,781,626 | 402,510 | 425,265 | 432,444 | 388,029 | 192,345 | 168,112 | 135,365 | 125,673 | 5,038 | 5,038 | 2,279,819 | 10,061,445 | |
| 16. Davis-Grunsky Act Program Costs | 130,000 | 0 | 0 | 130,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130,000 | |
| 17. Special Capital Requirements Under Revenue Bond Financing | 558,507 | 0 | (28,272) | 530,234 | 30,733 | 33,579 | 34,328 | 30,969 | 15,170 | 13,162 | 10,523 | 9,706 | 0 | 0 | 178,170 | 708,404 | |
| 18. Total Capital Requirements | 7,802,786 | 305,344 | 333,731 | 8,441,860 | 433,243 | 458,844 | 466,772 | 418,998 | 207,515 | 181,274 | 145,888 | 135,379 | 5,038 | 5,038 | 2,457,989 | 10,899,850 | |
| 19. Power Facilities Capital Requirements | 880,635 | 9,300 | 2,151 | 892,085 | 44,721 | 6,550 | 8,362 | 2,080 | 1,770 | 12,049 | 0 | 0 | 0 | 0 | 75,532 | 967,616 | |
| 20. Water Facilities Capital Requirements | 6,922,152 | 296,044 | 331,580 | 7,549,776 | 388,522 | 452,294 | 458,410 | 416,918 | 205,745 | 169,225 | 145,888 | 135,379 | 5,038 | 5,038 | 2,382,458 | 9,932,233 | |
| FINANCING OF CAPITAL REQUIREMENTS | | | | | | | | | | | | | | | | | |
| Power Facilities Revenue Bond Proceeds | | | | | | | | | | | | | | | | | |
| 21. Power Facilities Revenue Bonds through Series H | 1,162,458 | 0 | 0 | 1,162,458 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,162,458 | |
| Water System Revenue Bond Proceeds | | | | | | | | | | | | | | | | | |
| 22. East Branch Enlargement, Current Bonds | 482,639 | 0 | 0 | 482,639 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 482,639 | |
| 23. East Branch Enlargement, Future Bonds | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 24. East Branch Extension, Current Bonds | 411,920 | 0 | 3,555 | 415,475 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 415,475 | |
| 25. East Branch Extension, Future Bonds | 0 | 0 | 0 | 0 | 249 | 104 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 353 | 353 | |
| 26. South Bay Aqueduct Enlargement, Current Bonds | 224,418 | 0 | 415 | 224,833 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 224,833 | |
| 27. South Bay Aqueduct Enlargement, Future Bonds | 0 | 0 | 0 | 0 | 108 | 87 | 1,817 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 2,044 | 2,044 | |
| 28. Water System Facilities, Current Bonds | 2,386,834 | 0 | 364,475 | 2,751,309 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,751,309 | |
| 29. Water System Facilities, Future Bonds | 0 | 0 | 0 | 0 | 536,642 | 604,154 | 640,456 | 524,465 | 233,015 | 196,774 | 151,388 | 120,879 | 10,538 | 1,076 | 3,019,387 | 3,019,387 | |
| 30. Subtotal, Water System Revenue Bonds | 3,505,812 | 0 | 368,445 | 3,874,257 | 536,999 | 604,344 | 642,272 | 524,498 | 233,015 | 196,774 | 151,388 | 120,879 | 10,538 | 1,076 | 3,021,783 | 6,896,040 | |
| Other Capital Financing | | | | | | | | | | | | | | | | | |
| 31. Initial Project Facilities Bond Proceeds | 1,452,452 | 0 | 0 | 1,452,452 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,452,452 | |
| 32. Davis-Grunsky Act Program Bond Proceeds | 130,000 | 0 | 0 | 130,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130,000 | |
| 33. Application of CA Water Fund Monies (Tideland Oil Revenues) | 508,056 | 0 | 0 | 508,056 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 508,056 | |
| 34. Interim Financing | 347,331 | 300,739 | (39,276) | 608,794 | (108,256) | (150,000) | (180,000) | (110,000) | (30,000) | (20,000) | (10,000) | 10,000 | (10,000) | (538) | (608,794) | 0 | |
| 35. Direct Pay | 7,918 | 105 | 62 | 8,085 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,085 | |
| 36. Application of Capital Resources Revenues to Construction | 566,269 | 0 | 0 | 566,269 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 566,269 | |
| 37. Revenue Transfers Applied | 122,490 | 4,500 | 4,500 | 131,490 | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 | 45,000 | 176,490 | |
| 38. Subtotal, Other Capital Financing | 3,134,517 | 305,344 | (34,714) | 3,405,146 | (103,756) | (145,500) | (175,500) | (105,500) | (25,500) | (15,500) | (5,500) | 14,500 | (5,500) | 3,96 | | | |

Table 13-2 State Water Project Revenues and Expenditures, December 31, 2018 (in thousands of dollars)

| Line Number/Item | Calendar Year | | | | | | | | | | | | | | | |
|--|-------------------|------------------|------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|
| | 1952-2016 | 2017 | 2018 | 1952-2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2019-2028 | 1952-2028 |
| PROJECT REVENUES | | | | | | | | | | | | | | | | |
| 1. Capital Resources Revenues | 814,701 | 0 | 0 | 814,701 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 814,701 | |
| Water Contractor Payments | | | | | | | | | | | | | | | | |
| 2. Transportation Capital | 5,335,825 | 186,299 | 182,074 | 5,704,198 | 176,932 | 174,645 | 173,004 | 183,025 | 180,368 | 178,064 | 176,831 | 175,754 | 174,887 | 174,129 | 1,767,639 | 7,471,837 |
| 3. Transportation Minimum | 4,948,163 | 242,075 | 263,000 | 5,453,238 | 304,425 | 299,885 | 302,376 | 305,652 | 306,123 | 309,184 | 312,276 | 315,398 | 318,552 | 321,738 | 3,095,609 | 8,548,847 |
| 4. Transportation Variable | 6,556,364 | 395,515 | 281,374 | 7,233,253 | 275,138 | 292,735 | 296,699 | 315,935 | 303,000 | 298,849 | 306,963 | 293,854 | 304,642 | 298,454 | 2,986,270 | 10,219,522 |
| 5. Off-Aqueduct Power Facilities | 2,988,172 | 3,342 | 2,403 | 2,993,916 | 3,580 | 6,650 | 10,650 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 21,930 | 3,015,846 |
| 6. Delta Water Charge | 3,913,024 | 287,401 | 289,879 | 4,490,305 | 292,456 | 340,503 | 340,503 | 340,503 | 340,503 | 340,503 | 340,503 | 340,503 | 340,503 | 340,503 | 3,356,984 | 7,847,289 |
| 7. East Branch Enlargement | 877,121 | 47,069 | 45,935 | 970,126 | 48,662 | 47,269 | 48,759 | 47,329 | 40,997 | 42,477 | 46,818 | 25,252 | 25,638 | 20,743 | 393,944 | 1,364,069 |
| 8. East Branch Extension | 241,980 | 35,542 | 38,691 | 316,213 | 42,089 | 45,329 | 44,513 | 44,469 | 43,808 | 43,641 | 43,677 | 44,333 | 48,354 | 54,111 | 454,324 | 770,537 |
| 9. Coastal Extension | 64,826 | 4,349 | 3,136 | 72,310 | 3,051 | 3,484 | 3,488 | 4,299 | 3,241 | 3,238 | 2,645 | 2,685 | 2,589 | 3,658 | 32,379 | 104,689 |
| 10. South Bay Aqueduct Enlargement | 122,205 | 18,844 | 18,846 | 159,896 | 19,983 | 19,349 | 19,211 | 19,205 | 19,438 | 19,396 | 19,240 | 20,408 | 21,114 | 22,116 | 199,459 | 359,355 |
| 11. Tehachapi East Afterbay | 52,310 | 6,232 | 5,970 | 64,513 | 6,118 | 6,098 | 6,136 | 6,212 | 6,290 | 6,299 | 6,197 | 6,916 | 7,298 | 7,932 | 65,497 | 130,009 |
| 12. Water Revenue Bond Surcharge | 823,961 | 41,778 | 80,571 | 946,311 | 107,903 | 78,961 | 81,899 | 80,588 | 81,900 | 80,113 | 76,694 | 73,361 | 76,889 | 67,861 | 806,169 | 1,752,480 |
| 13. Subtotal, Water Contractor Payments | 25,923,953 | 1,268,446 | 1,211,879 | 28,404,278 | 1,280,338 | 1,314,909 | 1,327,240 | 1,347,367 | 1,325,816 | 1,321,914 | 1,331,994 | 1,298,614 | 1,320,616 | 1,311,395 | 13,180,203 | 41,584,481 |
| 14. Revenue Bond Cover Adjustments | (1,115,838) | (55,410) | (54,379) | (1,225,627) | (62,414) | (64,033) | (62,853) | (62,622) | (59,776) | (58,868) | (57,551) | (51,936) | (54,977) | (50,687) | (585,717) | (1,811,344) |
| 15. Rate Management Adjustments | (583,032) | (40,470) | (40,479) | (663,982) | (40,471) | (40,471) | (40,471) | (40,471) | (40,471) | (40,471) | (40,471) | (40,471) | (40,471) | (40,471) | (404,708) | (1,068,689) |
| Other Revenues | | | | | | | | | | | | | | | | |
| 16. Federal Payments for Project Operating Costs | 432,794 | 17,195 | 20,443 | 470,432 | 21,657 | 21,657 | 21,657 | 21,657 | 21,657 | 21,657 | 21,657 | 21,657 | 21,657 | 216,573 | 687,005 | |
| 17. Appropriations for Operating Costs Allocated to Recreation | 48,182 | 12,326 | 7,500 | 68,009 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 100,000 | 168,009 |
| 18. Davis-Grunsky Loan Repayments | 77,547 | 1,214 | 1,114 | 79,875 | 861 | 887 | 880 | 880 | 865 | 786 | 723 | 689 | 606 | 564 | 7,742 | 87,617 |
| 19. Revenue Bond Proceeds | 652,977 | 0 | 0 | 652,977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 652,977 |
| 20. Interest Earnings on Operating Revenues | 578,735 | 3,099 | 6,181 | 588,015 | 4,640 | 4,640 | 4,640 | 4,640 | 4,640 | 4,640 | 4,640 | 4,640 | 4,640 | 4,640 | 46,400 | 634,415 |
| 21. Oroville-Thermalito Payments | 249,279 | 0 | 0 | 249,279 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 249,279 |
| 22. Miscellaneous Revenues | 184,264 | 0 | 0 | 184,264 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 184,264 |
| 23. Subtotal, Other Revenues | 2,223,778 | 33,835 | 35,237 | 2,292,850 | 37,159 | 37,184 | 37,177 | 37,177 | 37,162 | 37,083 | 37,020 | 36,987 | 36,904 | 36,862 | 370,715 | 2,663,565 |
| 24. Total Operating Revenues | 26,448,861 | 1,206,400 | 1,152,258 | 28,807,519 | 1,214,613 | 1,247,589 | 1,261,093 | 1,281,452 | 1,262,731 | 1,259,659 | 1,270,993 | 1,243,194 | 1,262,072 | 1,257,099 | 12,560,494 | 41,368,013 |
| 25. Total Operating Revenues and Capital Resources Revenues | 27,263,562 | 1,206,400 | 1,152,258 | 29,622,220 | 1,214,613 | 1,247,589 | 1,261,093 | 1,281,452 | 1,262,731 | 1,259,659 | 1,270,993 | 1,243,194 | 1,262,072 | 1,257,099 | 12,560,494 | 42,182,714 |
| PROJECT EXPENSES | | | | | | | | | | | | | | | | |
| 26. Project Operations, Maintenance, Power, and Replacement Costs | 15,337,315 | 807,760 | 764,072 | 16,909,148 | 794,482 | 801,392 | 807,143 | 836,023 | 807,216 | 810,151 | 819,456 | 815,424 | 824,973 | 830,059 | 8,146,321 | 25,055,469 |
| 27. Deposits to Replacement Reserves | 103,174 | 9,426 | 2,613 | 115,213 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115,213 |
| 28. Deposits to Special Reserves Under Revenue Bond Financing | 573,187 | 90,296 | 110,996 | 774,479 | 66,463 | 51,003 | 21,609 | (36,522) | (53,809) | (79,832) | (93,778) | (113,049) | (131,518) | (125,926) | (495,360) | 279,119 |
| 29. Capital Resources Expenditures | 686,932 | 0 | 0 | 686,932 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 686,932 |
| Payments of Bond Debt Service | | | | | | | | | | | | | | | | |
| 30. Principal Repayments on Bonds Sold Through December 31, 2015 (Current Bonds) | 3,694,033 | 175,238 | 158,070 | 4,027,341 | 164,519 | 172,517 | 166,934 | 167,129 | 152,902 | 157,572 | 158,778 | 144,880 | 164,205 | 155,199 | 1,604,635 | 5,631,976 |
| 31. Interest on Bonds Sold Through December 31, 2015 (Current Bonds) | 6,449,665 | 119,180 | 112,007 | 6,680,852 | 118,512 | 109,939 | 101,494 | 93,469 | 85,278 | 77,004 | 70,328 | 61,846 | 54,686 | 46,531 | 819,087 | 7,499,939 |
| 32. Future Water Bond Principal Repayments | 0 | 0 | 0 | 0 | 41,358 | 69,581 | 103,667 | 143,891 | 181,436 | 203,167 | 224,540 | 244,448 | 263,688 | 272,877 | | |



Chapter 14

SWP Education and Information

Department of Water Resources staff help kids prepare water-efficient plants during Kids Day at the California State Fair in Sacramento.

Significant Events in 2018

The California Department of Water Resources (DWR) reached a public safety milestone with the completion of phase II of the Oroville Dam Spillways Reconstruction Project on November 1, 2018. The Public Affairs Office (PAO) provided regular briefings and community information sessions to communicate about the emergency response and subsequent recovery effort while maintaining a dynamic web page that included images.

PAO also provided updates on the effects of the Camp Fire in Butte County on the Oroville-Thermalito Complex; the Sustainable Groundwater Management Act; State Water Project (SWP) allocations; the Perris Dam Remediation Project; and organized press conferences for DWR's snow surveys at Phillips Station near Lake Tahoe and broadcast the surveys via Facebook Live video.

In February 2018, DWR launched a fully redesigned public website (water.ca.gov). PAO manages all content on the public website, including text, photos, and videos.

As of September 2018, DWR's Facebook page had 35,500 followers, the Twitter page had 19,700, and the Instagram page had 1,400 followers.

Through the School Education Program, PAO interacted with more than 3,000 children, teachers, and family members, and provided approximately 50,000 materials to educators throughout California.

Information for this chapter was provided by the Public Affairs Office.

The Department of Water Resources' (DWR) Public Affairs Office (PAO) produces and distributes news and program information describing California's water resources and DWR's mission, programs, and activities. PAO disseminates information by way of news releases, interviews, digital articles, brochures, and other printed and electronic communications. Additional avenues of communication include videos, graphics, exhibits, press conferences, photography, public meetings, social media, and special events.

News Topics

In 2018, PAO staff participated in several outreach efforts and news media responses related to SWP policy, programs, events, and activities.

Oroville Spillways Recovery

With the completion of phase II of the Oroville Dam Spillways Reconstruction Project, the uppermost 730 feet of the original main spillway chute was demolished and rebuilt. PAO provided regular briefings and community information sessions to communicate about the emergency response and subsequent recovery effort. PAO also developed and maintained a dynamic web page for the reconstruction project that included images documenting the emergency response and recovery efforts. Video and drone footage of all phases of the project were available on DWR's YouTube page.

Oroville-Thermalito Complex

In summer 2018, DWR and the California Department of Parks and Recreation offered free day use and boat launching at Lake Oroville State Recreation Area. In response to the Camp Fire in Butte County, two news releases were sent in November about the Oroville-Thermalito Complex impacts and closures of Lake Oroville State Recreation Area. Construction on the Lake Oroville Marina at Lime Saddle began in December.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act, passed in 2014, provides a framework for groundwater management and empowers local groundwater sustainability agencies to create 20-year plans to manage their groundwater for long-term sustainability. In 2018, DWR conducted basin boundary modifications requested for technical or jurisdictional reasons. Following this, DWR conducted another round of basin prioritization to identify which basins would be required to create groundwater sustainability plans. PAO provided communications for these efforts and informational public meetings that DWR hosted throughout the state.

Snow Surveys

After a historic 2017, which brought a record amount of precipitation to the northern Sierra Nevada and the second most precipitation statewide, 2018 began with precipitation and snowpack below average. Public and media interest about Sierra Nevada snowpack conditions continued in 2018. Multiple media outlets attended DWR's snow surveys at Phillips Station near Lake Tahoe. PAO organized press conferences, broadcast the surveys via Facebook Live video, and shared snow survey results on DWR's website and various social media platforms.

Late season atmospheric rivers increased precipitation in the northern Sierra Nevada to 90 percent of average. However, the

Sierra snowpack ended the year well below average, peaking on March 30 at 56 percent of average with a snow water content of 15.7 inches.

SWP Allocations

On November 30, 2017, DWR announced an initial allocation of 15 percent for 2018 for the 29 SWP Contractors that collectively serve more than 27 million Californians and about 750,000 acres of irrigated farmland. DWR announced an increase to 20 percent on January 29, and the final allocation at 35 percent on May 21. PAO distributed news releases for each allocation announcement and responded to media and public requests.

Perris Dam Remediation Project

Perris Dam's remediation of one of three major projects to improve seismic stability and enhance public safety was completed in 2018. In April, PAO distributed a news release and social media messaging and responded to the media and public. As part of the remediation project, a 49.3-acre restoration project along three miles of a multi-use trail was completed, and PAO issued a news release in October.

Algal Blooms at SWP Reservoirs

Algal bloom advisories changed from caution to danger at Pyramid Lake in Los Angeles County and San Luis Reservoir in Merced County. PAO responded to media and public inquiries and distributed news releases and social media messaging.

News Media

Publications

Brochures

PAO creates and maintains more than 40 brochures about the SWP and DWR. They are distributed to the public and others at events throughout California. Digital copies are also available.

The *East Branch Extension* brochure was created in 2018, and the *SWP at a Glance* brochure was updated.

PAO also prepared Spanish translations for several materials on topics including the Sustainable Groundwater Management Act, SWP visitors centers, flood preparedness, water conservation, SWP recreation, algal bloom awareness, and water education.

DWR Magazine

DWR Magazine went from publishing three times a year to twice a year. This news magazine features articles describing DWR programs, staff, and activities. Articles highlighted the Oroville Dam Spillways Reconstruction Project, the East Branch Extension project completion, Perris Dam's seismic remediation, the 50-year dedication ceremony of Oroville Dam, new technologies aiding native fish species in the Sacramento-San Joaquin Delta, the Dutch Slough Tidal Marsh Restoration Project, and DWR visitors center guides.

Digital Resources

E-News

Each weekday, PAO compiles and electronically distributes news articles, digital articles, and commentaries on water-related issues to more than 5,000 subscribers. These news clips inform DWR staff, water managers, other stakeholders, and interested members of the public of current issues relevant to DWR and its programs.

Topics highlighted in the weekday news clips include water supply, water quality, climate change, drought, watershed programs, activities of other water-related agencies and groups, and relevant legislation.

DWR Updates

As part of a fully redesigned public website launched in 2018, Spotlight Stories were rebranded as DWR Updates. The DWR Updates section on the public website consists of digital articles highlighting news and updates related to the SWP. Article topics included DWR's Operations and Maintenance Apprentice Program, the signing of the Coordinated Operations Agreement's addendum, Catch A Special Thrill events, DWR snow surveys, SWP allocations, water safety and recreation, reservoir conditions, and SWP awards.

Social Media

DWR's social media presence includes Facebook, Twitter, Instagram, and YouTube. DWR increased its social media presence through continued engagement with followers on each platform, using more multimedia—graphics, videos, photos—and identifying stakeholders that amplify content on their own social media channels. As of September 2018, DWR's social media channels had the following number of followers:

- Facebook: 35,500
- Twitter: 19,700
- Instagram: 1,400

PAO posts multiple messages on Facebook, Twitter, Instagram, and YouTube about various DWR projects, including the SWP, along with updates and activities of interest to the public and DWR employees.

Photography and Videos

Several SWP facilities were documented by PAO's photography and video units. Some videos posted to DWR's YouTube and photos posted to DWR's Pixel website included the East Branch Extension completion and Oroville Dam Spillways Reconstruction Project. DWR photography also highlighted

the Perris Dam Remediation Project and California Aqueduct repair in May.

Website

In February 2018, DWR launched a fully redesigned public website. PAO manages all content on the public website, including text, photos, and videos. PAO advised DWR department programs on page layout, edited text, and selected photos for SWP program pages.

PAO created new pages for SWP history and recreation, updated the page for the Perris Dam Remediation Project, and updated the text for the main SWP page.

Community Relations and Outreach

In 2018, PAO continued to educate the public about water, water conservation, and the SWP by attending several events.

California State Fair

In July 2018, DWR participated in the California State Fair and showcased water conservation in various exhibits. The outdoor exhibits displayed drought-tolerant plants, as well as fruits, vegetables, and herbs that require minimal water.

DWR Tours Program

DWR's tours program regularly attracts international and domestic groups interested in touring SWP facilities and learning about California's water system. In 2018, DWR hosted a delegation of a dozen Japanese water officials in Sacramento to learn more about the reconstruction of the Oroville Dam spillways.

SWP Visitors Centers

DWR's three visitors centers at Lake Oroville, San Luis Reservoir, and Pyramid Lake house exhibits and information related to the SWP

and DWR's mission by engaging visitors with current and future water issues. DWR also provides the public with information on water safety and recreational opportunities at SWP facilities. Figure 14-1 shows the SWP visitors center locations.

DWR worked closely with partners and stakeholders to advance long-range interpretation master plans for DWR's visitors centers, focusing on Lake Oroville's visitors center first. The plans provide recommendations to meet the current needs of Lake Oroville's visitors center and visitors. Additionally, the plans will guide the development of new exhibits.

SWP Recreation Outreach Events

The goal of the SWP recreation outreach program is to educate the public about water safety and the many recreational opportunities available at SWP facilities. As part of this outreach effort, PAO attends community events, state and county fairs, and state and federally sponsored events. PAO also forms partnerships with state, federal, and community groups.

In 2018, PAO continued to educate the public about water, water conservation, and the SWP by attending the following events:

- Ag Day, Los Banos
- Amador County Farm Day
- California Agriculture Day
- California Native American Day, Sacramento
- California State Fair, Sacramento
- California Day of Preparedness, Sacramento
- Catch A Special Thrill events at Pyramid Lake, Bethel Island, O'Neill Forebay, and Castaic Lake
- Earth Day, Sacramento
- Farm to Factory, Los Banos
- Flood Preparedness Week events, Sacramento

- Governor's Office of Emergency Services National Preparedness Month
- Healthy Kids Day, Oroville
- Hooked on Fishing, Not on Drugs, Oroville
- Oroville Salmon Festival
- Oroville Feather Fiesta Days
- Parade of Lights, Oroville
- World Ag Expo, Tulare

School Education Program

DWR's School Education Program supplies educators with resources that help them provide instruction about California's water resources. PAO works with other offices in DWR and partners with outside agencies and organizations to develop and promote high-quality educational materials as well as provide professional development support for teachers. These materials are provided at no charge to California schools, educators, and water districts. PAO staff also attend large events for school children. Program achievements for 2018 are described below.

School Events and Educator Outreach

In 2018, PAO and Integrated Regional Water Management staff interacted with more than 3,000 children, teachers, and family members, and provided materials at multiple events, including:

- San Joaquin County AgVenture, Stockton, Lodi, and Manteca
- State Scientist Day, Sacramento
- Children's Water Education Festival, Orange County
- California Native American Heritage Day, Sacramento
- Farm Day, Ceres
- California Science Teachers Association Annual Conference, Sacramento

As in previous years, PAO recruited a team of DWR judges from multiple divisions to judge



Figure 14-1 Visitors Centers on the SWP

and provide a special award for the best water resources project at the Sacramento Regional Science and Engineering Fair.

PAO staff also represented DWR at educator conferences hosted by the California Science Teachers Association and California Council for Social Studies. At both conferences, PAO had a table in the exhibit hall at which teachers could learn about DWR's resources and take samples with them back to their classrooms. DWR also presented at both conferences on using California's water resources to teach about climate change and, at California Science Teachers Association, with other State agencies on the resources available to teachers.

Supplementary Teaching Materials

The School Education Program provides supplementary teaching materials including posters, maps, worksheets, workbooks, and videos. California teachers, water agencies, and other non-formal educators can order these through the *Water Facts & Fun* online catalog or receive them at outreach events.

In 2018, approximately 50,000 materials were sent to educators throughout California.

A new poster on the topic of climate change and its impact on California water, primarily geared toward high school students, was developed in 2018. DWR also began a collaboration with the Metropolitan Water District of Southern California (Metropolitan) to develop a virtual tour of the SWP, similar to Metropolitan's previous tour of the Colorado River system.

Collaboration and Partnerships

DWR's School Education Program collaborates with other entities with similar interests and goals to pool resources in educating California's youth on the importance of water resources. During

2018, PAO staff participated in the following collaborative activities/meetings:

- California Project Water Education for Teachers (WET) Program Advisory Committee
- California Department of Education's California Environmental Education Interagency Network Committee
- Water Education Committee meetings, hosted by the Soquel Creek Water District and Water Replenishment District of Southern California
- Creek Week Planning Committee
- Caring for Our Watersheds contest, sponsored by Agrium Inc. and the Center for Land-Based Learning
- National Network for Ocean and Climate Change Interpretation Governing Council

Additional collaborative efforts included PAO staff, financial, or staff and financial assistance for the following programs:

- California Department of Education's California Regional Environmental Education Community Network
- California Environmental Education Foundation Teacher Institute
- California Project WET program
- Floodplain and Delta Ecology Institute for teachers, co-sponsored with the San Joaquin County Office of Education
- Sacramento River Floodplain Ecology Institute for teachers, co-sponsored with California State University, Chico
- Central Valley Floodplain Ecology Institute for educators, co-sponsored with the SAM Academy and the Central Valley Science Project, California State University, Fresno
- Sacramento Floodplain Ecology Institute, co-sponsored with the Yolo County Office of Education
- Delta Studies Institute for teachers, co-sponsored with the San Joaquin County Office of Education

Glossary

This glossary contains terms used in the text of Bulletin 132-19 as well as additional terms related to water resources.

A

abundance The number of organisms of a particular kind in a population. (See also, abundance index.)

abundance index (fisheries) A relative measure of the weight or number of fish in a stock, a segment of the stock (e.g., the spawners), or an area. Often available in time series, the information is collected through scientific surveys or inferred from fishery data.

acre-foot The volume of water that would cover one acre to a depth of one foot; equal to 43,560 cubic feet or 325,851 gallons.

actinospores One of two life stages of myxozoan parasites. This life stage is released into the water column from infected polychaete worms and infect fish such as salmon. See myxozoan.

adaptive management The process of improving management effectiveness by learning from the results of carefully designed decisions or experiments.

afterbay A storage reservoir downstream of a power plant or large reservoir that regulates fluctuating discharges from a spillway, hydroelectric power plant, or a pumping plant.

agricultural drainage (1) The process of directing excess water away from root zones by natural or artificial means, such as by using a system of drains placed below ground surface level (also called subsurface drainage); (2) the water drained away from irrigated farmland.

alluvial fan The alluvial deposit of a stream where it issues from a gorge upon a plain or of a tributary stream at its junction with the main stream.

alluvium Unconsolidated soil strata deposited over time by flowing water.

amphipod A small crustacean with a flat (laterally compressed) body belonging to the group Amphipoda, found in both marine and freshwater environments.

anadromous Fish that live the majority of their life cycle in the sea and return to freshwater streams to spawn.

anion An atom or a molecule in which the total number of electrons is greater than the total number of protons, giving it a net negative electrical charge.

arroyo (1) A watercourse (such as a creek) in an arid region; (2) a water-carved gully or channel.

arsenic A solid substance (metalloid) naturally existing in the Earth's crust and in crushed rock. It is highly toxic in its inorganic form. Higher levels of arsenic tend to be found in groundwater (aquifers) as compared to surface waters (e.g., lakes and rivers).

atmospheric river A short-lived, narrow stream of high-velocity wind that carries large amounts of water vapor from tropical oceans to mid-latitude land areas resulting in large amounts of precipitation in those areas.

B

Bay-Delta Plan Formerly known as the San Francisco Bay/Sacramento-San Joaquin Delta Estuary Water Quality Control Plan, it establishes water quality control measures and flow requirements needed to provide reasonable protection of beneficial uses in the Bay-Delta watershed. The State Water Resources Control Board is responsible for adopting and updating the Bay-Delta Plan.

beneficial use Water quality beneficial use categories for water are designated by State law. Beneficial uses of the waters of the State that may be protected against water quality degradation include, but are not limited to, domestic, municipal, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

benthic organisms Aquatic animals without backbones that dwell on or in the bottom sediments of fresh or salt water.

berm A narrow shelf, path, or ledge typically at the top or bottom of a slope; also, a mound or wall of earth or sand.

biological assessment A document prepared as part of the Endangered Species Act, Section 7 process to determine whether a proposed major construction activity under the authority of a federal action agency is likely to adversely affect listed species, proposed species, or designated critical habitat.

biological opinion A scientific assessment issued by the U.S. Fish and Wildlife Service or National Marine Fisheries Service, required by the Endangered Species Act for listed species. Determines the likelihood of a

federal action to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

biota Living organisms of a region, as in a stream or other body of water.

brackish water Water containing dissolved minerals in amounts that exceed normally acceptable standards for municipal, domestic, and irrigation uses. It contains considerably less saline than seawater.

bromide A salt which naturally occurs in small quantities in seawater; a compound of bromine.

Burns-Porter Act (California Water Code Section 12930 et seq.) Formally known as the California Water Resources Development Bond Act, this act passed the Legislature in 1959 and was approved by voters in 1960. It provided initial funding of \$1.75 billion in general obligation bonds and authorized construction of the State Water Project facilities.

butterfly valve A device that controls the passage of water through pipelines. Valves are important for water infrastructure because they act as the primary line of defense when there is an issue in the pipeline and water flow needs to be isolated to prevent effects on adjacent infrastructure. A butterfly valve is distinguished from other types of valves by its closing mechanism, which is a disk that rotates. See Chapter 11 (Engineering, Construction, and Real Estate) for a photo of a butterfly valve.

bypass As part of a flood management system, a natural overflow area or channel that allows excessive floodwaters to flow or be diverted from a main river channel to prevent water from overflowing the main river channel.

C

CALFED Bay-Delta Program (CALFED) A federal and State multiagency program established by the 1994 Bay-Delta Accord. CALFED's mission was to develop and implement a long-term comprehensive plan that would restore ecological health and improve water management in the Bay-Delta system. In 2010, all functions and responsibilities of CALFED were assumed by the Delta Stewardship Council.

California Environmental Quality Act (California Public Resources Code Section 21000 et seq.) Passed by the Legislature in 1970 shortly after the United States federal government passed the National Environmental Policy Act, this act codified a statewide policy of environmental protection.

California WaterFix An infrastructure project that would include constructing two tunnels to convey water from the north to the south Delta. The purpose of California WaterFix is to modernize water infrastructure and

provide a secure and reliable source of water to meet the needs of farmers and communities, while including measures to address the needs of fish and wildlife.

case-in-chief The portion of a trial whereby the party with the burden of proof in the case presents its evidence. The term differs from a rebuttal, whereby a party seeks to contradict the other party's evidence.

cation An atom or a molecule in which the total number of protons is greater than the total number of electrons, giving it a net positive electrical charge.

chloride (1) A compound of chlorine with another element or group, especially a salt or ester of hydrochloric acid; (2) a monovalent anion consisting of one atom of chlorine. Chloride is one of the most common anions found in tap water. It generally combines with calcium, magnesium, or sodium to form various salts: for example, sodium chloride (NaCl) is formed when chloride and sodium combine.

chlorophyll α One of the main groups of pigments contained in the algal species that make up phytoplankton.

chrysophyte flagellates Dominating the phytoplankton community in many water bodies that have low levels of nutrients, chrysophyte flagellates may have one or two flagella.

circuit breaker A switch that automatically interrupts the current of an overloaded electric circuit.

climate change Any significant change in the measures of climate lasting for an extended period of time. This includes major changes in temperature, precipitation, or wind patterns, among other things, that occur over several decades or longer.

conduit exemptions In certain cases, projects may qualify for an exemption from Federal Energy Regulatory Commission licensing. Those receiving an exemption are exempt from the requirements of Part I of the Federal Power Act.

conjunctive use Application of surface water and groundwater to meet the demand for a beneficial use. Coordinated and planned management of both surface water and groundwater resources to maximize the efficient use of the resources; that is, the planned and managed operation of a groundwater basin and a surface water storage system combined through a coordinated conveyance infrastructure. Water is stored in the groundwater basin for later planned use by intentionally recharging the basin during years of above-average surface water supply.

conservation facilities Reservoir facilities that store water and make it available for later use.

consultation The process required of a federal agency under Section 7 of the Endangered Species Act when any activity authorized, carried out, or conducted by that agency may affect a listed species or designated critical habitat; consultation is with the U.S. Fish and Wildlife Service or National Marine Fisheries Service and may be either informal or formal.

conveyance Provides for the movement of water and includes the use of natural watercourses and constructed facilities including open channels, pipelines, diversions, fish screens, distribution systems, and pump lifts.

conveyance facilities Canals, pipelines, pump lifts, ditches, etc., used to move water from one area to another.

Cormack-Jolly-Seber model A type of capture-recapture model used to estimate abundance/population size and survival.

creel survey A creel is a wicker basket to hold fish: an angler's fishing basket. A creel survey is a sampling tool used to measure the fishing activities of sport anglers and to estimate the number of fish harvested from a body of water. It involves interviewing anglers about the day's fishing effort, including what the angler caught, released, how much time was spent fishing, and sometimes measuring fish and counting boats or watercraft.

crop idling Removing lands from irrigation with the aim of returning the lands to irrigation later. Crop idling may be done once or can be episodic.

cryptophyte A plant that produces its buds underwater (such as algae) or underground on corms, bulbs, or rhizomes.

cryptophyte flagellates Single-celled algae that have two flagella used for swimming. The cryptophytes are single-celled flagellates and have pigments found in no other group of algae (phycoerythrin and phycocyanin). Pigments are structures that absorb light and include the pigment, chlorophyll.

cypriniform fish A soft-finned fish of the order Cypriniforms. It includes carps, minnows, loaches, and relatives.

cubic feet per second A volumetric flow rate, which is equivalent to a volume of 1 cubic foot flowing every second.

cyanobacteria Photosynthetic, nitrogen-fixing, colonial bacteria found in a wide variety of terrestrial and aquatic habitats, often referred to as "blue-green algae."

D

Davis-Grunsky Act Authorized in 1960 as part of the Burns-Porter Act, this act provides construction loans for local domestic water projects and agricultural water conservation projects.

Delta outflow Freshwater outflow from the Sacramento-San Joaquin Delta to protect the beneficial uses within the Delta from the incursion of saline water.

Delta outflow index A calculated approximation of the seaward freshwater outflow as it passes Chipps Island near Pittsburg, beyond the confluence of the Sacramento and San Joaquin rivers.

Delta Simulation Model 2 (DSM2) A hydrodynamic and water quality simulation model used to simulate water flow and quality conditions in the Sacramento-San Joaquin Delta. The model is frequently used to evaluate potential changes in Delta conditions (salinity, flow, and water level) associated with changes in flow patterns in the Delta.

diatom Microscopic marine or freshwater colonial algae that have cell walls made out of silica.

dinoflagellate A small, single-celled organism with flagella and an internal skeleton of cellulose-like plates found in both marine and freshwater environments and best known as causes of harmful algal blooms.

disked To cultivate with an implement (such as a harrow or plow) that turns and loosens the soil with a series of discs.

dissolved organic carbon A general description of the organic material dissolved in water. Organic carbon occurs as the result of decomposition of plant or animal material.

dissolved organic nitrogen That subset of dissolved organic carbon that also contains nitrogen. Dissolved organic nitrogen compounds in lakes and rivers originate from photosynthetic organisms (algae and plants) and excretion of nitrogenous waste by animals, but leachate (liquid that drains or “leaches” from a landfill) from soil, sewage discharge, and atmospheric deposition can also contribute organic nitrogen to the water.

dissolved oxygen The amount of oxygen dissolved in water or wastewater, usually expressed in milligrams per liter, parts per million, or percent of saturation.

distinct population segment A subdivision of a species that is treated as a species for purposes of listing under the Endangered Species Act. The smallest

division of a taxonomic species that can be protected under the Endangered Species Act.

D-net A net with an orifice shaped like the letter “D” used for collecting bottom plankton and larval fish.

drainage area The area of land from which water drains into a river; for example, the Sacramento River Basin, in which all land area drains into the Sacramento River. Also called a watershed, drainage basin, or river basin.

Dynamic Mercury Cycling Model (D-MCM) An aquatic mercury cycling model used to model mercury biogeochemical processes in the Yolo Bypass. It includes inorganic mercury, methylmercury, and elemental mercury in water, sediments, and a food web. Hydrodynamic inputs for D-MCM are generated with TUFLOW, a high-resolution hydrodynamic model.

E

ecosystem restoration The activity of improving the condition of natural landscapes and biotic communities.

egg mat A man-made device to mimic the job of plants in the wild, it catches fish eggs and offers some protection from predators until the laid eggs can be seen and counted or collected for sampling or surveying.

electrical conductivity The measure of the ability of water to conduct an electrical current, the magnitude of which depends on the dissolved mineral content of the water. Also called specific conductance.

electrofishing A fishing technique that uses direct current electricity flowing between a submerged cathode and anode. This affects the movements of nearby fish so that they swim toward the anode, where they can be caught or stunned. Electrofishing is a common scientific survey method used to sample fish populations to determine abundance, density and species composition. When performed correctly, electrofishing results in no permanent harm to the fish, which return to their natural mobility state in as little as two minutes after being caught.

endangered species An animal or plant species in danger of extinction throughout all or a significant portion of its range.

entrainment The unintended diversion of fish (or other aquatic organisms) into an unsafe passage route. The incidental trapping of any life stage of fish within waterways or structures that carry water being diverted for use elsewhere. Fish are considered “entrained” when they enter a diversion point, which for the SWP is Clifton Court Forebay.

environmental impact report (EIR) A report done to analyze project or program impacts on a variety of resources under the California Environmental Quality Act.

environmental impact statement A report done to analyze project or program impacts on a variety of resources under the National Environmental Policy Act.

environmental water The water for wetlands, for the instream flow in a major river or the Bay-Delta, or for a designated wild and scenic river.

epiphyte An organism that usually grows on the surface of a plant and derives its moisture and nutrients from the air, rain, water (in marine environments), or from debris accumulating around it.

escapement The portion of an anadromous fish population that escapes commercial and recreational fisheries and reaches its freshwater spawning grounds.

estuary A semi-closed coastal body of water where the lower course of a river enters the sea, influenced by tidal action where the tide meets the river flow, resulting in brackish water.

euglenoid flagellates A single-celled organism, either green and photosynthetic or colorless and non-photosynthetic, with one or two flagella emerging from a well-defined gullet.

evapotranspiration The amount of water transpired by plants, retained in plant tissues, and evaporated from plant tissues and surrounding soil surfaces.

excess water conditions Periods when it is agreed that releases from upstream reservoirs plus unregulated flow exceeds Sacramento Valley inbasin uses plus exports. DWR and the Bureau of Reclamation jointly decide when balanced or excess water conditions exist. During excess water conditions, sufficient water is available to meet all beneficial needs, and the SWP and Central Valley Project are not required to supplement the supply with water from reservoir storage.

export An amount of water transported from one source or location to another.

F

FERC Part 12D inspection Part 12D in the Code of Federal Regulations contains the regulations governing the periodic inspection of FERC-licensed dam projects by an independent consultant.

fish planting Releasing hatchery-raised fish into a water body for the purposes of supplementing existing populations or creating new ones for fishing (also referred to as “stocking” or simply “planting”).

flagellates Organisms with one or more whip-like structures called flagella, which are used for locomotion or feeding.

flashboard One or more boards projecting above the top of a dam to increase the depth of the water.

floodplain A strip of relatively level land bordering a stream or river that is often inundated during times of high water.

forage Food for animals, especially crops grown to feed horses, cattle, and other livestock.

forebay A reservoir at the intake of a pumping plant or power plant to stabilize water levels; also a storage basin for regulating water for percolation into groundwater basins.

fork length A measurement used frequently for fish length when the tail has a fork shape; projected straight distance between the tip of the snout and the fork of the tail.

fry Young, recently hatched fish that are able to swim and catch their own food.

G

geosmin An organic compound with a distinct earthy flavor and aroma, which most people can easily smell. The odor detection threshold of geosmin is very low, ranging from 0.006 to 0.01 micrograms per liter in water. Geosmin literally translates to “earth smell,” and is a contributor to the strong scent (petrichor) that occurs in the air when rain falls after a dry spell of weather or when soil is disturbed.

green algae A large, informal grouping of algae (singular: green alga). Like plants, green algae contain two forms of chlorophyll, which the algae use to capture light energy to fuel the manufacture of sugars. Unlike plants, green algae are primarily aquatic.

greenhouse gas emissions Also referred to as carbon intensity or carbon footprint, greenhouse gases trap heat in the atmosphere and contribute to climate change. They include carbon dioxide, methane, nitrous oxide, and fluorinated gases.

grilse A term that generally refers to young adult salmonids of a certain length and age. Grilse are often 55–65 centimeters (22–26 inches) in length. They are assumed to be two years old, and adults are assumed to be age three and older.

groundwater Water located beneath the land surface that fills the pore spaces of the alluvium, soil, or rock formation in which it is situated. It excludes soil moisture, which refers to water held by capillary action in the upper unsaturated zones of soil or rock.

groundwater bank Groundwater banking refers to the practice of recharging specific amounts of water in a groundwater basin during wet or above-average years, which can later be withdrawn and used by the depositing entity.

groundwater basin An alluvial aquifer or a stacked series of alluvial aquifers with reasonably well-defined boundaries in a lateral direction and having a definable bottom.

groundwater table The upper surface of the zone of saturation in an unconfined aquifer.

H

habitat The place or environment where a plant or animal naturally lives and grows with a group of particular environmental conditions.

hydroelectric Relating to or denoting the generation of electricity using flowing water (typically from a reservoir held behind a dam or other barrier) to drive a turbine that powers a generator.

hydrologic region DWR divides California into 10 hydrologic regions, corresponding to the state's major water drainage basins: North Coast, San Francisco Bay, Central Coast, South Coast, Sacramento River, San Joaquin River, Tulare Lake, North Lahontan, South Lahontan, and Colorado River.

hydrology The science dealing with the occurrence, circulation, distribution, and properties of the waters of the earth and its atmosphere.

I

instream use Use of water within its natural watercourse as specified in an agreement, water rights permit, etc. For example, the use of water for navigation, recreation, fish and wildlife, aesthetics, and scenic enjoyment.

integrated regional water management A comprehensive approach for determining the appropriate mix of demand and supply management options to provide long-term, reliable water supply at the lowest reasonable cost and with the highest possible benefits to customers, economic development, environmental quality, and other social objectives.

invertebrate An animal that lacks a backbone.

J

joint points of diversion The ability of the SWP to use Jones Pumping Plant as a point of diversion and the Central Valley Project to use Banks Pumping Plant as a point of diversion. The SWP and Central Valley Project may use one another's diversion facilities under certain conditions.

joint-use facilities Those portions of the SWP that serve both SWP and Central Valley Project functions, and in which both State and federal agencies participate in the construction and use; specifically, the San Luis complex and Reaches 3, 4, 5, 6, and 7 of the California Aqueduct.

jurisdictional dam Artificial barriers, together with appurtenant works, which are 25 feet or more in height or have an impounding capacity of 50 acre-feet or more, which are regulated by the DWR Division of Safety of Dams.

L

land subsidence The lowering of the natural land surface in response to: earth movements; the lowering of fluid pressure or groundwater level; consolidation of underlying soils; removal of underlying supporting materials by mining (e.g., oil and gas extraction); compaction caused by wetting; or oxidation of organic matter in soils (e.g., peat soil being converted to gas).

legal Delta The legal geographical boundaries of the Sacramento-San Joaquin Delta, as established by the Delta Protection Act of 1959, and as defined in California Water Code Section 12220.

listed species A species, subspecies, or distinct population segment that has been added to the federal list of endangered and threatened wildlife and plants. The term also applies to a species or subspecies added to the California list of endangered or threatened plants and animals.

louver An opening provided with one or more slanted fixed or movable fins to allow flow of water; also, a vane or shutter of a louver.

M

macrofauna Animals large enough to be seen by the naked eye.

mark-recapture Method used to estimate the size of a population where it is not practical to count every individual. A small number of animals are captured, marked, and released back into the population. Later, another small number of animals is captured, and the researcher records how many of the animals have a mark.

maximum contaminant level The highest drinking water contaminant concentration allowed under federal and State Safe Drinking Water Act regulations.

megawatt (MW) One million watts.

megawatt hour (MWh) A unit of energy. It is a measure of the actual amount of power consumed or produced by one megawatt expended for a period of one hour.

mercury A silver-white poisonous heavy metallic element that is liquid at ordinary temperatures and is used especially in batteries, in dental amalgam, and in scientific instruments. Mercury can enter watersheds in many ways, including as the byproduct of industrial combustion. Mercury is emitted into the air as a particulate where it can combine with other elements to form methylmercury (MeHg). In this form it can be introduced to bodies of water and easily transferred up through the food chain.

mesocosm Any outdoor experimental system that examines the natural environment under controlled conditions. Mesocosm studies provide a link between field surveys and highly controlled laboratory experiments.

methylmercury (MeHg) See mercury.

microsiemens One million siemens. See siemens.

millisiemens One thousand siemens. See siemens.

mitigation (1) An action or set of actions designed to avoid, minimize, reduce, eliminate, or compensate for adverse environmental impacts due to an agency activity or program. (2) Reduction of human activities that affect global climate change, including strategies to reduce greenhouse gas emissions.

Monterey Agreement An agreement executed in December 1994 among DWR and the SWP contractors to address fundamental contract issues by amending the Water Supply Contracts.

Monterey Amendments Amendments to the Water Supply Contracts for the SWP entered into by DWR and most (27 of 29) of the SWP Contractors in 1995 and 1996 as implementation of the terms of the Monterey Agreement.

multipurpose project A project, usually a reservoir, designed to serve more than one purpose, whose costs are normally allocated among the different functions it provides. For example, a project that provides water supply, flood control, and generates hydroelectricity.

myxozoan A group of microscopic parasites often with two life stages. The myxospore stage infects several types of aquatic worms when ingested. This produces the actinospore stage, which then infects the fish host.

N

natural community conservation planning A process that promotes multispecies and multihabitat management and conservation through cooperative efforts among public agencies, private landowners, and other interests within a plan area. It provides a framework for minimizing impacts on plant communities and wildlife from proposed development projects.

O

Operations Criteria and Plan (1) The document titled “Long-Term Central Valley Project Operations Criteria and Plan” that serves as a baseline description of the facilities and operating environment of the Central Valley Project and the SWP and identifies factors influencing the physical and institutional conditions and decision-making processes under which the projects currently operate. Regulatory and legal requirements are explained and alternative operating models and strategies described. (2) The document titled, “Central Valley Project Operations Criteria and Plan” (CVP-OCAP, 2004), that describes the laws, regulations, and other criteria applicable to operations of the Central Valley Project that were in effect from 1991 through 2003.

Operations Criteria and Plan biological opinion (1) The document titled “Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and the State Water Project” (NOAA Fisheries, 2009). (2) The December 15, 2008, memorandum from the U.S. Fish and Wildlife Service to the Bureau of Reclamation that comprises the U.S. Fish and Wildlife Service biological opinion on the coordinated operations of the Central Valley Project and the SWP.

orthomosaic An orthophoto, orthophotograph or orthoimage is an aerial photograph geometrically corrected (“orthorectified”) such that the scale is uniform: the photo has the same lack of distortion as a map. Unlike an uncorrected aerial photograph, an orthophotograph can be used to measure

true distances, because it is an accurate representation of the Earth's surface, having been adjusted for topographic relief, lens distortion, and camera tilt.

otolith Ear bone of a fish. Otoliths often show seasonal or annual rings that can be used to determine age.

outflow The amount of applied water and conveyance water leaving the service area. Also conveyance outflow.

P

panne Water-retaining depressions located within salt and brackish marshes. Pannes usually do not maintain water in the summer months between high tides.

passive integrated transponder tag A small radio transponder that contains a specific code, which allows individual fish, as well as amphibians, reptiles, birds and even rocks, to be assigned a unique 10- or 15-digit alphanumeric identification number.

pelagic Inhabiting the water column as opposed to being associated with the bottom; generally occurring anywhere from the water's surface down to, but not including, the bottom.

pelagic fish Fish that live in open water, often near the surface.

penstock (1) A sluice or gate for regulating a flow (as of water); (2) a conduit or pipe for conducting water.

Periodic Facility Review Part 12D in the Code of Federal Regulations contains the regulations governing the periodic inspection of FERC-licensed dam projects by an independent consultant.

pH A measure of acidity and alkalinity of a substance, measured on a scale from 1 to 14. A value of 7 represents neutrality. Lower numbers indicate increasing acidity (the lower the number, the more acidic it is) and higher numbers increasing alkalinity (the higher the number, the more alkaline the substance is). Water has a pH of 7.

pheophytin α A primary degradation product of chlorophyll α , and its relative concentration is useful for estimating the general physiological state of phytoplankton populations.

phytoplankton Minute plants, such as algae, that live suspended in bodies of water and drift with the current.

place of use Water rights most often have a place of use. The place of use may be defined in a court decree or adjudication and shown on an associated map. In most court decrees, the place of the use for a water right is “forever,” unless another case comes up to change that place.

potential failure mode analysis (PFMA) PFMA is common among any dam safety organization, and as the name implies, is a focused analysis of the targeted dam to potentially develop a catastrophic failure event based on structural conditions, the age of the dam’s infrastructure, seismic events, major flooding events, operational protocols (e.g., human error), and surveillance approach. The goal of a PFMA is to consider how a dam can fail, identify those failure modes and what would trigger them, and then establish a surveillance and monitoring program that would recognize an identified (as found in the PFMA) catastrophic triggering event in its early stages to prevent it.

precipitation A deposit on the earth of hail, rain, mist, sleet, or snow. It is the common process by which atmospheric water becomes surface or subsurface water.

preliminary application document One of the documents required by the Federal Energy Regulatory Commission to file an original, new, or subsequent hydropower license application using the Traditional Licensing Process. The preliminary application document is filed during the first stage of the three-stage process.

public trust doctrine A legal doctrine recognizing public rights in the beds, banks, and waters of navigable waterways, and the State’s power and duty to exercise continued supervision over them as trustee for the benefit of the people.

pumping-generating plant A plant that can either pump water or generate electricity.

R

radial gates Gates used to control the flow of water into or from a reservoir, canal, or pipeline, or through a channel. Each gate can close under its own weight and is operated independently by remote control.

radiotelemetry Automatic measurement and transmission of data from remote sources via radio to a receiving station for recording and analysis.

rate structure Designates the rate basis for cost recovery (e.g., flat, uniform, tiered, etc.). Block/tiered rates are assumed to provide cost signals to consumers. Costs can include capital, operation and maintenance, financing, environmental compliance (documentation, permitting, and mitigation), etc.

raw water Water found in the environment, such as rainwater, surface water (e.g., lakes, streams, and the ocean), or groundwater, that has not been treated. Most water is considered raw until it is treated for consumption or used for agriculture or industry.

reach On the California Aqueduct, a specific segment of the canal, identified by a number, which is the smallest unit of the SWP identified in water supply contracts for cost allocation and repayment purposes.

rearing Refers to the amount of time that juvenile fish spend feeding in nursery areas of rivers, lakes, streams, and estuaries before migration.

reasonable and prudent alternatives Alternative actions that can be implemented in a manner consistent with the intended purpose and scope of a project, are economically and technologically feasible, and would avoid the likelihood of jeopardizing the continued existence of listed species or resulting in the destruction or adverse modification of critical habitat.

recreation Water-dependent recreation activities that are consumptive (e.g., parks), flat-water (e.g., boating), or flow-based (e.g., whitewater rafting).

redd A shallow nest of fish eggs covered with gravel in a streambed.

Regional in Nature program A professional term used by California State Parks and certain other local-level California park districts to describe nature programs offered by their districts. Other nature programs offered at a park but not administered by the district are referred to as “non-Regional in Nature” in this context.

repayment reach California Aqueduct reaches are delineated for the purpose of making project repayment as equitable as possible. The reaches are generally numbered consecutively from the Delta, with Reach 1 being first. Repayment reaches vary greatly in length. (See also, reach.)

reservoir A large natural or artificial lake used as a source of water supply.

riffle A shallow extending across a streambed and causing broken water; a stretch of water flowing over a riffle.

riparian Land adjacent to a stream, lake, or wetland with vegetation that, due to the presence of water, is distinctly different from the vegetation of adjacent upland areas. Riparian zones provide important fish and wildlife habitat.

rotary screw trap A tool that is commonly used to assess changes in the abundance or production of juvenile Chinook salmon. These traps are also being used in some locations to assess the success of restoration activities. Rotary screw traps consist of a funnel-shaped cone that is screened with

3-millimeter (mm) diameter perforated plate. The trap cone is suspended above the water between two aluminum pontoons. Baffles in the trap cone cause the trap cone to rotate as water flows past the trap. As the trap cone rotates, fish that are moving downstream past the trap are guided into a live-box that is attached to the rear of the trap cone.

rubber dam A water controlling structure that can be inflated by air or water. When the bladder is deflated, impounded water is released and the bladder becomes virtually flat.

run (of fish) A group of fish of the same species whose upstream spawning migration timing is associated with the seasons, e.g., fall, spring, summer, and winter runs. Members of a run may interbreed with fish of another run.

runoff The volume of surface flow from an area during a specified period. Natural runoff is the portion of precipitation that runs off the land and makes up the natural flow in rivers. Incidental runoff is the portion of precipitation that would have been used by natural vegetation but now contributes to runoff. This is a result of roads, paved areas, building roofs, land drainage systems, fields developed for irrigation, and other changes in land use.

S

sabellid polychaete A segmented marine worm that lives in a tube that it builds.

saline Consisting of or containing salt. Saline water (more commonly known as salt water) is water that contains a high concentration of dissolved salts (mainly sodium chloride).

salinity Generally, the concentration of mineral salts dissolved in water. Salinity may be expressed in terms of a concentration, weight (total dissolved solids), electrical conductivity, or osmotic pressure. When describing salinity influenced by seawater, salinity often refers to the concentration of chlorides in the water. (See also, total dissolved solids.)

salmonid A fish species belonging to the salmon family, including salmon and trout.

salvage (fish) At the SWP and Central Valley Project fish protective facilities, fish are removed from export water, transported, and released away from the influence of the water diversion facilities.

scour Erosion occurring over a region of limited extent due to local flow conditions, such as may be caused by the presence of hydraulic structures. Scour is the result of the erosive action of flowing water excavating and carrying away material from the bed and banks of streams. Caused by swiftly

moving water, scour can scoop out scour holes, compromising the integrity of a structure.

secant pile wall A retaining wall constructed for ground retention prior to excavation.

sediment Soil or mineral material transported by water and deposited in streams or other bodies of water.

seepage The gradual movement of water into, through, or from a porous medium. Also, the infiltration of water into the soil from canals, ditches, laterals, watercourses, reservoirs, storage facilities, or other bodies of water, or from a field.

seine A large net with sinkers on one edge and floats on the other that hangs vertically in the water and is used to enclose and catch fish when its ends are pulled together or are drawn ashore; also, to fish with or catch fish with a seine. Beach seining involves dragging a rectangular net with poles attached to the ends through the water a short distance to capture fish.

service area The geographic area served by a water agency.

siemens The derived unit of electric conductance, electric susceptance, and electric admittance in the International System of Units (SI). It is named after the German inventor and industrialist Ernst Werner von Siemens, and was previously called the millimho. One siemens is equal to 1,000 millisiemens or 1,000,000 microsiemens.

slough A wetland, usually a swamp or shallow lake, often a backwater to a larger body of water. Water tends to be stagnant or may flow slowly on a seasonal basis. Along the West Coast, sloughs are often named for the quiet, backwater parts of bays and therefore, they are part of the estuary, where freshwater flows from creeks and runoff from land mix with salty ocean water transported by the tides.

smolt A juvenile salmonid fish that has assumed the silvery color of the adult and, while migrating toward the ocean, is undergoing physiological changes that will allow it to live in salt water.

smolting To become a smolt. See smolt.

snowpack The annual accumulation of snow in mountain areas.

special status species Plants or animals legally protected under either the federal or California Endangered Species Act or the California Fish and Game Code; those species not currently protected by statute but considered to be rare or endangered under the California Environmental Quality Act; and species considered by the scientific community to be sufficiently rare to

qualify for legal protection (e.g., candidate species for listing as threatened or endangered, species of concern to the Department of Fish and Wildlife or U.S. Fish and Wildlife Service, or rare plants identified by the California Native Plant Society).

species of concern An informal term referring to a species that might be in need of conservation action.

spillway The section of a dam designed to permit water to pass over its crest; a weir or channel taking overflow from the dam. The spillway serves as a safety channel to prevent erosion or overtopping of the dam.

splashpad A paved structure beside a spillway that helps to prevent erosion from excess water spray.

stakeholder Individuals or groups who can affect or be affected by an organization's activities; individuals or groups with an interest or "stake" in what happens as a result of a decision or action.

streamflow The rate of water flow past a specified point in a channel.

styrene-butadiene-styrene A hard, synthetic rubber commonly referred to as SBS used to modify asphalt, to make soles of shoes and tire treads, and used in other applications where durability is important. Not to be confused with polystyrene (the hard, stiff, brilliantly transparent synthetic resin used to make foam insulation commonly used in disposable eating utensils and dishes).

sub-catchable Fish that have not yet grown to the length required to be caught by fishing activities. Sub-catchable fish are stocked as part of a put and grow management strategy, whereas catchable fish can be caught immediately by anglers and others who fish.

subsidence See land subsidence.

sulfate A salt produced by combining sulfuric acid with other substances. Sulfates can be found in almost all natural water. The origin of most sulfate compounds is the oxidation of sulfite ores, the presence of shales, or the industrial wastes. Sulfate is one of the major dissolved components of rain. Three types of treatment systems will remove sulfate from drinking water: reverse osmosis, distillation, or ion exchange.

super typhoon A typhoon (a tropical storm occurring in the region of the Indian and western Pacific oceans) that reaches an intensity of at least 130 knots (150 miles per hour).

Sustainable Groundwater Management Act A three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319

(Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA), which was passed in 2014.

switchyard A usually enclosed area for the switching facilities of a power station.

T

Table A amount Refers to a table in the water supply contracts that sets forth the annual amount of project water that an individual contractor may request under their contract. Table A amounts are used by DWR for allocating SWP supplies and costs among the contractors.

take (federal Endangered Species Act) To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct; may include significant habitat modification or degradation if it kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering.

taxon (1) A scientifically classified group or entity: a taxonomic unit (such as a genus or order) of any rank; (2) the name applied to a taxonomic group in a formal system of nomenclature.

telemetry The process of recording and transmitting the readings of an instrument. Fish radiotelemetry involves tracking the movement of fish using surgically-implanted radio transmitters.

temporary urgency change petition A formal request to the State Water Resources Control Board for conditional, temporary changes to the terms and conditions of a water right. Temporary urgency change orders issued by the State Water Resources Control Board allow water right holders to temporarily deviate from the terms of their existing water right.

threatened species An animal or plant species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

tidal wetlands The margins of an estuary that are periodically inundated by tides; includes all habitats within the elevation range between the lowest and highest tides: intertidal mudflats, regularly inundated tidal marsh plains, tidal channels within the marsh, and infrequently inundated wetland-upland transition zones at the edge of the upland.

total capital cost The total monetary cost of options required for “turnkey” implementation, including environmental and third-party impact mitigation, storage, conveyance, energy, capitalized operations and maintenance, administrative costs, planning costs, legal costs, and engineering costs.

total dissolved solids The quantity of the residual minerals dissolved in water that remain after evaporation of a solution.

total phosphorous An essential nutrient for plants and animals. It is naturally limited in most fresh water systems because it is not as abundant as carbon and nitrogen; introducing a small amount of additional phosphorus into a waterway can have adverse effects. Sources of phosphorus include soil, rocks, and wastewater treatment.

trace metals The metals subset of trace elements; that is, metals normally present in small but measurable amounts in animal and plant cells and tissues and that are a necessary part of nutrition and physiology. Many biometals are trace metals. Ingestion of, or exposure to, excessive quantities can be toxic.

transmission owner tariff (TOT) Describes the terms under which a utility provides open access to its transmission system to wholesale customers seeking to: (1) interconnect generation facilities to the utility's transmission system to deliver energy and capacity services to the California Independent System Operator (CAISO) Controlled Grid; (2) interconnect wholesale load to Southern California Edison's transmission system; or (3) interconnect new transmission facilities to the utility's transmission system. A utility's TOT also sets revenue requirements and applicable rates and charges for transmission access over the CAISO Controlled Grid and sets the terms and conditions for transmission expansion. A utility's TOT is not applicable for customers seeking service under that utility's retail rates, or interconnection of power projects to the utility's distribution system, or for any other purpose not authorized by the Federal Energy Regulatory Commission.

transponder A device that, upon receiving a designated signal, emits a signal of its own and that is used especially for the detection, identification, and location of objects, or, in wildlife studies, different animals. The term is a contraction of the words transmitter and responder.

tributary A stream that flows into a larger stream or other body of water.

trihalomethanes Any of various derivatives of methane (such as chloroform) that have three halogen atoms per molecule and are formed especially during the chlorination of drinking water.

tubificid worm An aquatic worm with a small, thin, segmented body.

turbidity A measure of the cloudiness of water caused by the presence of suspended particles in the water that attenuate or reduce light penetration. Turbidity in natural waters may be composed of organic and/or inorganic constituents and may have direct implications to drinking water treatment.

turnout The point at which water is diverted from a main channel or water delivery facility to a distributing facility; a structure through which a water contractor takes delivery of water.

2-methylisoborneol (MIB) MIB and geosmin together account for the majority of biologically-caused taste and odor outbreaks worldwide. MIB has a distinct earthy or musty odor, which most people can easily smell. The odor detection threshold of MIB is very low, ranging from 0.002 to 0.02 micrograms per liter in water. MIB is produced by various blue-green algae (cyanobacteria) and filamentous bacteria in the class Actinomycetes, and also some other prokaryotes and eukaryotes.

U

unimpaired flow The flow past a specified point on a natural stream that is unaffected by stream diversion, storage, import, export, return flow, or change in use caused by modifications in land use.

unimpaired runoff A representation of the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds.

UV₂₅₄ A water quality test parameter that provides a measurement of the amount of light absorbed by organic compounds. The measurement technique works by shining ultraviolet (UV) light at 254 nanometers through a quartz cell that contains a representative water sample.

V

veliger The free-floating larval stage of mussels.

vernal pools A type of wetland that occurs in shallow foothill and valley depressions. Water remains in pools and swales until it evaporates, usually within a few days to a few months, mainly in late winter and spring.

volatile organic compound A man-made organic compound that readily vaporizes in the atmosphere. These compounds are often highly mobile in the groundwater system and are generally associated with industrial activities.

W

wastewater Domestic or municipal sewage or effluent from an industrial process.

water demand The desired quantity of water that would be used if the water were available and if a number of other factors, such as price, did not change. Demand is not static.

water exchange Typically, water delivered by one water user to another water user; the receiving water user will return the water at a specified time or when the conditions of the parties' agreement are met. (See also, water transfer.)

water quality Description of the chemical, physical, and biological characteristics of water, usually with regard to its suitability for a particular purpose or use.

water quality control plan Designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives.

water quality objectives Specific, legally enforced levels of water quality desired for identified uses including drinking, recreation, fish production or propagation of other aquatic life, agriculture, industry, and urban use.

water right In water law, the right of a user to use water from a water source (e.g., a river, stream, pond, or source of groundwater).

Water Right Decision 1641 (D-1641) Adopted by the State Water Resources Control Board in 1999, implements the objectives of the Bay-Delta Plan by placing conditions on water right permits and licenses for the SWP and CVP that require the projects to meet certain objectives in the Bay-Delta Plan.

water transfer A temporary or long-term change in the point of diversion, place of use, or purpose of use due to a transfer or exchange of water or water rights. A more general definition is that water transfers are a voluntary change in the way water is usually distributed among water users in response to water scarcity.

water year A continuous 12-month period for which hydrologic records are compiled and summarized. Different agencies may use different calendar periods for their water years. For DWR, a water year is October 1 through September 30.

watershed The land area from which water drains into a stream, river, or reservoir. Also called drainage area, drainage basin, or river basin.

watershed management The process of evaluating, planning, managing, restoring, and organizing land and other resource use within an area that has a single common drainage point.

weir (1) Any structure across a watercourse used to control, raise, or measure flows. (2) A barrier constructed to catch upstream migrating adult fish. (3) Flood management weirs are lowered sections of levees that allow flood flows in excess of downstream channel capacity to escape into a bypass channel or basin.

wet lab A laboratory equipped with appropriate plumbing, ventilation, and equipment to allow for hands-on scientific research and experimentation.

wetlands Lands including swamps, marshes, bogs, and similar areas such as wet meadows, river overflows, mud flats, and natural ponds. An area characterized by periodic inundation or saturation, certain types of soils, and vegetation adapted for life in saturated soil conditions.

wheel As applied to water and power, to provide the use of one agency's conveyance facilities for the purpose of transporting another agency's supply.

X

X2 Delta outflow interaction with tides determines the location of the X2 isohaline salinity gradient. X2 is the location in the Bay-Delta where the tidally averaged bottom salinity is two parts per thousand. It is expressed as the distance in kilometers from the Golden Gate Bridge. X2 is used as a primary indicator in managing Delta outflow.

Z

zooplankton Small aquatic animals that are suspended or swimming in water.

Bulletin 132-19

Appendix B

Data and Computations

Used to Determine

2020 Water Charges

Appendix B, Data and Computations Used to Determine 2020 Water Charges, was previously printed and distributed under an August 2019 cover letter from Pedro Villalobos, Chief of SWPAO, to State Water Project contractors to document and support DWR's calculation of the contractors' annual charges. Appendix B appears on the following pages as it was published in August 2019. However, Table B-7 was not published in the August 2019 version of Appendix B because the data was not available at the time of publication. Table B-7 now appears in its entirety on page B-84.

Appendix B

Data and Computations

Used to Determine 2020 Water Charges

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State Water Project Water Contractors

The State Water Project water contractors are listed below, followed by shortened forms of their names that are used in Bulletin 132.

| | |
|--|-----------------|
| Alameda County Flood Control and Water Conservation District, Zone 7 | Alameda-Zone 7 |
| Alameda County Water District | Alameda County |
| Antelope Valley-East Kern Water Agency | AVEK |
| City of Yuba City | Yuba City |
| Coachella Valley Water District | Coachella |
| County of Butte | Butte |
| County of Kings | Kings |
| Crestline-Lake Arrowhead Water Agency | Crestline |
| Desert Water Agency | Desert |
| Dudley Ridge Water District | Dudley Ridge |
| Empire West Side Irrigation District | Empire |
| Kern County Water Agency | Kern |
| Littlerock Creek Irrigation District | Littlerock |
| The Metropolitan Water District of Southern California | Metropolitan |
| Mojave Water Agency | Mojave |
| Napa County Flood Control and Water Conservation District | Napa |
| Oak Flat Water District | Oak Flat |
| Palmdale Water District | Palmdale |
| Plumas County Flood Control and Water Conservation District | Plumas |
| San Bernardino Valley Municipal Water District | San Bernardino |
| San Gabriel Valley Municipal Water District | San Gabriel |
| San Gorgonio Pass Water Agency | San Gorgonio |
| San Luis Obispo County Flood Control and Water Conservation District | San Luis Obispo |
| Santa Barbara County Flood Control and Water Conservation District | Santa Barbara |
| Santa Clara Valley Water District | Santa Clara |
| Santa Clarita Valley Water Agency ^a | Santa Clarita |
| Solano County Water Agency | Solano |
| Tulare Lake Basin Water Storage District | Tulare |
| Ventura County Watershed Protection District | Ventura |

^a Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

Appendix B

Data and Computations

Used to Determine 2020 Water Charges

The State of California, acting by and through the Department of Water Resources (DWR), annually furnishes Statements of Charges to the 29 State Water Project (SWP or Project) water contractors. Article 29(e) of the *Standard Provisions for Water Supply Contract*, approved August 3, 1962, describes those statements:

"All such statements shall be accompanied by the latest revised copies of the document amendatory to Article 22 and of Tables B, C, D, E, F, and G of this contract, together with such other data and computations used by the State in determining the amounts of the above charges as the State deems appropriate."

To comply with Article 29(e), DWR performs an annual comprehensive review and redetermination of all water supply and financial aspects of the SWP for the entire project repayment period. This annual redetermination is performed in accordance with Article 22(f) and Article 28 of the water supply contracts, which concern the Delta Water Rate and annual transportation charges, respectively.

Appendix B includes data used to document the redetermination of water charges to be paid by SWP water contractors during calendar year 2020. The information is based on established data about the SWP, both known and projected, as of June 2019; however, small volumes of water may be reclassified over time pursuant to water supply contract provisions. If research requires more current data than was available at the time of production of

Bulletin 132, please contact the State Water Project Analysis Office. Where applicable, the projected data values shown in this appendix are shaded and the bill year data are in **bold** type.

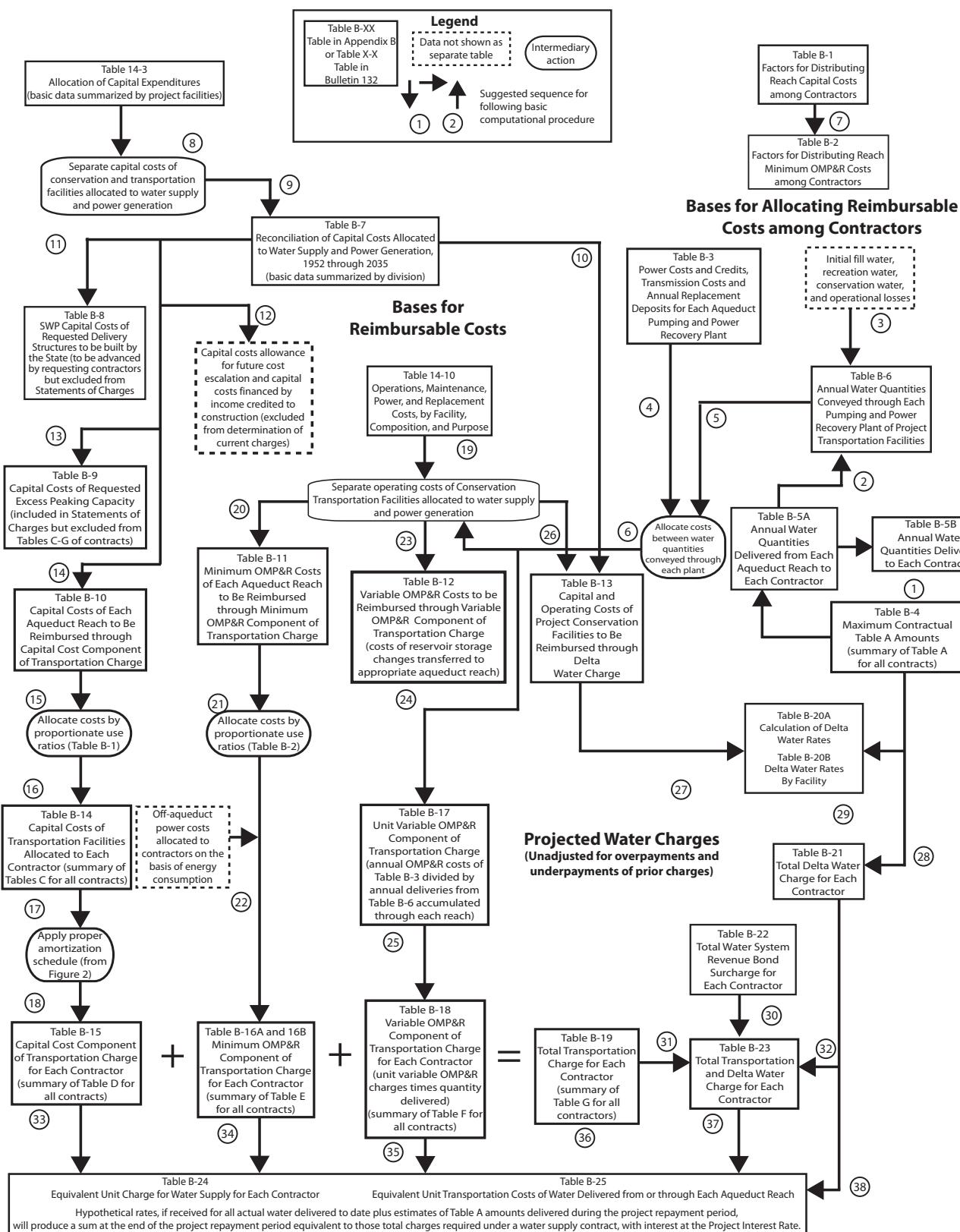
The computational procedures and interrelationships between tabulations in this appendix are outlined on Figures B-1 and B-2. All tables referenced on Figures B-1 and B-2 follow this text.

Types of Water Charges

Charges to SWP water contractors include the costs of facilities for the conservation and development of a water supply and the conveyance of such supply to SWP service areas. These facilities are classified as "Project Conservation Facilities" and "Project Transportation Facilities" in the *Standard Provisions for Water Supply Contract*. Names of the main facilities in each classification follow.

Project Conservation Facilities

- Frenchman Dam and Lake
- Grizzly Valley Dam and Lake Davis
- Antelope Dam and Lake
- Oroville Dam and Lake Oroville
- Oroville power facilities
- Delta facilities
- Suisun Marsh facilities
- Yolo Bypass
- A portion of the California Aqueduct from the Delta to Dos Amigos Pumping Plant
- Sisk Dam, San Luis Reservoir, and Gianelli Pumping-Generating Plant

**Figure B-1 Relationships of Data Used to Substantiate Statements of Charges**

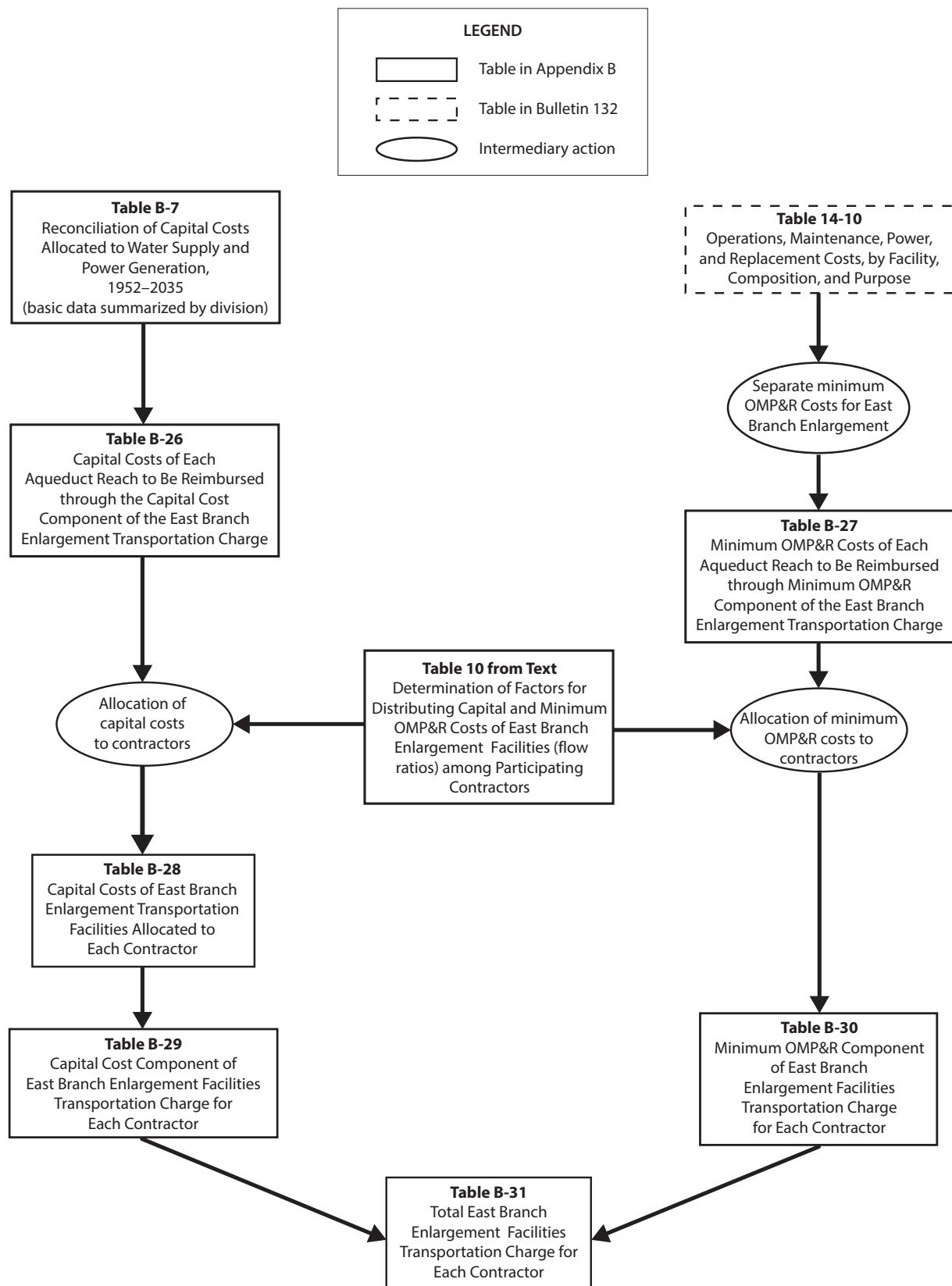


Figure B-2 Relationships of Data Used to Substantiate East Branch Enlargement Charges

Project Transportation Facilities

- Grizzly Valley Pipeline
- North Bay Aqueduct
- South Bay Aqueduct, including Del Valle Dam and Lake del Valle
- the remainder of the California Aqueduct from the Delta to Dos Amigos Pumping Plant and all facilities south, including dams and lakes in Southern California
- Off-Aqueduct Power Facilities (Reid Gardner Unit No. 4, Bottlerock Powerplant, and South Geysers Powerplant)

The standard provisions provide for a Delta Water Charge and a Transportation Charge for project water.

The Delta Water Charge is a unit charge applied to each acre-foot of SWP water the SWP water contractors are to receive, in accordance with their contracts. The unit charge, if applied to each acre-foot of all such allocations for the remainder of the project repayment period, is calculated to result in repayment of all outstanding reimbursable costs of the Project Conservation Facilities, with appropriate interest, by the end of the repayment period (2035).

The Transportation Charge is for use of facilities to transport water to the vicinity of each SWP water contractor's turnout(s). Generally, the annual charge represents each SWP water contractor's proportionate share of the reimbursable capital costs and operating costs of the Project Transportation Facilities.

Each SWP water contractor's allocated share of those reimbursable capital costs is amortized for repayment to DWR, and certain variations are allowed in the amortization methods. SWP water contractors' shares of reimbursable operating costs are repaid in the year such costs are incurred by DWR.

The East Branch Enlargement Transportation Charge is paid by the seven Southern California SWP water contractors participating in the enlargement. San Bernardino Valley Municipal Water District advanced funds to pay the district's allocated capital costs for the East Branch Enlargement. The remaining six SWP water contractors pay an allocated share of the debt service on revenue bonds sold to finance the enlargement. Each SWP water contractor will also pay an allocated share of the minimum operation, maintenance, power, and replacement (OMP&R) costs of the East Branch Enlargement.

Transportation charges for the Coastal Branch Extension, East Branch Extension, and South Bay Enlargement are being repaid by SWP water contractors in their respective service areas.

Transportation charges for the Tehachapi East Afterbay are repaid by those SWP water contractors using electrical power for delivery of their Table A water downstream of the Tehachapi East Afterbay.

Composition and Timing of Water Charges

As shown on *Figure B-3*, the Delta Water Charge and the Transportation Charge consist of the following three components:

- (1) conservation and transportation capital cost components, which will return to DWR all reimbursable capital costs;
- (2) conservation and transportation minimum OMP&R components, which will return to DWR all reimbursable operating costs that do not depend on or vary with quantities of water actually delivered to the SWP water contractors; and
- (3) a transportation variable OMP&R component, which will return to DWR all reimbursable operating costs that depend on and vary with quantities of

Delta Water Charge

Capital Cost Component

1. Planning, design, right-of-way, and construction costs of Conservation Facilities
2. Operations and maintenance (O&M) costs for newly constructed Conservation Facilities prior to initial operations
3. Activation costs for newly constructed Conservation Facilities
4. Power costs allocated to initial filling of San Luis Reservoir
5. Capitalized O&M costs (major repair work and so forth) for Conservation Facilities
6. Program costs (portion) to mitigate impacts on current Delta fishery population due to State Water Project (SWP) pumping prior to 1986
(Department of Water Resources-Department of Fish and Wildlife agreement)

Minimum Operations, Maintenance, Power, and Replacement (OMP&R) Component

1. Direct O&M costs of Conservation Facilities
2. General O&M costs allocated to Conservation Facilities
 - a. Contractor Accounting Office (portion)
 - b. Financial and contract administration (portion)
 - c. Water rights
 - d. Power planning for SWP facilities (portion)
3. Replacement deposits for SWP control centers (portion)
4. Credits for a portion of Hyatt-Thermalito power generation
5. Power costs and credits related to pumping water to San Luis Reservoir for project operations (storage changes)
6. Value of power used and generated by Gianelli Pumping-Generating Plant
7. Program costs (portion) to offset annual fish losses resulting from pumping at Banks Pumping Plant
(Department of Water Resources-Department of Fish and Wildlife agreement)

Transportation Charge

Capital Cost Component

1. Planning, design, right-of-way, and construction costs of Transportation Facilities
2. Operations and maintenance (O&M) costs for newly constructed Transportation Facilities prior to initial operation
3. Activation costs for newly constructed Transportation Facilities
4. Power costs allocated to initial filling of Southern California reservoirs
5. Capitalized O&M costs (e.g., major repair work) for Transportation Facilities
6. Program costs (portion) to mitigate impacts on current Delta fishery population due to SWP pumping prior to 1986
(Department of Water Resources-Department of Fish and Wildlife agreement)

Minimum OMP&R Component

1. Direct O&M costs of Transportation Facilities
 - a. Headquarters and field divisions (portion)
 - b. Insurance and Federal Energy Regulatory Commission (FERC) costs (portion)
2. General O&M costs related to Transportation Facilities
 - a. Contractor Accounting Office (portion)
 - b. Financial and contract administration (portion)
 - c. Power planning for SWP facilities (portion)
3. Power costs and credits related to pumping water to Southern California reservoirs for project operations (storage changes)
4. Power costs for pumping water to replenish losses from Transportation Facilities (downstream costs)
5. Other power costs
 - a. Station service at Transportation Facility power and pumping plants
 - b. Certain transmission service costs (transmission access charges, downstream costs, etc.)
6. Replacement deposits for SWP control centers (portion)
7. Off-Aqueduct Power Facility costs—bond service, bond cover costs (25 percent of bond service), bond reserves, transmission service costs, fuel costs, taxes, and O&M—less power sales allocated to Off-Aqueduct Power Facilities
8. Program costs (portion) to offset annual fish losses resulting from pumping at Banks Pumping Plant
(Department of Water Resources-Department of Fish and Wildlife agreement)

Variable OMP&R Component

1. Power purchase costs
 - a. Capacity
 - b. Energy
 - c. Pine Flat Powerplant bond service, O&M, and transmission costs allocated to aqueduct pumping plants
2. Alamo, Devil Canyon, Warne, and Castaic power generation credited at the power plant reach and charged to aqueduct pumping plants
3. Hyatt-Thermalito Diversion Dam Powerplant generation charged to aqueduct pumping plants (credits for this generation are reflected in the Delta Water Rate)
4. Replacement deposits for equipment at pumping plants and power plants
5. Credits from sale of excess SWP system power
6. Program costs (portion) to offset annual fish losses resulting from pumping at Banks Pumping Plant
(Department of Water Resources-Department of Fish and Wildlife agreement)

Note: Excludes costs recovered under the East Branch Enlargement Transportation Charge.

Figure B-3 Composition of Delta Water Charge and Transportation Charge

water actually delivered to the SWP water contractors.

The formula for computing the Delta Water Rate, Article 22(f) of the *Standard Provisions for Water Supply Contract*, was designed to ensure that all adjustments for prior overpayments or underpayments of the Delta Water Charge are accounted for in a redetermination of the rate. Since the redetermined rate applies to all future allocations, such adjustments are amortized during the remainder of the project repayment period. This appendix includes a redetermination of the Delta Water Rate for 2020.

Article 28 of the standard provisions stipulates that Transportation Charges be redetermined each year. The tables in Appendix B include the numerical data used in this redetermination. Transportation Charges for prior years through 2019, included in those tables, are the redetermined amounts and do not equal the amounts actually paid by SWP water contractors.

As provided under the Water System Revenue Bond Amendment to the water supply contracts, differences between actual payments under the Transportation capital cost component and amounts computed in this redetermination are accumulated with interest and amortized during the remaining years of the contract repayment period. All computations for adjustments are included in the attachments accompanying each SWP water contractor's Statement of Charges and are reflected in revised copies of Table C through Table G of the contract, which are also furnished to each SWP water contractor in its annual Statement of Charges.

These redeterminations exclude four charges associated with water service other than the Delta Water Charge and the Transportation Charge. The excluded charges (and the

manner in which they are treated in this appendix) are outlined below.

- (1) Advances of funds pursuant to Article 24(d) of the standard provisions for excess capacity constructed by DWR at the request of SWP water contractors.
- (2) Advances of funds pursuant to Article 10(d) of the standard provisions for delivery structures (turnouts) constructed by DWR at the request of SWP water contractors. Partial information concerning actual and projected capital costs of such delivery structures is included in this appendix. Statements concerning these costs and data are furnished to the appropriate SWP water contractors at various times and are not part of the annual statements.
- (3) Payments for sale and service of surplus water to entities other than SWP water contractors, pursuant to Article 21 of the standard provisions, are also excluded. Those payments are generally based on the unit rates shown in Table B-25. Net revenues resulting from non-SWP water contractor service are applied as indicated on page 24 of Bulletin 132-71.
- (4) Payments under the Devil Canyon-Castaic contract for costs of the Devil Canyon-Castaic facilities allocable to power generation. Charges billed as a result of the contract are billed separately from those billed as a result of the water supply contract. Information about the treatment of such charges in relation to redetermined Transportation Charges is included in special attachments to the bills of the six participating SWP water contractors.

Time and method of payment for corresponding components of the Delta Water Charge and the Transportation Charge are as follows.

- (1) The capital cost components of the Delta Water Charge and the Transportation Charge are paid in two semiannual installments, due January 1 and July 1 of each year, based on statements furnished by DWR on or before July 1 of the preceding year.
- (2) The minimum OMP&R components of the Delta Water Charge and the Transportation Charge are paid in 12 equal installments due the first of each month and based on statements furnished by DWR on or before July 1 of the preceding year.
- (3) The variable OMP&R component of the Transportation Charge is paid in varying monthly amounts and is due the fifteenth day of the second month following actual water delivery. The charges are projected based on a unit charge per acre-foot established on or before July 1 of the preceding year. Those unit charges may be revised during the year to reflect current power costs and revenues. The unit charges are applied to actual monthly delivery quantities as determined by DWR on or before the fifteenth day of the month following actual water delivery.

Bases for Allocating Reimbursable Costs among SWP Water Contractors

This section describes procedures for allocating reimbursable costs of Project Transportation Facilities among SWP water contractors (see upper right portion of *Figure B-1*). Those costs do not include annual costs of Off-Aqueduct Power Facilities, which are explained in the "Project Water Charges" section.

Capital and Minimum OMP&R Costs

Figure B-4 includes information about the repayment reaches that form the basis for allocating reimbursable costs of the Project

Transportation Facilities among SWP water contractors.

Allocations of reimbursable capital costs and minimum OMP&R costs of each reach are based on the proportionate maximum use of that reach by respective SWP water contractors under planned conditions of full development.

The derivation of ratios that represent the proportionate maximum use of each aqueduct reach by the respective SWP water contractors was first reported in Bulletin 132-70. The ratios in Bulletin 132-70 were subsequently revised for the North Bay Aqueduct, the South Bay Aqueduct, the California Aqueduct from the Delta to Castaic Lake, and the Coastal Branch.

All the revisions reported in previous bulletins regarding the derivation of ratios that represent the proportionate maximum use of each aqueduct reach by the respective SWP water contractors were last reported in Tables B-1 and B-2 of Bulletin 132-91. Under Article 53 of the Monterey Amendment, agricultural SWP water contractors may sell up to 130,000 acre-feet of aqueduct capacity to municipal and industrial SWP water contractors. The first permanent transfer occurred in 1998. Currently, 114,000 acre-feet of the allowable capacity has been transferred. *Table 1* shows the permanent capacity transfers that have taken place since the Monterey Amendment was implemented in 1995.

Table B-1 presents the reach ratios currently applicable to reimbursable capital costs. These reach ratios do not reflect the permanent capacity transfers.

Table B-2 presents corresponding ratios for allocating 2020 and after reimbursable minimum OMP&R costs among SWP water contractors. Requested excess capacity is omitted when deriving ratios applicable to capital costs because the capital costs for the

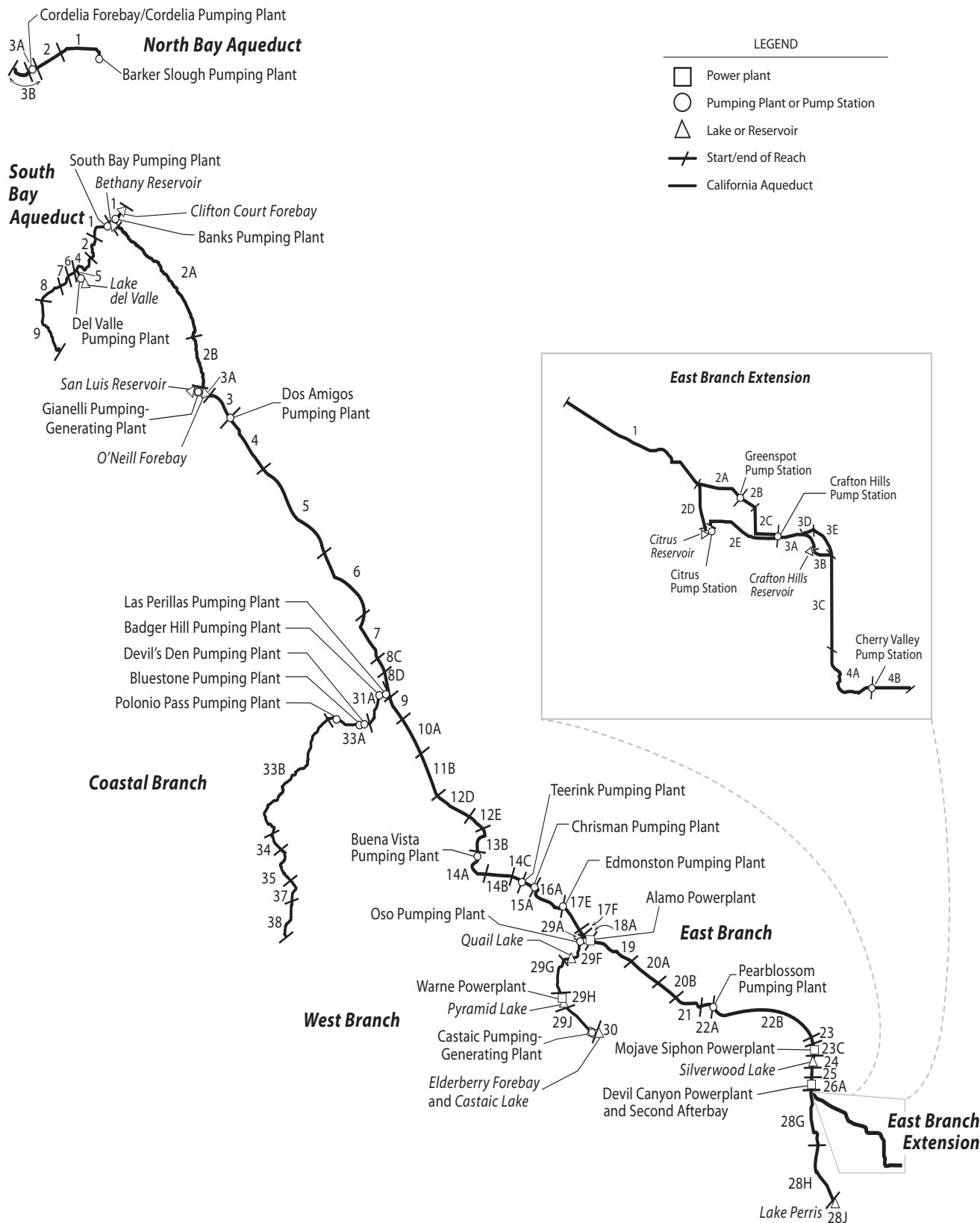


Figure B-4 Repayment Reaches and Descriptions

North Bay Aqueduct

- 1 Barker Slough through Fairfield/Vacaville Turnout
- 2 Fairfield/Vacaville Turnout to Cordelia Forebay
- 3A Cordelia Forebay through Benicia and Vallejo Turnouts
- 3B Cordelia Forebay through Napa Turnout Reservoir

South Bay Aqueduct

- 1 Bethany Reservoir through Altamont Turnout
- 2 Altamont Turnout through Patterson Reservoir
- 4 Patterson Reservoir to Del Valle Junction
- 5 Del Valle Junction through Lake del Valle
- 6 Del Valle Junction through South Livermore Turnout
- 7 South Livermore Turnout through Vallecitos Turnout
- 8 Vallecitos Turnout through Alameda-Bayside No. 1 Turnout
- 9 Alameda-Bayside No. 1 Turnout through Santa Clara Terminal Facilities

California Aqueduct***North San Joaquin Division***

- 1 Delta through Bethany Reservoir
- 2A Bethany Reservoir to Orestimba Creek
- 2B Orestimba Creek to O'Neill Forebay

San Luis Division

- 3A Sisk Dam, San Luis Reservoir, and Gianelli Pumping-Generating Plant
- 3 O'Neill Forebay to Dos Amigos Pumping Plant
- 4 Dos Amigos Pumping Plant to Panoche Creek
- 5 Panoche Creek to Five Points
- 6 Five Points to Arroyo Pasajero
- 7 Arroyo Pasajero to Kettleman City

South San Joaquin Division

- 8C Kettleman City through Milham Avenue
- 8D Milham Avenue through Avenal Gap
- 9 Avenal Gap through Twisselman Road
- 10A Twisselman Road through Lost Hills
- 11B Lost Hills to 7th Standard Road
- 12D 7th Standard Road through Elk Hills Road
- 12E Elk Hills Road through Tupman Road
- 13B Tupman Road to Buena Vista Pumping Plant
- 14A Buena Vista Pumping Plant through Santiago Creek
- 14B Santiago Creek through Old River Road
- 14C Old River Road to Teerink Pumping Plant
- 15A Teerink Pumping Plant to Chrismen Pumping Plant
- 16A Chrismen Pumping Plant to Edmonston Pumping Plant

Coastal Branch, California Aqueduct

- 31A Avenal Gap to Devil's Den Pumping Plant
- 33A Devil's Den Pumping Plant through Tank 1
- 33B Tank 1 through Chorro Valley Turnout
- 34 Chorro Valley Turnout through Lopez Turnout
- 35 Lopez Turnout through Guadalupe Turnout
- 37 Guadalupe Turnout to SPRR crossing near Casmalia
- 38 SPRR crossing near Casmalia through terminous at Tank 5 (Outlet Vault)

Tehachapi Division

- 17E Edmonston Pumping Plant to Porter Tunnel
- 17F Porter Tunnel to Junction, West Branch

Mojave Division

- 18A Junction, West Branch through Alamo Powerplant
- 19 Alamo Powerplant to Fairmont
- 19C Buttes Junction through Buttes Reservoir
- 20A Fairmont through 70th Street West
- 20B 70th Street West to Palmdale
- 21 Palmdale to Littlerock Creek
- 22A Littlerock Creek to Pearblossom Pumping Plant
- 22B Pearblossom Pumping Plant to West Fork Mojave River
- 23 West Fork Mojave River to Silverwood Lake (excluding Mojave Siphon Powerplant)
- 23C Mojave Siphon Powerplant
- 24 Cedar Springs Dam and Silverwood Lake

Santa Ana Division

- 25 Silverwood Lake to South Portal, San Bernardino Tunnel
- 26A South Portal, San Bernardino Tunnel through Devil Canyon Powerplant and Second Afterbay
- 28G Devil Canyon Powerplant and Second Afterbay to Barton Road
- 28H Barton Road to Lake Perris
- 28J Perris Dam and Lake Perris

East Branch Extension

- 1 Devil Canyon Powerplant to Junction, Foothill Pipeline near Cone Camp Road
- 2A Junction, Foothill Pipeline near Cone Camp Road to Greenspot Pump Station
- 2B Greenspot Pump Station to Morton Canyon Valve Vault
- 2C Morton Canyon Valve Vault to Crafton Hills Pump Station
- 2D Junction, Foothill Pipeline Near Cone Camp Road to Citrus Pump Station
- 2E Citrus Pump Station to Crafton Hills Pump Station
- 3A Crafton Hills Pump Station to Crafton Hills Reservoir
- 3B Crafton Hills Reservoir to Carter Street Valve Vault
- 3C Carter Street Valve Vault to Garden Air Creek
- 3D Yucaipa Connector Pipeline to Yucaipa Pipeline Tie-in
- 3E Yucaipa Pipeline Tie-in to Carter Street Valve Vault
- 4A Garden Air Creek to Cherry Valley Pump Station
- 4B Cherry Valley Pump Station to Terminus at Noble Creek

West Branch, California Aqueduct

- 29A Junction, California Aqueduct through Oso Pumping Plant
- 29F Oso Pumping Plant through Quail Embankment
- 29G Quail Embankment through Warne Powerplant
- 29H Pyramid Dam and Lake
- 29J Pyramid Lake through Castaic Powerplant
- 30 Castaic Dam and Lake

Table 1 Summary of Permanent Aqueduct Capacity Transfers

| SWP Water Contractor | | Capacity Transfer | | | |
|--|----------------------------|-----------------------|----------------|--|--|
| Seller | Buyer | Amount (acre-feet) | Effective Year | Transfer Description | |
| Transfers under Monterey Amendment | | | | | |
| Kern | Mojave | 25,000 | 1998 | Purchased capacity upstream of Reach 31A | |
| Kern | Santa Clarita ^a | 41,000 | 2000 | Purchased capacity upstream of Reach 16A | |
| Kern | Palmdale | 4,000 | 2000 | Purchased capacity upstream of Reach 11B | |
| Kern | Alameda-Zone 7 | 7,000 | 2000 | Purchased capacity upstream of Reach 10A | |
| Kern | Alameda-Zone 7 | 15,000 | 2000 | Purchased capacity upstream of Reach 10A | |
| Kern | Alameda-Zone 7 | 10,000 | 2001 | Purchased capacity upstream of Reach 11B | |
| Kern | Solano | 5,756 | 2001 | Purchased capacity upstream of Reach 11B and Reach 31A | |
| Kern | Napa | 4,025 | 2001 | Purchased capacity upstream of Reach 11B and Reach 31A | |
| Kern | Alameda-Zone 7 | 2,219 | 2004 | Purchased capacity upstream of Reach 11B | |
| <i>Subtotal under Article 53</i> | | 114,000 | | | |
| Transfers outside of Monterey Amendment | | | | | |
| Tulare | Dudley Ridge | 3,973 | 2002 | Purchased capacity upstream of Reach 8D | |
| Tulare | AVEK | 3,000 | 2002 | Purchased capacity upstream of Reach 8D | |
| Tulare | Alameda-Zone 7 | 400 | 2003 | Purchased capacity upstream of Reach 8D | |
| Tulare | Kings | 5,000 | 2004 | Purchased capacity upstream of Reach 8D | |
| Tulare | Coachella | 9,900 | 2004 | Purchased capacity upstream of Reach 8D | |
| Metropolitan | Coachella | 88,100 | 2005 | Purchased capacity upstream of Reach 28J | |
| Metropolitan | Desert | 11,900 | 2005 | Purchased capacity upstream of Reach 28J | |
| Tulare | Kings | 305 | 2006 | Purchased capacity upstream of Reach 31A | |
| Tulare | Desert | 1,750 | 2010 | Purchased capacity upstream of Reach 17F | |
| Tulare | Coachella | 5,250 | 2010 | Purchased capacity upstream of Reach 17F | |
| Kern | Desert | 4,000 | 2010 | Purchased capacity upstream of Reach 17F and Reach 31A | |
| Kern | Coachella | 12,000 | 2010 | Purchased capacity upstream of Reach 17F and Reach 31A | |
| Dudley Ridge | Mojave | 7,000 | 2010 | Purchased capacity upstream of Reach 8D | |
| Dudley Ridge | AVEK | 1,993 | 2014 | Purchased capacity upstream of Reach 8D | |
| Tulare | AVEK | 1,451 | 2014 | Purchased capacity upstream of Reach 8D | |
| Dudley Ridge | Mojave | 3,000 | 2015 | Purchased capacity upstream of Reach 8D | |
| Dudley Ridge | Mojave | 4,000 | 2020 | Purchased capacity upstream of Reach 8D | |
| <i>Subtotal outside of Article 53</i> | | 163,022 | | | |

^a Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

excess capacity are paid on an incremental-cost basis and not a proportionate-use basis. However, requested excess capacity is accounted for in the ratios applicable to minimum OMP&R costs.

Variable OMP&R Costs

Article 26(a) includes provisions to ensure that the variable OMP&R component of

the Transportation Charge will result in a return to DWR of those costs that depend on and vary with the amount of SWP water deliveries. (The minimum OMP&R component results in a return of those operating costs that do not vary with deliveries.) Under Article 26(a) all such costs for a reach for a given year will be allocated among SWP water contractors in proportion

to the actual annual use of that reach by the respective SWP water contractors.

Table B-3 summarizes the total power costs, credits, and transmission costs for each aqueduct pumping and power recovery plant. Variable costs are as follows.

- Costs of capacity and energy used exclusive of associated power transmission and station service charges (transmission and station service costs that are independent and vary with power usage are classified as minimum OMP&R costs).
- Credits for capacity and energy produced at aqueduct power recovery plants (treated as negative costs).
- Payments for replacement of major plant machinery components having economic lives shorter than the project repayment period. (In 1997, DWR discontinued charging for a sinking fund for replacements. Replacement costs, for 1999 and thereafter, are to be paid on an annual basis as the costs are incurred.)
- Beginning in 2005, a portion of transmission expenditures that will depend on and vary with water and power usage. These costs will be included as part of the variable component.

Table B-3 excludes plant capacity and energy costs associated with surplus and unscheduled water service after May 1, 1973. Prior to that date, surplus water service was charged the same unit variable OMP&R component as allocated water service. An amendment to the water supply contracts in 1973 significantly changed the rate structure for surplus water service. Capacity and energy costs for pumping surplus and unscheduled water were allocated directly to those SWP water contractors receiving surplus and unscheduled water service. A contract amendment in 1991 again revised the rate structure to provide for payment of costs through a melded power rate.

These revisions to charges for surplus and unscheduled water are effective from the date of the amendments and are not applied to past charges.

An interruptible water program was established in 1994. This program, later renamed as the Article 21 program, is based on individual annual contracts; costs for Article 21 water actually delivered are included in *Table B-3*.

Water Conveyance

Tables B-4, B-5A, B-5A-Adj, B-5B, and B-6 present water conveyance quantities that form the basis for allocating costs.

Table B-4 presents the schedules of annual allocations as set forth in Table A and Article 6(a) of each water supply contract.

Table B-5A shows amounts of actual and projected allocated water quantities delivered from each aqueduct reach to each SWP water contractor. Projected deliveries for years 2019 through 2035 are based on SWP water contractors' requests for future water deliveries. The quantities included in *Table B-5A* also include non-project water delivered to SWP water contractors, surplus water deliveries prior to May 1, 1973, and actual Article 21 water deliveries in 1994 and thereafter.

Table B-5A-Adj presents a summary of accounting adjustments that result from water deliveries not originating from the Sacramento-San Joaquin Delta (Delta). The methodologies used to calculate various components are based on cumulative charges from the Delta through facilities conveying water to a specific repayment reach. When water is introduced to the SWP downstream of the Delta, SWP water contractors require an adjustment, or credit, for those facilities not used to convey the water.

Table B-5B presents a summary of actual and projected annual allocated water quantities for each SWP water contractor. The quantities also include amounts of non-project water and surplus water delivered prior to May 1, 1973, and actual deliveries of Article 21 water in 1994 and thereafter.

Table B-6 summarizes the annual allocated water quantities conveyed or to be conveyed through each aqueduct pumping plant or power plant for each of the following functions.

- *Deliveries—Water Supply.* Water made available to SWP water contractors at down-aqueduct delivery structures, including certain hypothetical quantities to facilitate cost allocations, for those years when deliveries are made from net annual storage withdrawals. The net annual amounts of storage withdrawals are hypothetically added to the actual amounts conveyed from the Delta to the reservoirs, since deliveries made from storage withdrawals bear the same variable OMP&R costs per acre-foot as they would if the deliveries were actually conveyed from the Delta in that year. The hypothetical increases in the deliveries made from reservoir storage withdrawals are offset by equal credits to the minimum OMP&R costs of the respective reservoirs. Thus, the variable OMP&R components per acre-foot (Table B-17) may be applied to the total annual quantities delivered either from aqueduct reservoir storage or from the Delta.
- *Initial Fill Water.* Water required for initial filling of down-aqueduct reaches and reservoirs or for repayment of pre-consolidation water used during construction.
- *Deliveries—Recreation.* Water delivered to down-aqueduct recreation developments or used for fish and wildlife enhancement.
- *Operational Losses.* Water lost through evaporation and seepage from all down-aqueduct reaches.
- *Reservoir Storage Changes.* Water placed in down-aqueduct reservoir storage

after initial filling of the reservoirs, including projected net annual storage accretions (positive values) and withdrawals (negative values) for all down-aqueduct reservoirs of the Project Transportation Facilities.

Variable OMP&R costs (Table B-12) that are allocable to storage accretions are assigned to the minimum OMP&R costs of the respective reservoirs. With the exception of Banks Pumping Plant, "Reservoir Storage Changes" also includes SWP water placed into Southern California groundwater storage from 1978 through 1982 (as positive amounts); and water withdrawn from storage and delivered to SWP water contractors in 1979, 1982, 1987, 1988, and 1989 (as negative amounts). At Banks Pumping Plant, groundwater additions and withdrawals are included in "Conservation Water."

Table B-6 also summarizes the following two amounts under the heading *Conservation Water* (Column 25).

- (1) Net annual water amounts stored and projected to be stored in San Luis Reservoir.
- (2) Water lost and projected to be lost through evaporation and seepage from San Luis Reservoir and from the water conservation portion of the California Aqueduct.

"Conservation Water" includes initial fill water, operational losses, and net annual storage changes associated with San Luis Reservoir and the portion of the California Aqueduct that is allocated to conservation. The same allocation procedure outlined previously for Transportation Facilities also applies to water delivered from storage in Conservation Facilities, except that the hypothetical cost increases are added to the variable OMP&R cost to be reimbursed through the Transportation Charge and deducted from the minimum OMP&R

costs to be reimbursed through the Delta Water Charge.

San Luis Reservoir is operated to conserve water for future delivery to downstream SWP water contractors. To account for costs associated with reservoir storage, the power and replacement costs of Banks Pumping Plant (a joint Transportation-Conservation Facility) that are allocated to the conveyance of annual conservation water quantities are transferred to the capital costs of San Luis Reservoir (during initial fill) or to the minimum OMP&R costs of San Luis Reservoir (following initial fill).

In years of net storage withdrawal from San Luis Reservoir, a portion of the minimum OMP&R cost of the reservoir is transferred to the variable OMP&R cost of Banks Pumping Plant. That transfer is equal to the variable OMP&R cost per acre-foot of delivery through Banks Pumping Plant for that year, multiplied by the acre-feet of deliveries derived from San Luis Reservoir storage for that year. Table B-6 also includes amounts of non-project water and surplus water delivered prior to May 1, 1973, and actual deliveries of Article 21 water in 1994 and thereafter.

Bases for Reimbursable Costs

This section describes the methods used to derive the costs allocated by the procedures outlined in the preceding section. A diagram of the cost derivation process is shown at the top of *Figure B-1*.

First, the capital and minimum OMP&R costs of all SWP facilities are allocated among the various project purposes in accordance with the allocation percentages in *Table 2*. Those percentages may be subject to revision in the future.

The redeterminations in this appendix involve only the SWP costs that are allocated to water supply and power generation.

Capital Costs

Capital costs used in the redeterminations in this appendix reflect costs as of December 31, 2018; future cost escalation will be reflected in subsequent bulletins.

Table B-7 presents a reconciliation of estimated total capital costs of each Project Conservation Facility and each Project Transportation Facility. This table shows the relationship of Project Conservation and Transportation costs allocated to SWP water contractors (*Tables B-8, B-9, B-10, and B-13*) to the total SWP capital costs projected by DWR.

Table B-8 shows costs incurred and projected to be incurred by DWR in connection with each SWP water contractor's turnouts. Costs incurred by DWR for both State-constructed and SWP water contractor-constructed delivery structures are paid directly by the SWP water contractors for which the structures are built. DWR incurs design review and construction inspection costs in connection with SWP water contractor-constructed turnouts.

Table B-9 lists costs and payments for excess capacity built into SWP Transportation Facilities in accordance with amendments to contracts with The Metropolitan Water District of Southern California (Metropolitan), San Gabriel Valley Municipal Water District, and Antelope Valley-East Kern Water Agency, including the following:

- additional costs incurred by DWR for requested excess capacity;
- advances by SWP water contractors of funds for such costs; and
- credits for advances in excess of costs which were applied to respective SWP water contractors' installments of the capital cost component of the Transportation Charge in 1981.

Table 2 Project Purpose Cost Allocation Factors (percentages)^a

| PROJECT FACILITIES | Water Supply and Power Generation | | All Other Purposes (Nonreimbursable) | |
|---|-----------------------------------|---------------------|--------------------------------------|---------------------|
| | Capital Costs | Minimum OMP&R Costs | Capital Costs | Minimum OMP&R Costs |
| Project Conservation Facilities | | | | |
| Frenchman Dam and Lake | 21.5 | 0.0 | 78.5 | 100.0 |
| Antelope Dam and Lake | 0.0 | 0.0 | 100.0 | 100.0 |
| Grizzly Valley Dam and Lake Davis | 1.0 | 1.8 | 99.0 | 98.2 |
| Oroville Division ^b | 97.1 | 99.5 | 2.9 | 0.5 |
| California Aqueduct, Delta to Dos Amigos Pumping Plant | 96.6 | 96.7 | 3.4 | 3.3 |
| Delta Facilities | | | | |
| Peripheral Canal Related | 86.0 | 86.0 | 14.0 | 14.0 |
| Remaining of Delta Facilities | 96.6 | 96.7 | 3.4 | 3.3 |
| Transportation Facilities | | | | |
| Grizzly Valley Pipeline | 100.0 | 100.0 | 0.0 | 0.0 |
| North Bay Aqueduct | 100.0 | 100.0 | 0.0 | 0.0 |
| South Bay Aqueduct | | | | |
| Del Valle Dam and Lake del Valle | 25.2 | 22.0 | 74.8 ^c | 78.0 ^d |
| Remainder of South Bay Aqueduct | 100.0 | 100.0 | 0.0 | 0.0 |
| California Aqueduct | | | | |
| Delta to Dos Amigos Pumping Plant | 96.6 | 96.6 | 3.4 | 3.4 |
| Dos Amigos Pumping Plant to termini (excluding Coastal Branch) ^{e,f} | 94.3 / 99.6 | 96.9 / 99.6 | 5.7 / 0.4 | 3.1 / 0.4 |
| Aqueduct and Plants ^{e,f} | 94.3 / 99.6 | 96.9 / 99.6 | 5.7 / 0.4 | 3.1 / 0.4 |
| Pyramid Dam and Lake ^{e,f} | 94.3 / 96.1 | 96.9 / 96.1 | 5.7 / 3.9 | 3.1 / 3.9 |
| Castaic Dam and Lake ^{e,f} | 94.3 / 91.1 | 96.9 / 91.1 | 5.7 / 8.9 | 3.1 / 8.9 |
| Silverwood Dam and Lake ^{e,f} | 94.3 / 85.3 | 96.9 / 85.3 | 5.7 / 14.7 | 3.1 / 14.7 |
| Perris Dam and Lake ^{e,f} | 94.3 / 67.7 | 96.9 / 67.7 | 5.7 / 32.3 | 3.1 / 32.3 |
| Coastal Branch | 100.0 | 100.0 | 0.0 | 0.0 |

^a Percentages indicated apply to the majority of the facilities with minor exceptions.^b Percentages indicated are applicable to the remaining costs of division after excluding costs allocated to flood control that are reimbursed by the federal government (22 percent of capital costs) and excluding specific power costs of Hyatt and Thermalito powerplants and switchyards.^c Percentage indicated consists of 48.0 percent of costs allocated to recreation and 26.8 percent to flood control.^d Percentage indicated consists of 44.9 percent of costs allocated to recreation and 33.1 percent to flood control.^e Percentage indicated is used for 2012 and previous years.^f Percentage indicated is used for 2013 and forward.

Under Amendment 2 of Metropolitan's contract, 809 cubic feet per second of excess capacity was originally constructed in reaches of the West Branch at Metropolitan's request. That capacity was reclassified as basic capacity of SWP Transportation Facilities under Amendment 7. Metropolitan paid \$16.3 million as a prepayment of the capital cost component of the Transportation Charge in lieu of advancing funds for the original requested capacity.

Amendment 5 to Metropolitan's contract requires that additional costs for modifications to the Santa Ana Pipeline (required for enlargement of Lake Perris) will be allocated to Metropolitan and returned to DWR through payments of the Transportation Charge. The additional costs to be repaid through Metropolitan's capital cost component for the aqueduct reach from Devil Canyon Powerplant to Barton Road total about \$6.7 million (see Bulletin 132-72, page 98).

Table B-10 presents the actual and projected annual capital costs of each aqueduct reach that will eventually be returned to DWR, with interest, through SWP water contractors' payments of the capital cost component of the Transportation Charge and payment of debt service under the Devil Canyon-Castaic contracts.

Annual Operating Costs

Annual operating costs allocable to water supply and power generation are returned to DWR through the minimum OMP&R components of the Delta Water Charge and the Transportation Charge and through a portion of the revenues from energy sales. All reimbursable operating costs of Project Conservation Facilities are included in the minimum OMP&R component of the Delta Water Charge.

Transportation and Devil Canyon-Castaic Contract Costs

Table B-11 shows the amounts of the actual and projected costs to be reimbursed through payments of the minimum OMP&R component of the Transportation Charge and allocated operating costs under the Devil Canyon-Castaic contract. The table includes the following seven types of operating costs incurred annually that do not vary with water quantities delivered to the SWP water contractors:

- (1) all direct labor charges for field operation and maintenance personnel, including associated indirect costs;
- (2) a distributed share of general operating costs that cannot be identified solely with one facility or aqueduct reach;
- (3) all electric power transmission and station service costs up to 2004, and electric power transmission and station service costs for 2005 and after that do not vary with power usage allocable to aqueduct pumping and recovery plants;
- (4) all costs for equipment, materials, and supplies;

- (5) portions of the power and replacement costs of all pumping plants and power plants that are up-aqueduct from Devil Canyon Powerplant and Castaic Powerplant and that are allocable to the annual conveyance of water lost to evaporation and seepage from respective aqueduct reaches or placed into storage in respective reservoirs of the Project Transportation Facilities (after initial fill);
- (6) credits, which offset those costs in (5) above, for deliveries drawn from reservoir storage; and
- (7) projected operating costs (labor only) were not escalated for calendar years 2020 and 2021, and escalation of certain projected operating costs (labor and operating expense) were 1 percent per year for 2022–2035. Labor and operating expense escalation rates were originally set at 4.0 percent per year for 2020 through 2021, in the Bulletin 132-19 Criteria Memorandum; however, operating cost escalations were eliminated in the Statements of Charges.

Table B-12 shows the portions of variable OMP&R costs in Table B-3 that are allocable to the water delivery quantities included in Table B-6 and reimbursed through payments of the variable OMP&R component of the Transportation Charge.

To derive Table B-12 costs, the following adjustments are made to Table B-3 costs.

- (1) Part of the variable OMP&R costs of each plant is allocated to recreation. The allocation to recreation is in proportion to the quantity of water conveyed through each plant each year for delivery to on-shore recreational developments. That portion of variable plant costs attributable to the initial fill of aqueduct reaches is allocated to the joint capital costs of respective down-aqueduct reaches and reservoirs.

- (2) That portion of costs attributable to evaporation and seepage is allocated to the joint minimum OMP&R costs of respective down-aqueduct reaches and reservoirs.
- (3) Adjustments are made for additions or withdrawals from storage in aqueduct reservoirs. In years when water is added to storage in aqueduct reservoirs, the cost of conveying this water into storage is charged to the minimum OMP&R costs of the corresponding reservoir. In years when storage in aqueduct reservoirs is decreased for the purpose of making deliveries, a credit is applied to the minimum OMP&R costs of the reservoir from which the storage is released. This credit is equal to the number of acre-feet of storage reduction times the variable OMP&R unit rate for the year the storage is released. The unit rate is equal to the variable OMP&R unit rate for the year the water is taken from storage.
- (4) That portion of costs attributable to pumping water to replace evaporation and seepage losses and for additions or withdrawals from storage in San Luis Reservoir is charged to the minimum OMP&R component of the Delta Water Rate.

The remaining costs are allocated to transportation water supply and repaid by the SWP water contractors.

Conservation Capital and Operating Costs

Table B-13 is a summary of actual and projected capital and operating costs of the initial Project Conservation Facilities. These costs are reimbursed through payments by SWP water contractors under the Delta Water Charge, Oroville power sales, and Gianelli Pumping-Generating Plant credits. *Table B-13* also shows credits applied to the reimbursable capital costs of the initial Project Conservation Facilities in accordance

with negotiated settlements concerning incurred planning costs for the period from 1952 through 1978.

Project Water Charges

This section describes the redetermination of past and projected components of the Transportation Charge for annual revision of Tables C through G of each water supply contract. This section also describes the derivation of the unit Delta Water Rates and the Water System Revenue Bond Surcharge.

A summary of equivalent unit charges for each acre-foot of allocated water service is also included for each SWP water contractor and each aqueduct reach. A diagram of all calculations may be found on the lower half of *Figure B-1*.

Transportation Charges

The accumulation of allocated costs of each aqueduct reach to each SWP water contractor is the basis for the Transportation Charge components.

Table B-14 summarizes each SWP water contractor's share of the capital costs of the aqueduct reaches presented in *Table B-10*. Those amounts are determined by applying proportionate-use ratios set forth in *Table B-1* to the costs in *Table B-10*. The resulting allocated costs are set forth in *Table C* of the respective water supply contracts.

Prepayments of the capital cost component, required under Metropolitan's Amendment 7, are included as negative capital costs in *Table B-14* and *Table C* of Metropolitan's Statement of Charges. Solano County Water Agency, Empire West Side Irrigation District, and Santa Clarita Valley Water Agency also prepaid capital costs (Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018).

See Table B-14 footnotes). Table B-14 includes costs of the East Branch Extension to provide water service to San Bernardino Valley Municipal Water District and San Gorgonio Pass Water Agency.

Both Table B-14 and Table C of the six SWP water contractors for project water service below Devil Canyon Powerplant and Castaic Powerplant include the capital costs reimbursable under the Devil Canyon-Castaic contract.

Table B-15 summarizes capital cost components of the Transportation Charge for each SWP water contractor for each year of the project repayment period. By the year 2035, the capital cost components shown in Table B-15 will recover the costs shown in Table B-14, with interest at the Project Interest Rate of 4.610 percent per annum and based on the amortization schedules included in *Table 3*.

Those estimated components, subsequently adjusted for prior overpayments or underpayments, are included in Table D of the water supply contracts. Costs of excess capacity are billed separately and are not included in Table B-15.

Table B-15 includes the debt service payments due from the six SWP water contractors down-aqueduct from Devil Canyon Powerplant and Castaic Powerplant, in accordance with terms of the Devil Canyon-Castaic contract.

Table B-16A summarizes the minimum OMP&R components of the Transportation Charge for each year of the project repayment period. Those estimated components, subsequently adjusted for prior overpayments or underpayments, are included in Table E of the respective water supply contracts.

The total amounts included in Table B-16A are determined by applying the proportionate-use ratios in Table B-2 to the reach costs in Table B-11 and adding

Table 3 Criteria for Amortizing Capital Costs of Transportation Facilities

| Contractor | Year of Initial Payment ^a |
|--|--------------------------------------|
| Alameda County Flood Control and Water Conservation District, Zone 7 | 1963 ^b |
| Alameda County Water District | 1963 |
| Antelope Valley-East Kern Water Agency | 1963 |
| City of Yuba City | c |
| Coachella Valley Water District | 1964 |
| County of Butte | c |
| County of Kings | 1968 |
| Crestline-Lake Arrowhead Water Agency | 1964 |
| Desert Water Agency | 1963 ^d |
| Dudley Ridge Water District | 1968 ^e |
| Empire West Side Irrigation District | 1968 ^e |
| Kern County Water Agency | |
| Agricultural Use | 1968 ^e |
| Municipal and Industrial Use | 1968 ^e |
| Littlerock Creek Irrigation District | 1964 |
| The Metropolitan Water District of Southern California | 1963 |
| Mojave Water Agency | 1964 |
| Napa County Flood Control and Water Conservation District | 1966 |
| Oak Flat Water District | 1968 |
| Palmdale Water District | 1964 |
| Plumas County Flood Control and Water Conservation District | 1970 |
| San Bernardino Valley Municipal Water District | 1963 |
| San Gabriel Valley Municipal Water District | 1963 ^d |
| San Gorgonio Pass Water Agency | 1963 ^d |
| San Luis Obispo County Flood Control and Water Conservation District | 1964 ^f |
| Santa Barbara County Flood Control and Water Conservation District | 1964 |
| Santa Clara Valley Water District | 1963 |
| Santa Clarita Valley Water Agency | 1964 ^g |
| Solano County Water Agency | 1973 |
| Tulare Lake Basin Water Storage District | 1968 ^e |
| Ventura County Watershed Protection District | 1964 |

^a Allocated capital costs of transportation facilities amortized in equal annual installments unless otherwise noted.

^b Principal payments on each annual capital cost prior to 1971 delayed until calendar year 1972, except payments for 1963.

^c For City of Yuba City and County of Butte, payments for Delta Water Charge only.

^d Payment deferred for 1963 and added to 1964 payment with accrued interest.

^e For Dudley Ridge Water District, Empire West Side Irrigation District, Kern County Water Agency (agricultural use), Oak Flat Water District, and Tulare Lake Basin Water Storage District, according to Article 45 of the contracts for supply of agricultural water, capital costs of transportation facilities allocated to agricultural water supply are amortized by using an equivalent unit rate per acre-foot applied to the annual allocations (Table B-4) through the project repayment period.

^f For San Luis Obispo and Santa Barbara, all principal and interest payments for costs of the Coastal Stub were deferred until 1976.

^g Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

Municipal Water Quality Investigation program costs to participating SWP water contractors.

Table B-16A excludes Off-Aqueduct Power Facility charges, which are included separately in Table B-16B. Both Table B-16A and Table E include the operating costs payable under the Devil Canyon-Castaic contract for the six SWP water contractors down-aqueduct from Devil Canyon Powerplant and Castaic Powerplant.

As part of operating agreements with DWR, Kern County Water Agency (Kern) was billed from 1963 through 1987 for any additional operating costs caused by early installation of units in Las Perillas and Badger Hill pumping plants by Berrenda Mesa Water Storage District (see Bulletin 132-71, page 7). Under those agreements, a portion of minimum OMP&R costs of Reach 31A were assigned directly to Kern, as shown in *Table 4*, with the remaining reach costs allocated by application of the proportionate-use ratios. DWR purchased the last unit, Unit No. 6, at Las Perillas and Badger Hill pumping plants in early 1997 to provide pumping capacity for deliveries to Coastal Area SWP water contractors, which began in 1997.

As a result of the Monterey Amendment, the costs related to this settlement are to be allocated among all SWP water contractors in proportion to their maximum Table A amounts. As costs are incurred, related charges will be included in the SWP water contractors' annual Statements of Charges as part of the minimum. Between 2002 and 2010, the Monterey Amendment litigation costs recovered from SWP water contractors were \$15.8 million.

Table B-16B summarizes annual Off-Aqueduct Power Facility charges allocated to each SWP water contractor, adjusted for prior overpayments or underpayments. Those charges are to repay all Off-Aqueduct

Power costs, including bond service, deposits for reserves, operation and maintenance costs, fuel costs, taxes, and insurance.

Adopted October 1, 1979, the General Bond Resolution requires that sufficient revenues be collected each year to repay all of those costs. In addition, an amount totaling 25 percent of the annual bond service is collected each year to ensure that sufficient

Table 4 Minimum OMP&R Costs of Reach 31A Assigned Directly to Kern County Water Agency (in dollars)

| Year | Direct Charges |
|--------------|------------------|
| 1969 | 46,511 |
| 1970 | 46,302 |
| 1971 | 140,074 |
| 1972 | 95,017 |
| 1973 | 72,454 |
| 1974 | 100,692 |
| 1975 | 127,456 |
| 1976 | 138,504 |
| 1977 | 120,753 |
| 1978 | 157,652 |
| 1979 | 121,231 |
| 1980 | 150,728 |
| 1981 | 75,866 |
| 1982 | 82,805 |
| 1983 | 90,007 |
| 1984 | 107,468 |
| 1985 | 159,406 |
| 1986 | 137,241 |
| 1987 | 127,073 |
| 1988 | 130,924 |
| 1989 | 128,468 |
| 1990 | 138,234 |
| 1991 | 139,527 |
| 1992 | 185,370 |
| 1993 | 219,334 |
| 1994 | 364,196 |
| 1995 | 272,341 |
| 1996 | 322,123 |
| Total | 3,997,767 |

funds are available to cover all annual costs. Any revenues collected and not needed during the year are refunded to the SWP water contractors in the next year.

Table 5 summarizes Off-Aqueduct Power Facility charges and credits related to deliveries for 2018. The ongoing Reid Gardner Powerplant closure costs related to the Reid Gardner Powerplant contract expiration in 2013 are tracked independently from annual Reid Gardner operating costs.

Table 6 shows projected Off-Aqueduct Power Facility charges. Defeasance of Off-Aqueduct Power facilities bonds occurred in June 2016, so no debt service charges or bond cover are included. Additionally, Reid Gardner, Unit 4 Powerplant remediation costs are projected for 2019, 2020, and 2021 and then only minor operating costs are projected post-2021.

Annual Off-Aqueduct Power Facility charges are allocated among SWP water contractors in proportion to the electrical energy required to pump allocated water for the year. The initial allocation for the Statements of Charges is based on estimates of energy to pump requested allocated water deliveries, based on a 60-percent allocation.

An interim adjustment in the allocation of Off-Aqueduct Power costs may be made in May of each year, based on updated cost estimates and April revisions in water delivery schedules. An additional adjustment is made the following year based on actual water deliveries and actual costs for the year.

The energy required to pump each SWP water contractor's water is calculated using the kilowatt-hour per acre-foot factors shown in *Table 7* for the pumping plants upstream from the delivery turnouts. The amounts shown include transmission losses.

Table B-17 presents a summary of actual and projected total variable OMP&R costs

Table 5 Summary of 2018 Off-Aqueduct Power Facility Charges and Credits (in dollars)

| Charges by Item | |
|----------------------------|------------------|
| Reid Gardner Powerplant | 0 |
| Reid Gardner Closure Costs | 2,330,182 |
| Bottle Rock Powerplant | 72,895 |
| South Geysers Powerplant | 0 |
| <i>Subtotal</i> | 2,403,077 |
| Credits by Item | |
| Power Sales | 0 |
| Net Total Charge | 2,403,077 |

Table 6 Projected Charges for Off-Aqueduct Power Facilities (in dollars)

| Year | Total Annual Cost | 25 Percent Bond Cover |
|-------------|--------------------------|------------------------------|
| 2019 | 3,580,185 | - |
| 2020 | 6,650,000 | - |
| 2021 | 10,650,000 | - |
| 2022 | 150,000 | - |
| 2023 | 150,000 | - |
| 2024 | 150,000 | - |
| 2025 | 150,000 | - |
| 2026 | 150,000 | - |
| 2027 | 150,000 | - |
| 2028 | 150,000 | - |
| 2029 | 150,000 | - |
| 2030 | 150,000 | - |
| 2031 | 150,000 | - |
| 2032 | 150,000 | - |
| 2033 | 150,000 | - |
| 2034 | 150,000 | - |
| 2035 | 150,000 | - |

for each acre-foot conveyed through each aqueduct pumping plant and power plant for each year of the project. The following provisions are for calculating the variable OMP&R component of the Transportation Charge.

- An annual charge per acre-foot of projected water deliveries to all SWP water contractors served from or through each reach is determined so the projected variable OMP&R costs to be incurred for each reach will be returned to DWR.
- The total annual variable OMP&R component for any SWP water contractor

Table 7 Kilowatt-Hour per Acre-Foot Factors for Allocating Off-Aqueduct Power Facility Costs

| Pumping Plant | kWh per acre-foot^a | |
|---------------------------------|--------------------------------------|-----------------------|
| | At Plant | Cumulative from Delta |
| Barker Slough | 223 | 223 |
| Cordelia-Benicia | 434 | 657 |
| Cordelia-Vallejo | 178 | 401 |
| Cordelia-Napa | 563 | 786 |
| Banks (Delta) | 296 | 296 |
| South Bay (including Del Valle) | 869 | 1,165 |
| Dos Amigos | 138 | 434 |
| Buena Vista | 242 | 676 |
| Teerink | 295 | 971 |
| Chrisman | 639 | 1,610 |
| Edmonston | 2,236 | 3,846 |
| Pearblossom | 703 | 4,549 |
| Greenspot | 871 | 5,420 |
| Citrus | 1,240 | 5,789 |
| Crafton Hills | 1,087 | 6,876 |
| Cherry Valley | 224 | 7,100 |
| Oso | 280 | 4,126 |
| Las Perillas | 77 | 511 |
| Badger Hill | 200 | 711 |
| Devil's Den | 705 | 1,416 |
| Bluestone | 705 | 2,121 |
| Polonio Pass | 705 | 2,826 |

^aIncludes transmission losses.

for a given reach is obtained by multiplying the unit charge associated with that reach by the quantity of water actually delivered from or through the reach to the SWP water contractor.

The data summarized in Table B-17 are derived by dividing the costs shown in Table B-3 by the water quantities shown in Table B-6. However, certain costs included in Table B-3 for extra peaking service, which would otherwise constitute variable OMP&R costs, are assigned directly to SWP water contractors requesting this type of service (see Bulletin 132-71, page 21, and Water Service Contractors Council Memo No. 593, July 10, 1970). Those costs are excluded from the unit charges shown in Table B-17. Peaking charges based on additional capacity ceased in 1983. Since 1984, costs are based on power market energy rates. The amounts of extra peaking charges for additional power costs are shown in *Tables 8 and 9*.

Unit rates shown in Table B-17 constitute the rates for the pumping plants and power plants listed. The cumulative rates constitute the total rates, cumulative from the Sacramento-San Joaquin Delta, and are applicable to deliveries from or downstream of the pumping plants and power plants. Extra peaking service costs are excluded.

Table B-18 shows the variable OMP&R components of the Transportation Charge for each SWP water contractor for each year of the project repayment period. Table B-18 is developed from the costs per acre-foot included in Table B-17 and the delivery quantities for each SWP water contractor from each reach as indicated in Table B-5A and Table B-5A-Adj, plus any costs for extra peaking service. Those estimated components, subsequently adjusted for prior overpayments or underpayments, are included in Table F of the respective water supply contracts.

Table B-19 summarizes the annual Transportation Charges for each SWP water contractor (the sum of the corresponding amounts included in Tables B-15, B-16A, B-16B, and B-18). Those estimated payments, subsequently adjusted for prior overpayments or underpayments, are set forth in Table G of the respective water supply contracts.

In accordance with provisions of the Devil Canyon-Castaic contract, Table B-19 and Table G include amounts of debt service and operating cost payments due from the six SWP water contractors located down-aqueduct from Devil Canyon and Castaic powerplants.

Delta Water Charges

Table B-20A presents the calculation of the Delta Water Rate for the initial Conservation Facilities applicable in 2020 in accordance with the amended Article 22(e) and 22(g) of all 29 water supply contracts. The Delta Water Rate was calculated at a Project Interest Rate of 4.610 percent, based on Conservation Facility costs shown in Table B-13. That Delta Water Rate is used to compute projected Delta Water Charges under Article 53(i) for the SWP water contractors who have executed the Monterey Amendment. Included in Table B-20A is the Delta Water Rate for the two SWP water contractors who have not executed the Monterey Amendment: Plumas County Flood Control and Water Conservation District and Empire West Side Irrigation District.

Table B-20B shows each component of the 2020 Delta Water Rate from Table B-20A.

Table B-21 summarizes the annual Delta Water Charge for each SWP water contractor. The projected charges in Table B-21 are developed by multiplying the total rate per acre-foot, as shown in Table B-20A, by the amount of allocated water for each SWP water contractor, as shown in Table B-4.

The projected Delta Water Charges through 2035 include the assumption of escalation of projected operating costs at 1.0 percent per year for 2022–2035.

Water System Revenue Bond Surcharge

Table B-22 summarizes the Water System Revenue Bond (WSRB) Surcharge to the capital cost component of the Delta Water and Transportation charges for each SWP water contractor. The surcharge shown in Table B-22 is the difference between the capital cost component and the financing costs of WSRB Series B through Series AY. This surcharge is levied according to an amendment to the water supply contracts, which was signed by all of the SWP water contractors.

Total Water Charges

Table B-23 summarizes the total annual charges to each SWP water contractor (the sum of the Transportation Charge in Table B-19, the Delta Water Charge in Table B-21, and the WSRB Surcharge in Table B-22). The charges do not reflect past payments by SWP water contractors and are unadjusted for prior overpayments or underpayments.

Equivalent Total Water Charges

Table B-24 presents the Transportation Charge and Delta Water Charge in terms of the equivalent unit charge for each acre-foot of allocated water now projected for delivery to the respective SWP water contractors.

These equivalent charges would provide the same principal sum at the end of the project repayment period as annual payments to be made as part of the Delta Water Charge and Transportation Charge, plus interest at the Project Interest Rate, if applied to each acre-foot of allocated water delivered to date; all surplus water delivered prior to May 1, 1973; all Article 21 water deliveries in

Table 8 Extra Peaking Charges for Additional Power, by Pumping Plant (in dollars)

| Year | Cordelia Napa | Cordelia Solano | Barker Slough | South Bay | Banks | Dos Amigos | Badger Hill | Buena Vista | Teerink | Chrisman | Edmonston | Pearblossom | Oso | Total |
|---------------|---------------|-----------------|---------------|---------------|------------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|------------|------------------|
| 1972 | 0 | 0 | 0 | 0 | 0 | 10,579 | 24,700 | 0 | 0 | 0 | 0 | 0 | 0 | 35,279 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 6,016 | 0 | 0 | 0 | 0 | 0 | 0 | 6,016 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 7,140 | 0 | 0 | 0 | 0 | 0 | 0 | 7,140 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 494 | 6,397 | 0 | 0 | 0 | 0 | 0 | 0 | 6,891 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 1,981 | 0 | 0 | 0 | 0 | 0 | 0 | 1,981 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 45,145 | 3,680 | 0 | 0 | 0 | 0 | 0 | 0 | 48,825 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 3,306 | 0 | 0 | 0 | 0 | 0 | 0 | 3,306 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 12,126 | 0 | 0 | 0 | 0 | 0 | 0 | 12,126 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 89,339 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 89,339 |
| 1983 | 0 | 0 | 0 | 35 | 7,594 | 3,534 | 152 | 0 | 0 | 0 | 0 | 0 | 0 | 11,315 |
| 1984 | 0 | 0 | 0 | 2,096 | 84,396 | 38,607 | 7,203 | 11,173 | 3,823 | 3,593 | 0 | 0 | 0 | 150,891 |
| 1985 | 0 | 0 | 0 | 1,480 | 19,612 | 8,841 | 763 | 4,488 | 4,412 | 8,929 | 28,353 | 0 | 0 | 76,878 |
| 1986 | 0 | 0 | 0 | 0 | 1,864 | 863 | 0 | 291 | 354 | 766 | 2,683 | 0 | 0 | 6,821 |
| 1987 | 0 | 0 | 0 | 604 | 17,129 | 7,838 | 835 | 2,295 | 1,806 | 3,460 | 11,058 | 0 | 0 | 45,025 |
| 1988 | 639 | 39 | 287 | 894 | 43,475 | 20,082 | 2,213 | 5,792 | 4,367 | 8,272 | 25,886 | 0 | 0 | 111,946 |
| 1989 | 2,491 | 566 | 1,483 | 70 | 40,251 | 18,642 | 1,935 | 3,401 | 1,531 | 2,058 | 3,793 | 0 | 0 | 76,221 |
| 1990 | 45 | 0 | 18 | 343 | 19,524 | 9,044 | 0 | 150 | 145 | 314 | 643 | 0 | 0 | 30,226 |
| 1991 | 903 | 0 | 281 | 0 | 21 | 8 | 0 | 15 | 17 | 39 | 139 | 41 | 0 | 1,464 |
| 1992 | 208 | 117 | 203 | 0 | 7,070 | 2,502 | 0 | 182 | 190 | 435 | 0 | 0 | 0 | 10,907 |
| 1993 | 0 | 681 | 889 | 4,483 | 123,080 | 54,741 | 0 | 8,898 | 5,458 | 10,900 | 35,068 | 11,139 | 0 | 255,337 |
| 1994 | 0 | 366 | 393 | 679 | 6,566 | 2,795 | 454 | 1,083 | 155 | 357 | 1,121 | 0 | 132 | 14,101 |
| 1995 | 0 | 0 | 0 | 1,717 | 24,464 | 9,422 | 27 | 1,865 | 3,475 | 782 | 1,104 | 400 | 0 | 43,256 |
| 1996 | 4 | 0 | 1 | 1,983 | 10,031 | 4,976 | 0 | 391 | 432 | 1,015 | 3,404 | 1,160 | 0 | 23,397 |
| 1997 | 0 | 1,780 | 2,152 | 3,107 | 337,557 | 165,774 | 1,753 | 34,604 | 12,296 | 15,910 | 21,028 | 0 | 0 | 595,761 |
| 1998 | 0 | 0 | 0 | 20,966 | 235,693 | 106,251 | 2,354 | 697 | 848 | 1,836 | 6,426 | 0 | 0 | 375,071 |
| 1999 | 0 | 0 | 0 | 0 | 63,196 | 26,235 | 0 | 3,394 | 4,136 | 8,959 | 31,350 | 7,740 | 0 | 145,010 |
| 2000– 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 4,290 | 3,549 | 5,707 | 38,457 | 1,041,323 | 637,838 | 70,909 | 78,719 | 43,445 | 67,625 | 172,056 | 20,480 | 132 | 2,184,530 |

Table 9 Extra Peaking Charges for Additional Power, by Contractor (in dollars)

| Year | Napa | Solano | Alameda-Zone 7 | Alameda-County | Santa Clara | Dudley Ridge | Empire | Kern | Kings | Oak Flat | Tulare | AVEK | Coachella | Desert | Littlerock | Palmdale | San Gabriel | Santa Clarita ^a | Total |
|--------------|--------------|--------------|----------------|----------------|--------------|---------------|--------------|------------------|--------------|--------------|----------------|----------------|---------------|---------------|--------------|---------------|---------------|----------------------------|------------------|
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35,269 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 35,279 | |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,016 | |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,140 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,140 | |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,891 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,891 | |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,981 | |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 2,035 | 44,484 | 42 | 0 | 0 | 2,264 | 0 | 0 | 0 | 0 | 0 | 48,825 | |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,821 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 485 | |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,951 | 0 | 0 | 0 | 0 | 0 | 175 | 0 | 0 | 0 | 12,126 | |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 2,173 | 0 | 0 | 0 | 0 | 4,671 | 0 | 0 | 0 | 0 | 0 | 422 | |
| 1983 | 0 | 0 | 0 | 0 | 0 | 48 | 9,511 | 0 | 0 | 1,365 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,315 | |
| 1984 | 0 | 0 | 0 | 0 | 0 | 2,874 | 0 | 0 | 144,021 | 281 | 809 | 0 | 0 | 0 | 0 | 0 | 0 | 2,906 | |
| 1985 | 0 | 0 | 0 | 0 | 0 | 2,029 | 0 | 64 | 25,664 | 0 | 98 | 0 | 48,767 | 0 | 0 | 0 | 0 | 256 | |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 2,194 | 4,614 | 0 | 0 | 0 | 0 | 6,821 | |
| 1987 | 0 | 0 | 0 | 0 | 0 | 599 | 313 | 84 | 24,141 | 0 | 95 | 0 | 18,207 | 0 | 0 | 0 | 0 | 545 | |
| 1988 | 892 | 73 | 665 | 561 | 0 | 1,853 | 1,404 | 58,905 | 0 | 72 | 2,368 | 44,526 | 0 | 0 | 0 | 0 | 0 | 627 | |
| 1989 | 3,478 | 1,062 | 96 | 0 | 0 | 13 | 403 | 55,085 | 0 | 239 | 8,278 | 0 | 0 | 0 | 1,035 | 5,489 | 0 | 1,043 | |
| 1990 | 63 | 0 | 470 | 0 | 0 | 0 | 0 | 28,587 | 0 | 0 | 0 | 0 | 0 | 812 | 0 | 0 | 0 | 30,226 | |
| 1991 | 1,184 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,464 | |
| 1992 | 271 | 257 | 0 | 0 | 0 | 0 | 49 | 10,109 | 221 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,907 | |
| 1993 | 0 | 1,570 | 6,122 | 0 | 0 | 0 | 3,757 | 97,812 | 504 | 0 | 74,577 | 0 | 24,983 | 41,156 | 0 | 4,856 | 0 | 255,337 | |
| 1994 | 0 | 759 | 886 | 0 | 0 | 0 | 7 | 9,933 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 14,101 | |
| 1995 | 0 | 0 | 2,353 | 0 | 0 | 0 | 10,197 | 0 | 28,085 | 310 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | |
| 1996 | 5 | 0 | 81 | 2,612 | 0 | 334 | 205 | 4,552 | 969 | 0 | 7,809 | 0 | 0 | 0 | 3,598 | 3,232 | 0 | 23,397 | |
| 1997 | 0 | 3,932 | 3,999 | 0 | 0 | 6,190 | 0 | 546,733 | 0 | 40 | 0 | 0 | 0 | 0 | 34,867 | 0 | 0 | 595,761 | |
| 1998 | 0 | 0 | 19,666 | 8,442 | 0 | 22,631 | 1 | 312,626 | 0 | 651 | 0 | 0 | 0 | 0 | 11,054 | 0 | 0 | 375,071 | |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76,425 | 0 | 0 | 6,922 | 0 | 0 | 0 | 11,576 | 50,087 | 0 | 145,010 | |
| 2000–2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total | 5,893 | 7,653 | 34,577 | 13,644 | 3,521 | 55,250 | 5,974 | 1,620,176 | 3,692 | 2,017 | 102,158 | 123,049 | 24,983 | 41,156 | 2,439 | 74,749 | 53,741 | 9,858 | 2,184,530 |

^a Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

1994 and thereafter; and all allocated water now projected to be delivered during the remainder of the project repayment period (Table B-5B).

The equivalent unit Delta Water Charges included in Table B-24 are greater than those presented in Table B-20A because water deliveries are less than the amounts shown in Table B-4.

Equivalent Water Costs by Reach

Table B-25 presents a summary of the equivalent unit transportation cost of conveying allocated water through respective aqueduct reaches of the Project Transportation Facilities.

Those unit costs provide the basis of charges assessed for extra service (such as delivery of allocations down-aqueduct from a SWP water contractor's turnout) and for wheeling service to entities other than the SWP water contractors.

The cumulative unit conveyance costs indicated for reaches in Table B-25 do not necessarily equal the equivalent unit Transportation Charges to SWP water contractors served from such reaches. The unit charges in Table B-24 account for the rate of water demand buildup and cost allocation factors of the individual SWP water contractors; however, the unit costs included in Table B-25 reflect the effect of melding the respective buildups and allocation criteria of all SWP water contractors whose allocations are conveyed through a given reach. Table B-25 also includes surplus water delivered prior to May 1, 1973, and Article 21 water deliveries in 1994 and thereafter.

East Branch Enlargement Charges

Table B-26 reflects DWR's projection of annual capital costs of the East Branch Enlargement for each aqueduct reach. These

projections will be redetermined in future bulletins to include the following:

- a reallocation of costs of constructing the present East Branch facilities between Alamo Powerplant and Silverwood Lake;
- a reallocation of costs of Silverwood Lake to reflect additional use as a result of East Branch Enlargement operation;
- a reallocation of costs of San Bernardino Tunnel to reflect redistribution of flow capacities necessary for the East Branch Enlargement facilities; and
- actual enlargement construction costs.

These costs will be recovered with interest from the seven Southern California SWP water contractors participating in the enlargement, in accordance with their amended water supply contracts (see *Table 10*).

Table B-27 lists the projected minimum OMP&R costs for each reach of the East Branch Enlargement. The costs are to be repaid by the seven SWP water contractors participating in the East Branch Enlargement. Currently, this table includes only minimum OMP&R costs attributable to the East Branch Enlargement. In accordance with Article 49(e)(1), the SWP water contractors participating in the East Branch Enlargement will also share in the remaining minimum OMP&R costs of the affected reaches, in accordance with a formula developed by DWR in consultation with the affected SWP water contractors.

Table B-28 shows each participating SWP water contractor's share of the estimated capital costs of the East Branch Enlargement shown in *Table B-26*.

Table B-29 shows the amounts of the annual capital cost components of the East Branch Enlargement Transportation Charge for each participating SWP water contractor. This component consists of each SWP water

Table 10 Determination of Factors for Distributing Capital and Minimum OMP&R Costs of East Branch Enlargement Facilities among Participating Contractors

| Reach Number | Description |
|--------------|---|
| 18A | Junction, West Branch, California Aqueduct through Alamo Powerplant |
| 19 | Alamo Powerplant to Fairmont |
| 20A | Fairmont through 70th Street West |
| 20B | 70th Street West to Palmdale |
| 21 | Palmdale to Littlerock Creek |
| 22A | Littlerock Creek to Pearblossom Pumping Plant |
| 22B | Pearblossom Pumping Plant to West Fork Mojave River |
| 23B | West Fork Mojave River to Silverwood Lake (excluding Mojave Siphon Powerplant facilities) |
| 23C | Mojave Siphon Powerplant facilities |
| 24 | Cedar Springs Dam and Silverwood Lake |
| 25 | Silverwood Lake to South Portal, San Bernardino Tunnel |
| 26A | South Portal, San Bernardino Tunnel through Devil Canyon Powerplant and Second Afterbay |
| 26B | Devil Canyon Powerplant Bypass |

Share of Enlargement Capacity (cubic feet per second)

| Reach Number | AVEK | Coachella | Desert | Mojave | Palmdale | San Bernardino | Metropolitan | Total |
|--------------|------|-----------|--------|--------|----------|----------------|--------------|-------|
| 18A | | 151 | 13 | 136 | 6 | | 1,200 | 1,506 |
| 19 | | 151 | 13 | 136 | 6 | | 1,200 | 1,506 |
| 20A | 35 | 151 | 13 | 136 | 6 | | 1,200 | 1,541 |
| 20B | 35 | 151 | 13 | 136 | 6 | | 1,200 | 1,541 |
| 21 | 35 | 151 | 13 | 136 | | | 1,200 | 1,535 |
| 22A | 35 | 151 | 13 | 136 | | | 1,200 | 1,535 |
| 22B | | 151 | 13 | 136 | | | 1,200 | 1,500 |
| 23B | | 184 | 67 | 212 | | | 1,200 | 1,663 |
| 23C | | 184 | 67 | | | | 1,200 | 1,451 |
| 24 | | 190 | 78 | | | | 1,200 | 1,468 |
| 25 | | 193 | 83 | | | 63 | 1,200 | 1,539 |
| 26A | | 193 | 83 | | | 63 | 1,200 | 1,539 |
| 26B | | | | | | | 300 | 300 |

Factors for Distributing Capital and Minimum OMP&R Costs of East Branch Enlargement Facilities (flow ratios)

| Reach Number | AVEK | Coachella | Desert | Mojave | Palmdale | San Bernardino | Metropolitan | Total |
|--------------|------------|------------|------------|------------|------------|----------------|--------------|------------|
| 18A | 0.00000000 | 0.10026560 | 0.00863214 | 0.09030544 | 0.00398406 | 0.00000000 | 0.79681276 | 1.00000000 |
| 19 | 0.00000000 | 0.10026560 | 0.00863214 | 0.09030544 | 0.00398406 | 0.00000000 | 0.79681276 | 1.00000000 |
| 20A | 0.02271252 | 0.09798832 | 0.00843608 | 0.08825438 | 0.00389358 | 0.00000000 | 0.77871512 | 1.00000000 |
| 20B | 0.02271252 | 0.09798832 | 0.00843608 | 0.08825438 | 0.00389358 | 0.00000000 | 0.77871512 | 1.00000000 |
| 21 | 0.02280130 | 0.09837134 | 0.00846906 | 0.08859935 | 0.00000000 | 0.00000000 | 0.78175895 | 1.00000000 |
| 22A | 0.02280130 | 0.09837134 | 0.00846906 | 0.08859935 | 0.00000000 | 0.00000000 | 0.78175895 | 1.00000000 |
| 22B | 0.00000000 | 0.10066667 | 0.00866667 | 0.09066667 | 0.00000000 | 0.00000000 | 0.79999999 | 1.00000000 |
| 23B | 0.00000000 | 0.11064342 | 0.04028863 | 0.12748046 | 0.00000000 | 0.00000000 | 0.72158749 | 1.00000000 |
| 23C | 0.00000000 | 0.12680910 | 0.04617505 | 0.00000000 | 0.00000000 | 0.00000000 | 0.82701585 | 1.00000000 |
| 24 | 0.00000000 | 0.12942779 | 0.05313351 | 0.00000000 | 0.00000000 | 0.00000000 | 0.81743870 | 1.00000000 |
| 25 | 0.00000000 | 0.12540611 | 0.05393112 | 0.00000000 | 0.00000000 | 0.04093567 | 0.77972710 | 1.00000000 |
| 26A | 0.00000000 | 0.12540611 | 0.05393112 | 0.00000000 | 0.00000000 | 0.04093567 | 0.77972710 | 1.00000000 |
| 26B | 0.00000000 | 0.00000000 | 0.00000000 | 0.00000000 | 0.00000000 | 0.00000000 | 1.00000000 | 1.00000000 |

contractor's allocated share of debt service on bonds sold to finance the enlargement.

Table B-30 shows the minimum OMP&R components of the East Branch Enlargement Transportation Charge for each participating SWP water contractor for each year of the project repayment period. The amounts shown in *Table B-30* will recover the minimum OMP&R costs shown in *Table B-27*.

Table B-31 shows the annual East Branch Enlargement Transportation Charge for each participating SWP water contractor (the sum of the corresponding amounts included in *Tables B-29* and *B-30*).

East Branch Extension Charges

The East Branch Extension charges recover associated costs for East Branch Extension facilities beginning at Devil Canyon Powerplant Afterbay and extending to the terminus at Noble Creek in the vicinity of Beaumont, Riverside County. These costs are separated into 3 phases: Phase 1 Original, Phase 1 Improvements, and Phase 2. The East Branch Extension costs will be recovered from two SWP water contractors—San Bernardino Valley Municipal Water District and San Gorgonio Pass Water Agency—in accordance with their amended water supply contracts. The factors for distributing minimum costs are shown in *Table 12*. *Table 13* shows the capital factors and the corresponding debt service, including the 25 percent bond cover, for each of the phases in 2020.

South Bay Aqueduct Enlargement Charges

The South Bay Aqueduct including the enlargement capacity began operations in 2015. The enlargement construction costs are being recovered in full by Alameda County Flood Control and Water Conservation District, Zone 7 (Alameda-Zone 7). Capital charges related to a portion

of the enlargement construction costs benefitting off-peak pumping are initially paid by Alameda-Zone 7 to meet the bond resolution and later recovered from SWP water contractors through the transportation variable charge. The off-peak pumping charges originally paid by Alameda-Zone 7 are then returned to Alameda-Zone 7 as a credit in the subsequent year. *Table 11* shows the corresponding debt service for the enlargement project, including the 25 percent bond cover, and the off-peak pumping debt service included in the 2020 Statements of Charges as described above.

Future Bulletin 132 editions will include the finalized minimum and capital cost distribution factors. The 2018 Statements

Table 11 South Bay Aqueduct Enlargement Debt Service for 2020

| Project | Total Debt Service Charge (in dollars) |
|-------------------------|---|
| Enlargement | |
| Alameda-Zone 7 | 17,268,579 |
| Off-Peak Pumping | |
| | 1,684,166 |
| Total | 18,952,745 |

of Charges (B132-17) began to recover and redistribute the costs of these enlarged facilities using the agreed upon distribution factors.

Short-term Agreements

DWR and the SWP water contractors execute short-term agreements that affect the SWP water contractors' charges.

Municipal Water Quality Investigations

DWR executed a 5-year agreement in 1997 with 16 municipal and industrial SWP water contractors, who agreed to pay for allocated shares of DWR's Municipal Water Quality

Table 12 Factors for Distributing Minimum OMP&R Costs of the East Branch Extension Facilities**For Calendar Year 2012 and Previous Years**

| Reach Number | Reach Description | San Bernardino | San Gorgonio | Total |
|---------------------|--|-----------------------|---------------------|--------------|
| 1 | Devil Canyon Powerplant to Junction, Foothill Pipeline near Cone Camp Road | 0.557330 | 0.442670 | 1.000000 |
| 2A | Junction, Foothill Pipeline near Cone Camp Road to Greenspot Pump Station | 0.557330 | 0.442670 | 1.000000 |
| 2B | Greenspot Pump Station to Morton Canyon Valve Vault | 0.777778 | 0.222222 | 1.000000 |
| 2C | Morton Canyon Valve Vault to Crafton Hills Pump Station | 0.777778 | 0.222222 | 1.000000 |
| 2D | Junction, Foothill Pipeline Near Cone Camp Road to Citrus Pump Station | 0.777778 | 0.222222 | 1.000000 |
| 3A | Crafton Hills Pump Station to Crafton Hills Reservoir | 0.557330 | 0.442670 | 1.000000 |
| 3B | Crafton Hills Reservoir to Garden Air Creek | 0.557330 | 0.442670 | 1.000000 |
| 4A | Garden Air Creek to Cherry Valley Pump Station | | 1.000000 | 1.000000 |
| 4B | Cherry Valley Pump Station to Terminus at Noble Creek | | 1.000000 | 1.000000 |

For Calendar Year 2013 and Forward

| Reach Number | Reach Description | San Bernardino | San Gorgonio | Total |
|---------------------|--|-----------------------|---------------------|--------------|
| 1 | Devil Canyon Powerplant to Junction, Foothill Pipeline near Cone Camp Road | 0.81674544 | 0.18325456 | 1.00000000 |
| 2A | Junction, Foothill Pipeline near Cone Camp Road to Greenspot Pump Station | 0.85193106 | 0.14806894 | 1.00000000 |
| 2B | Greenspot Pump Station to Morton Canyon Valve Vault | 0.77144744 | 0.22855256 | 1.00000000 |
| 2C | Morton Canyon Valve Vault to Crafton Hills Pump Station | 0.77144744 | 0.22855256 | 1.00000000 |
| 2D | Junction, Foothill Pipeline Near Cone Camp Road to Citrus Pump Station | 0.76227575 | 0.23772425 | 1.00000000 |
| 2E ^a | Citrus Pump Station to Crafton Hills Pump Station | 0.73896000 | 0.26104000 | 1.00000000 |
| 3A | Crafton Hills Pump Station to Crafton Hills Reservoir | 0.60766673 | 0.39233327 | 1.00000000 |
| 3B | Crafton Hills Reservoir to Carter Street Valve Vault | 0.58333333 | 0.41666667 | 1.00000000 |
| 3C ^a | Carter Street Vault to Garden Air Creek | 0.46994300 | 0.53005700 | 1.00000000 |
| 3D ^a | Yucaipa Connector Pipeline to Yucaipa Pipeline Tie-In | 0.73338500 | 0.26661500 | 1.00000000 |
| 3E ^a | Yucaipa Pipeline Tie-In to Carter Street Vault | 0.73338500 | 0.26661500 | 1.00000000 |
| 4A | Garden Air Creek to Cherry Valley Pump Station | | 1.00000000 | 1.00000000 |
| 4B | Cherry Valley Pump Station to Terminus at Noble Creek | | 1.00000000 | 1.00000000 |

^a Reach designation in Phase II (calendar year 2013 and forward) have been modified to reflect new repayment reaches.

Investigations program costs. Additional amendments were executed in 2002, 2006, 2008, 2010, 2014, 2017, and 2019 to extend the program. The Municipal Water Quality Investigations charges under this agreement are included in the transportation minimum OMP&R components shown in Table B-16A.

Feasibility Study

Nine SWP water contractors executed a short-term agreement (1997 and 1998) to participate in the feasibility study for the American Basin conjunctive-use program.

Table 13 East Branch Extension Facilities Debt Service for 2020

| SWP Water Contractor | Share of Participation (percent) | Total Debt Service Charge (in dollars) |
|-----------------------------|----------------------------------|--|
| Phase 1 Original | | |
| San Bernardino | 45.8417 | 4,666,626 |
| San Gorgonio | 54.1583 | 5,513,245 |
| <i>Subtotal</i> | <i>100.0000</i> | <i>10,179,871</i> |
| Phase 1 Improvements | | |
| San Bernardino | 63.3410 | 3,671,560 |
| San Gorgonio | 36.6590 | 2,125,937 |
| <i>Subtotal</i> | <i>100.0000</i> | <i>5,796,497</i> |
| Phase 2 | | |
| San Bernardino | 64.4210 | 13,001,418 |
| San Gorgonio | 35.5790 | 7,180,539 |
| <i>Subtotal</i> | <i>100.0000</i> | <i>20,181,957</i> |
| Total | | 36,158,325 |

Feasibility study costs are included in Table B-16A.

Delta Programs

SWP water contractors have agreed to participate in several Delta improvement programs that started in 2007 and extend into the future.

The first agreement pertains to the Bay Delta Conservation Plan (BDCP), which was agreed to in the Memorandum of Agreement (MOA) for Supplemental Funding for Certain Ecosystem Actions and Support for Implementation of Near-Term Water Supply, Water Quality, Ecosystem, and Levee Actions. The BDCP comprises two elements: fishery costs and consultation costs. These costs were added to the SWP water contractors' transportation minimum component for bill years 2007 through 2012.

The second agreement pertains to the non-BDCP costs of the MOA, comprising the Delta Vision and pelagic organism decline research costs. These costs were added to

the SWP water contractors' conservation minimum component for bill years 2007 and 2008.

The third set of agreements pertains to the Delta Habitat Conservation and Conveyance Program (DHCCP). The agreements are between DWR and 20 participating SWP water contractors to provide 50 percent of the funding for the preliminary planning phase of an improved Delta water conveyance facility. (The remaining 50 percent is provided by the Bureau of Reclamation.) This program will assess potential habitat restoration and water conveyance options in the Delta. For bill years 2008 through 2011, nearly \$70 million in charges associated with the DHCCP were billed directly to the 20 participating SWP water contractors as a separate line item in the Statements of Charges and are not reflected in the tables in this appendix.

A fourth set of agreements pertains to both DHCCP and BDCP. For bill years 2012 and 2013, an Agreement for Supplemental Funding for the Costs of Environmental Analysis, Planning and Design of Delta Conservation Measures, Including Delta Conveyance Options, was executed in 2012 between DWR and 16 participating SWP water contractors to provide 50 percent of the project funding. In 2012, \$22 million was billed and in 2013, \$28 million was billed directly to the 16 participating SWP water contractors as a separate line item in the Statements of Charges.

In 2018, a fifth set of funding agreements for the preconstruction planning costs of the California WaterFix facility was executed between DWR and ten participating SWP water contractors to provide gap funding. Bill years 2018 and 2019 included a total of \$58.4 million, which was billed directly as separate line items in the Statements of Charges and are not reflected in the appendix tables.

During 2013, SWP water contractors agreed to participate in the San Joaquin River Flow Augmentation Program. The costs of the \$4 million program were recovered in the 2014 Statements of Charges.

During 2015 and 2016, SWP water contractors requested DWR enter into agreements for San Joaquin River flow release purchases with Oakdale Irrigation District and South San Joaquin Irrigation District. The 2015 purchases of \$5.75 million and the 2016 purchases of \$13.75 million (\$2 million invoiced in 2017) were included in the 2017 and 2018 Statements of Charges. Additionally, SWP water contractors agreed to purchase up to \$12.5 million of 2018 Oakdale Irrigation District flow releases. This purchase was reflected in each SWP water contractor's 2019 charges with interest at the Project Interest Rate of 4.610.

Sites Reservoir

In May and June 2019, SWP water contractors submitted authorization letters to DWR for participation in the Sites Reservoir Project–Phase 2. The six participating SWP water contractors were billed directly as a separate line item in the 2020 Statements of Charges totaling \$36.4 million, which is not reflected in the appendix tables.

TABLE B-1 Factors for Distributing Reach Capital Costs Among Contractors^a

Sheet 1 of 2

| Reach No. | Reach Description | Napa | Solano | Alameda-Zone 7 | Alameda County | Santa Clara | Future Contractor South Bay | Total |
|-----------|--|------------|------------|----------------|----------------|-------------|-----------------------------|------------|
| 1 | NORTH BAY AQUEDUCT Barker Slough through Fairfield/Vacaville Turnout | 0.29667896 | 0.70332104 | | | | | 1.00000000 |
| 2 | Fairfield/Vacaville Turnout to Cordelia Forebay | 0.38414552 | 0.61585448 | | | | | 1.00000000 |
| 3A | Cordelia Forebay through Benicia and Vallejo Turnouts | | 1.00000000 | | | | | 1.00000000 |
| 3B | Cordelia Forebay through Napa Turnout Reservoir | 1.00000000 | | | | | | 1.00000000 |
| | SOUTH BAY AQUEDUCT | | | | | | | |
| 1 | Bethany Reservoir through Altamont Turnout | | 0.22599612 | 0.20663021 | 0.49237700 | 0.07499667 | 1.00000000 | |
| 2 | Altamont Turnout through Patterson Reservoir | | 0.22599658 | 0.20663059 | 0.49237783 | 0.07499500 | 1.00000000 | |
| 4 | Patterson Reservoir to Del Valle Junction | | 0.19504795 | 0.21450017 | 0.51113249 | 0.07931939 | 1.00000000 | |
| 5 | Del Valle Junction through Lake del Valle | | 0.14436367 | 0.12972254 | 0.33715573 | 0.38875806 | 1.00000000 | |
| 6 | Del Valle Junction through South Livermore Turnout | | 0.14599918 | 0.21144710 | 0.50574745 | 0.13680627 | 1.00000000 | |
| 7 | South Livermore Turnout through Vallecitos Turnout | | | 0.25176680 | 0.60218448 | 0.14604872 | 1.00000000 | |
| 8 | Vallecitos Turnout through Alameda-Bayside Turnout | | | 0.27934645 | 0.72065355 | | 1.00000000 | |
| 9 | Alameda-Bayside Turnout through Santa Clara Terminal Facilities | | | | | 1.00000000 | | |
| | CALIFORNIA AQUEDUCT | | | | | | | |
| 1 | Delta through Bethany Reservoir | 0.00954737 | 0.00872917 | 0.02080118 | 0.00342507 | | | N/A |

| Reach No. | Reach Description | San Luis Obispo | Santa Barbara | AVEK | Coachella | Crestline | Desert | Littlerock |
|-----------|--|-----------------|---------------|------------|------------|------------|------------|------------|
| | CALIFORNIA AQUEDUCT | | | | | | | |
| 1 | Delta through Bethany Reservoir | 0.00533010 | 0.00983337 | 0.02939084 | 0.00528315 | 0.00133612 | 0.00871300 | 0.00049180 |
| 2A | Bethany Reservoir to Orestimba Creek | 0.00557213 | 0.01027988 | 0.03072531 | 0.00552068 | 0.00139620 | 0.00910474 | 0.00051413 |
| 2B | Orestimba Creek to O'Neill Forebay | 0.00557824 | 0.01029119 | 0.03075915 | 0.00552831 | 0.00139814 | 0.00911733 | 0.00051469 |
| 3 | O'Neill Forebay to Dos Amigos Pumping Plant | 0.00557719 | 0.01028923 | 0.03075332 | 0.00552772 | 0.00139798 | 0.00911637 | 0.00051461 |
| 4 | Dos Amigos Pumping Plant to Panoche Creek | 0.00557607 | 0.01028717 | 0.03074719 | 0.00552710 | 0.00139784 | 0.00911536 | 0.00051451 |
| 5 | Panoche Creek to Five Points | 0.00557467 | 0.01028462 | 0.03073954 | 0.00552633 | 0.00139763 | 0.00911409 | 0.00051440 |
| 6 | Five Points to Arroyo Pasajero | 0.00557257 | 0.01028074 | 0.03072799 | 0.00552517 | 0.00139733 | 0.00911216 | 0.00051419 |
| 7 | Arroyo Pasajero to Kettleman City | 0.00557189 | 0.01027949 | 0.03072428 | 0.00552480 | 0.00139723 | 0.00911154 | 0.00051413 |
| 8C | Kettleman City through Milham Avenue | 0.00557103 | 0.01027792 | 0.03071961 | 0.00552432 | 0.00139712 | 0.00911076 | 0.00051405 |
| 8D | Milham Avenue through Avenal Gap | 0.00568611 | 0.01049020 | 0.03135418 | 0.00563986 | 0.00142632 | 0.00930130 | 0.00052466 |
| 9 | Avenal Gap through Twisselman Road | | 0.03426625 | 0.00616886 | 0.00156011 | 0.01017373 | 0.00057339 | |
| 10A | Twisselman Road through Lost Hills | | 0.03481391 | 0.00626946 | 0.00158556 | 0.01033963 | 0.00058254 | |
| 11B | Lost Hills to 7th Standard Road | | 0.03835043 | 0.00691699 | 0.00174933 | 0.01140749 | 0.00064171 | |
| 12D | 7th Standard Road through Elk Hills Road | | 0.04031661 | 0.00727790 | 0.00184059 | 0.01200265 | 0.00067463 | |
| 12E | Elk Hills Road through Tupman Road | | 0.04037074 | 0.00728878 | 0.00184332 | 0.01202059 | 0.00067553 | |
| 13B | Tupman Road to Buena Vista Pumping Plant | | 0.04379882 | 0.00791595 | 0.00200194 | 0.01305492 | 0.00073290 | |
| 14A | Buena Vista Pumping Plant through Santiago Creek | | 0.04599268 | 0.00831952 | 0.00210399 | 0.01372049 | 0.00076961 | |
| 14B | Santiago Creek through Old River Road | | 0.04682530 | 0.00847388 | 0.00214303 | 0.01397505 | 0.00078354 | |
| 14C | Old River Road to Wheeler Ridge Pumping Plant | | 0.04825217 | 0.00873768 | 0.00220973 | 0.01441013 | 0.00080743 | |
| 15A | Wheeler Ridge Pumping Plant to Chrisman Pumping Plant | | 0.04905609 | 0.00888679 | 0.00224744 | 0.01465600 | 0.00082089 | |
| 16A | Chrisman Pumping Plant to Edmonston Pumping Plant | | 0.05089794 | 0.00922722 | 0.00233351 | 0.01521742 | 0.00085171 | |
| 17E | Edmonston Pumping Plant to Porter Tunnel | | 0.05329388 | 0.00967107 | 0.00244575 | 0.01594937 | 0.00089182 | |
| 17F | Porter Tunnel to Junction, West Branch, California Aqueduct | | 0.05340725 | 0.00969176 | 0.00245098 | 0.01598349 | 0.00089372 | |
| 18A | Junction, West Branch, California Aqueduct through Alamo Powerplant | | 0.13238112 | 0.02399391 | 0.00606795 | 0.03957043 | 0.00221525 | |
| 19 | Alamo Powerplant to Fairmont | | 0.13237766 | 0.02399451 | 0.00606811 | 0.03957141 | 0.00221522 | |
| 19C | Buttes Junction through Buttes Reservoir | 1.00000000 | | | | | | |
| 20A | Fairmont through 70th Street West | 0.06847931 | 0.02576425 | 0.00651573 | 0.04249001 | 0.00237800 | | |
| 20B | 70th Street West to Palmdale | 0.02276024 | 0.02702917 | 0.00683555 | 0.04457607 | 0.00249470 | | |
| 21 | Palmdale to Littlerock Creek | 0.02318952 | 0.02754716 | 0.00696651 | 0.04543034 | 0.00254199 | | |
| 22A | Littlerock Creek to Pearblossom Pumping Plant | 0.01181870 | 0.02794143 | 0.00706621 | 0.04608043 | | | |
| 22B | Pearblossom Pumping Plant to West Fork Mojave River | | 0.02827552 | 0.00715074 | 0.04663153 | | | |
| 23 | West Fork Mojave River to Silverwood Lake | | 0.00324449 | 0.00818122 | 0.00535117 | | | |
| 24 | Cedar Springs Dam and Silverwood Lake | | 0.01024605 | 0.01251569 | 0.01690478 | | | |
| 25 | Silverwood Lake to South Portal, San Bernardino Tunnel | | | | | | | |
| 26A | South Portal, San Bernardino Tunnel through Devil Canyon Powerplant | | | | | | | |
| 28G | Devil Canyon Powerplant to Barton Road | | | | | | | |
| 28H | Barton Road to Lake Perris | | | | | | | |
| 28J | Perris Dam and Lake Perris | | | | | | | |
| 29A | Junction, West Branch, California Aqueduct through Oso Pumping Plant | | | | | | | |
| 29F | Oso Pumping Plant through Quail Embankment | | | | | | | |
| 29G | Quail Embankment through Warne Powerplant | | | | | | | |
| 29H | Pyramid Dam and Lake | | | | | | | |
| 29J | Pyramid Lake through Castaic Powerplant | | | | | | | |
| 30 | Castaic Dam and Lake | | | | | | | |
| 31A | Avenal Gap to Devil's Den Pumping Plant | 0.10560301 | 0.19482503 | | | | | |
| 33A | Devil's Den Pumping Plant through Tank 1 | 0.10101221 | 0.89898779 | | | | | |
| 33B | Tank 1 through Chorro Valley Turnout | 0.09912818 | 0.90087182 | | | | | |
| 34 | Chorro Valley Turnout through Lopez Turnout | 0.05479573 | 0.94520427 | | | | | |
| 35 | Lopez Turnout through Guadalupe Turnout | 1.00000000 | | | | | | |

^a Proportionate use factors do not reflect permanent water transfers as a result of the Monterey Amendment and after.

TABLE B-1 Factors for Distributing Reach Capital Costs Among Contractors^a

| Reach No. | Dudley Ridge | Empire | Future Contractor San Joaquin Valley | Kern | | Kings | Oak Flat | Tulare |
|----------------------------|--------------|------------|--------------------------------------|--------------------------|--------------|------------|------------|------------|
| | | | | Municipal and Industrial | Agricultural | | | |
| CALIFORNIA AQUEDUCT | | | | | | | | |
| 1 | 0.01707770 | 0.00088678 | 0.00254693 | 0.02741768 | 0.30629913 | 0.00090695 | 0.00167121 | 0.03504975 |
| 2A | 0.01781031 | 0.00092482 | 0.00266258 | 0.02864263 | 0.31945188 | 0.00094747 | 0.00174288 | 0.03655331 |
| 2B | 0.01785838 | 0.00092731 | 0.00266550 | 0.02868743 | 0.32030556 | 0.00094896 | | 0.03665201 |
| 3 | 0.01786337 | 0.00092757 | 0.00266499 | 0.02868589 | 0.32039254 | 0.00094892 | | 0.03666225 |
| 4 | 0.01786863 | 0.00092785 | 0.00266446 | 0.02868428 | 0.32048398 | 0.00094886 | | 0.03667303 |
| 5 | 0.01787517 | 0.00092819 | 0.00266380 | 0.02868227 | 0.32059816 | 0.00094879 | | 0.03668649 |
| 6 | 0.01788508 | 0.00092870 | 0.00266279 | 0.02867923 | 0.32077093 | 0.00094868 | | 0.03670685 |
| 7 | 0.01788826 | 0.00092887 | 0.00266246 | 0.02867825 | 0.32082633 | 0.00094864 | | 0.03671338 |
| 8C | 0.01789228 | 0.00092909 | 0.00266205 | 0.02867702 | 0.32089625 | 0.00094859 | | 0.03672162 |
| 8D | 0.01828779 | | 0.00271703 | 0.02928147 | 0.32798200 | | | 0.01820857 |
| 9 | | | | 0.03204523 | 0.32739538 | | | |
| 10A | | | | 0.03257442 | 0.31658608 | | | |
| 11B | | | | 0.03597398 | 0.24684668 | | | |
| 12D | | | | 0.03787171 | 0.20804762 | | | |
| 12E | | | | 0.03793198 | 0.20695175 | | | |
| 13B | | | | 0.01458796 | 0.16600071 | | | |
| 14A | | | | 0.00620338 | 0.13319181 | | | |
| 14B | | | | 0.00632023 | 0.11741558 | | | |
| 14C | | | | 0.00651962 | 0.09039633 | | | |
| 15A | | | | 0.00663252 | 0.07516317 | | | |
| 16A | | | | 0.00688973 | 0.04028829 | | | |
| 17E | | | | 0.00212516 | | | | |
| 31A | | | | 0.05046240 | 0.57546190 | | | |

| Reach No. | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio | Santa Clarita ^b | Metropolitan | Ventura | California Aqueduct Total |
|----------------------------|------------|------------|----------------|-------------|--------------|----------------------------|--------------|------------|---------------------------|
| CALIFORNIA AQUEDUCT | | | | | | | | | |
| 1 | 0.01101147 | 0.00369131 | 0.02362857 | 0.00650354 | 0.00398392 | 0.01285827 | 0.43929350 | 0.00429212 | 1.00000000 |
| 2A | 0.01151136 | 0.00385891 | 0.02469101 | 0.00679699 | 0.00416304 | 0.01343201 | 0.45921072 | 0.00448701 | 1.00000000 |
| 2B | 0.01152409 | 0.00386317 | 0.02472511 | 0.00680570 | 0.00416880 | 0.01345351 | 0.45973548 | 0.00449194 | 1.00000000 |
| 3 | 0.01152193 | 0.00386244 | 0.02472246 | 0.00680478 | 0.00416835 | 0.01345294 | 0.45965407 | 0.00449108 | 1.00000000 |
| 4 | 0.01151965 | 0.00386167 | 0.02471968 | 0.00680380 | 0.00416787 | 0.01345233 | 0.45956848 | 0.00449019 | 1.00000000 |
| 5 | 0.01151681 | 0.00386070 | 0.02471620 | 0.00680259 | 0.00416730 | 0.01345157 | 0.45946161 | 0.00448907 | 1.00000000 |
| 6 | 0.01151251 | 0.00385926 | 0.02471095 | 0.00680076 | 0.00416640 | 0.01345042 | 0.45929991 | 0.00448738 | 1.00000000 |
| 7 | 0.01151113 | 0.00385879 | 0.02470927 | 0.00680016 | 0.00416612 | 0.01345006 | 0.45924807 | 0.00448685 | 1.00000000 |
| 8C | 0.01150938 | 0.00385821 | 0.02470716 | 0.00679941 | 0.00416576 | 0.01344960 | 0.45918261 | 0.00448616 | 1.00000000 |
| 8D | 0.01174718 | 0.00393793 | 0.02522383 | 0.00694100 | 0.00425288 | 0.01343353 | 0.46868533 | 0.00457883 | 1.00000000 |
| 9 | 0.01283841 | 0.00430367 | 0.02758959 | 0.00758975 | 0.00465175 | 0.01356094 | 0.51227887 | 0.00500407 | 1.00000000 |
| 10A | 0.01304366 | 0.00437246 | 0.02803943 | 0.00771262 | 0.00472760 | 0.01377767 | 0.52040901 | 0.00508405 | 1.00000000 |
| 11B | 0.01436906 | 0.00481665 | 0.03093503 | 0.00850448 | 0.00521581 | 0.01517717 | 0.57349473 | 0.00560046 | 1.00000000 |
| 12D | 0.01510596 | 0.00506361 | 0.03254889 | 0.00894541 | 0.00548790 | 0.01595523 | 0.60297374 | 0.00588755 | 1.00000000 |
| 12E | 0.01512626 | 0.00507040 | 0.03259749 | 0.00895830 | 0.00549608 | 0.01597665 | 0.60379667 | 0.00589546 | 1.00000000 |
| 13B | 0.01641098 | 0.00550099 | 0.03540212 | 0.00972547 | 0.00596896 | 0.01733322 | 0.65516902 | 0.00639604 | 1.00000000 |
| 14A | 0.01723325 | 0.00577656 | 0.03720681 | 0.01021819 | 0.00627322 | 0.01820137 | 0.68807273 | 0.00671639 | 1.00000000 |
| 14B | 0.01754538 | 0.00588113 | 0.03789703 | 0.01040613 | 0.00638960 | 0.01853084 | 0.70057530 | 0.00683798 | 1.00000000 |
| 14C | 0.01808019 | 0.00606036 | 0.03907670 | 0.01072763 | 0.00658850 | 0.01909545 | 0.72199174 | 0.00704634 | 1.00000000 |
| 15A | 0.01838154 | 0.00616135 | 0.03974336 | 0.01090913 | 0.00670088 | 0.01941356 | 0.73406357 | 0.00716371 | 1.00000000 |
| 16A | 0.01907194 | 0.00639271 | 0.04126559 | 0.01132404 | 0.00695754 | 0.02014241 | 0.76170731 | 0.00743264 | 1.00000000 |
| 17E | 0.01997003 | 0.00669365 | 0.04325018 | 0.01186455 | 0.00729213 | 0.02109050 | 0.79767940 | 0.00778251 | 1.00000000 |
| 17F | 0.02001251 | 0.00670788 | 0.04334270 | 0.01188988 | 0.00730773 | 0.02113537 | 0.79937767 | 0.00779906 | 1.00000000 |
| 18A | 0.04960424 | 0.01662680 | 0.10730448 | 0.02944860 | 0.01809192 | | 0.57469530 | | 1.00000000 |
| 19 | 0.04960300 | 0.01662640 | 0.10730707 | 0.02944876 | 0.01809230 | | 0.57469556 | | 1.00000000 |
| 19C | | | | | | | | | 1.00000000 |
| 20A | 0.05324853 | 0.01784830 | 0.11522152 | 0.03161798 | 0.01942666 | | 0.61700971 | | 1.00000000 |
| 20B | 0.05586076 | 0.01872390 | 0.12087843 | 0.03316986 | 0.02038045 | | 0.64729087 | | 1.00000000 |
| 21 | 0.05692053 | | 0.12319480 | 0.03380324 | 0.02077093 | | 0.65963498 | | 1.00000000 |
| 22A | 0.05773082 | | 0.12495766 | 0.03428605 | 0.02106816 | | 0.66905054 | | 1.00000000 |
| 22B | 0.05842136 | | 0.12645207 | 0.03469614 | 0.02132008 | | 0.67705256 | | 1.00000000 |
| 23 | | | 0.14467451 | 0.03969010 | 0.02439237 | | 0.77446614 | | 1.00000000 |
| 24 | | | 0.22243002 | 0.04339444 | 0.02843498 | | 0.66607404 | | 1.00000000 |
| 25 | | | 0.14947726 | 0.03997502 | 0.02520426 | | 0.78534346 | | 1.00000000 |
| 26A | | | 0.14947726 | 0.03997502 | 0.02520426 | | 0.78534346 | | 1.00000000 |
| 28G | | | 0.05126137 | | | 0.94873863 | | | 1.00000000 |
| 28H | | | | | | 1.00000000 | | | 1.00000000 |
| 28J | | | | | | 1.00000000 | | | 1.00000000 |
| 29A | | | | | 0.03544337 | 0.95147783 | 0.01307880 | | 1.00000000 |
| 29F | | | | | 0.03544339 | 0.95147785 | 0.01307876 | | 1.00000000 |
| 29G | | | | | 0.03544339 | 0.95147785 | 0.01307876 | | 1.00000000 |
| 29H | | | | | 0.02817144 | 0.96278381 | 0.00904475 | | 1.00000000 |
| 29J | | | | | 0.03544338 | 0.95147787 | 0.01307875 | | 1.00000000 |
| 30 | | | | | 0.02927284 | 0.96212388 | 0.00860328 | | 1.00000000 |
| 31A | | | | | 0.07364766 | | | | 1.00000000 |
| 33A | | | | | | | | | 1.00000000 |
| 33B | | | | | | | | | 1.00000000 |
| 34 | | | | | | | | | 1.00000000 |
| 35 | | | | | | | | | 1.00000000 |

^a Proportionate use factors do not reflect permanent water transfers as a result of the Monterey Amendment and after.^b Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-2 Factors for Distributing Reach Minimum OMP&R Costs Among Contractors^a

Sheet 1 of 2

| Reach No. | Reach Description | Napa | Solano | Alameda-Zone 7 ^b | Alameda County | Santa Clara | Future South Bay Contractor | Total |
|-----------|---|------------|------------|-----------------------------|----------------|-------------|-----------------------------|------------|
| | NORTH BAY AQUEDUCT | | | | | | | |
| 1 | Barker Slough through Fairfield/Vacaville Turnout | 0.29251728 | 0.70748272 | | | | | 1.00000000 |
| 2 | Fairfield/Vacaville Turnout to Cordelia Forebay | 0.42000793 | 0.57999207 | | | | | 1.00000000 |
| 3A | Cordelia Forebay through Benicia and Vallejo Turnouts | | 1.00000000 | | | | | 1.00000000 |
| 3B | Cordelia Forebay through Napa Turnout Reservoir | 1.00000000 | | | | | | 1.00000000 |
| | SOUTH BAY AQUEDUCT | | | | | | | |
| 1 | Bethany Reservoir through Altamont Turnout | | 0.42946876 | 0.16864923 | 0.40188201 | 0.00000000 | 1.00000000 | |
| 2 | Altamont Turnout through Patterson Reservoir | | 0.39618910 | 0.17848805 | 0.42532285 | 0.00000000 | 1.00000000 | |
| 4 | Patterson Reservoir to Del Valle Junction | | 0.37257554 | 0.18546748 | 0.44195698 | 0.00000000 | 1.00000000 | |
| 5 | Del Valle Junction through Lake del Valle | | 0.53312173 | 0.12972254 | 0.33715573 | 0.00000000 | 1.00000000 | |
| 6 | Del Valle Junction through South Livermore Turnout | | 0.28280545 | 0.21144710 | 0.50574745 | 0.00000000 | 1.00000000 | |
| 7 | South Livermore Turnout through Vallecitos Turnout | | 0.14604872 | 0.25176680 | 0.60218448 | 0.00000000 | 1.00000000 | |
| 8 | Vallecitos Turnout through Alameda-Bayside Turnout | | | 0.27934645 | 0.72065355 | | 1.00000000 | |
| 9 | Alameda-Bayside Turnout through Santa Clara Terminal Facilities | | | | | 1.00000000 | | |
| | CALIFORNIA AQUEDUCT | | | | | | | |
| 1 | Delta through Bethany Reservoir | | | 0.00870517 | 0.02074403 | | | N/A |

| Reach No. | Reach Description | San Luis Obispo | Santa Barbara | AVEK | Coachella | Crestline | Desert | Littlerock |
|-----------|--|-----------------|---------------|------------|------------|------------|------------|------------|
| | CALIFORNIA AQUEDUCT | | | | | | | |
| 1 | Delta through Bethany Reservoir | 0.00531721 | 0.00980965 | 0.03130290 | 0.03261149 | 0.00133220 | 0.01285625 | 0.00049034 |
| 2A | Bethany Reservoir to Orestimba Creek | 0.00556969 | 0.01027545 | 0.03278363 | 0.03414192 | 0.00139484 | 0.01346023 | 0.00051362 |
| 2B | Orestimba Creek to O'Neill Forebay | 0.00557579 | 0.01028673 | 0.03282317 | 0.03419082 | 0.00139677 | 0.01347910 | 0.00051418 |
| 3 | O'Neill Forebay to Dos Amigos Pumping Plant | 0.00557472 | 0.01028476 | 0.03281798 | 0.03418767 | 0.00139663 | 0.01347773 | 0.00051409 |
| 4 | Dos Amigos Pumping Plant to Panoche Creek | 0.00557360 | 0.01028270 | 0.03281253 | 0.03418436 | 0.00139648 | 0.01347630 | 0.00051400 |
| 5 | Panoche Creek to Five Points | 0.00557222 | 0.01028014 | 0.03280571 | 0.03418023 | 0.00139630 | 0.01347451 | 0.00051388 |
| 6 | Five Points to Arroyo Pasajero | 0.00557012 | 0.01027626 | 0.03279539 | 0.03417401 | 0.00139599 | 0.01347180 | 0.00051368 |
| 7 | Arroyo Pasajero to Kettleman City | 0.00556944 | 0.01027501 | 0.03279208 | 0.03417200 | 0.00139589 | 0.01347093 | 0.00051361 |
| 8C | Kettleman City through Milham Avenue | 0.00551362 | 0.01017203 | 0.03245544 | 0.03380385 | 0.00138102 | 0.01332672 | 0.00050847 |
| 8D | Milham Avenue through Avenal Gap | 0.00562578 | 0.01037893 | 0.03311858 | 0.03450099 | 0.00140943 | 0.01360122 | 0.00051880 |
| 9 | Avenal Gap through Twisselman Road | | | 0.03487590 | 0.03506593 | 0.00151577 | 0.01430879 | 0.00055739 |
| 10A | Twisselman Road through Lost Hills | | | 0.03541492 | 0.03560973 | 0.00153966 | 0.01453292 | 0.00056600 |
| 11B | Lost Hills to 7th Standard Road | | | 0.03876599 | 0.03898858 | 0.00168766 | 0.01592313 | 0.00061955 |
| 12D | 7th Standard Road through Elk Hills Road | | | 0.04062326 | 0.04086218 | 0.00176990 | 0.01669509 | 0.00064922 |
| 12E | Elk Hills Road through Tupman Road | | | 0.04067436 | 0.04091461 | 0.00177239 | 0.01671773 | 0.00065006 |
| 13B | Tupman Road to Buena Vista Pumping Plant | | | 0.04396863 | 0.04423547 | 0.00191768 | 0.01808321 | 0.00070269 |
| 14A | Buena Vista Pumping Plant through Santiago Creek | | | 0.04605876 | 0.04634448 | 0.00201035 | 0.01895277 | 0.00073611 |
| 14B | Santiago Creek through Old River Road | | | 0.04670791 | 0.04700238 | 0.00203984 | 0.01922748 | 0.00074647 |
| 14C | Old River Road to Wheeler Ridge Pumping Plant | | | 0.04788751 | 0.04819483 | 0.00209269 | 0.01972179 | 0.00076533 |
| 15A | Wheeler Ridge Pumping Plant to Chrisman Pumping Plant | | | 0.04857809 | 0.04889274 | 0.00212358 | 0.02001090 | 0.00077637 |
| 16A | Chrisman Pumping Plant to Edmonston Pumping Plant | | | 0.05017462 | 0.05050488 | 0.00219467 | 0.02067706 | 0.00080191 |
| 17E | Edmonston Pumping Plant to Porter Tunnel | | | 0.05215958 | 0.05250984 | 0.00228321 | 0.02150622 | 0.00083365 |
| 17F | Porter Tunnel to Junction, West Branch, California Aqueduct | | | 0.05226294 | 0.05261398 | 0.00228776 | 0.02154897 | 0.00083530 |
| 18A | Junction, West Branch, California Aqueduct through Alamo Powerplant | | | 0.13774725 | 0.11306511 | 0.00603056 | 0.05137695 | 0.00220155 |
| 19 | Alamo Powerplant to Fairmont | | | 0.13774370 | 0.11306344 | 0.00603069 | 0.05137766 | 0.00220151 |
| 19C | Buttes Junction through Buttes Reservoir | | | 1.00000000 | | | | |
| 20A | Fairmont through 70th Street West | | | 0.06855702 | 0.12212506 | 0.00651522 | 0.05550243 | 0.00237787 |
| 20B | 70th Street West to Palmdale | | | 0.02284441 | 0.12811683 | 0.00683511 | 0.05822670 | 0.00249455 |
| 21 | Palmdale to Littlerock Creek | | | 0.02327543 | 0.13055246 | 0.00696606 | 0.05933989 | 0.00254183 |
| 22A | Littlerock Creek to Pearblossom Pumping Plant | | | 0.01190663 | 0.13241285 | 0.00706574 | 0.06018798 | |
| 22B | Pearblossom Pumping Plant to West Fork Mojave River | | | 0.00195128 | 0.13374659 | 0.00713697 | 0.06079440 | |
| 23 | West Fork Mojave River to Silverwood Lake | | | | 0.12416451 | 0.00818135 | 0.02168414 | |
| 24 | Cedar Springs Dam and Silverwood Lake | | | | 0.02651510 | 0.01251569 | 0.01910229 | |
| 25 | Silverwood Lake to South Portal San Bernardino Tunnel | | | | 0.09751351 | | 0.01317145 | |
| 26A | South Portal, San Bernardino Tunnel through Devil Canyon Powerplant | | | | 0.12013473 | | 0.01622697 | |
| 28G | Devil Canyon Powerplant to Barton Road | | | | 0.30672992 | | 0.04143095 | |
| 28H | Barton Road to Lake Perris | | | | 0.32330286 | | 0.04366951 | |
| 28J | Perris Dam and Lake Perris | | | | 0.32330202 | | 0.04366970 | |
| 29A | Junction, West Branch, California Aqueduct through Oso Pumping Plant | | | 0.00296720 | | | | |
| 29F | Oso Pumping Plant through Quail Embankment | | | 0.00296796 | | | | |
| 29G | Quail Embankment through Warne Powerplant | | | | | | | |
| 29H | Pyramid Dam and Lake | | | | | | | |
| 29J | Pyramid Lake through Castaic Powerplant | | | | | | | |
| 30 | Castaic Dam and Lake | | | | | | | |
| 31A | Avenal Gap to Devil's Den Pumping Plant | 0.10542164 | 0.19449108 | | 0.05400251 | | 0.01800084 | |
| 33A | Devil's Den Pumping Plant through Tank 1 | 0.10101221 | 0.89898779 | | | | | |
| 33B | Tank 1 through Chorro Valley Turnout | 0.10101221 | 0.89898779 | | | | | |
| 34 | Chorro Valley Turnout through Lopez Turnout | 0.05271277 | 0.94728723 | | | | | |
| 35 | Lopez Turnout through Guadalupe Turnout | | 1.00000000 | | | | | |

^a Proportionate use factors apply to 2019, and reflect permanent capacity water transfers that have been signed as of February 1, 2018.^b South Bay Aqueduct factors reflect enlargement capacities for Alameda County Flood Control and Water Conservation District, Zone 7. These factors are applicable for years 2015 and forward.

TABLE B-2 Factors for Distributing Reach Minimum OMP&R Costs Among Contractors^a

Sheet 2 of 2

| Reach No. | Napa | Solano | Alameda-Zone 7 | Dudley Ridge | Empire | Future Contractor San Joaquin Valley | Kern | | Kings | Oak Flat | Tulare |
|----------------------------|------------|------------|----------------|--------------|------------|--------------------------------------|--------------------------|--------------|------------|------------|------------|
| | | | | | | | Municipal and Industrial | Agricultural | | | |
| CALIFORNIA AQUEDUCT | | | | | | | | | | | |
| 1 | 0.00101482 | 0.00145893 | 0.02319901 | 0.01349570 | 0.00088461 | 0.00254078 | 0.02734537 | 0.27096661 | 0.00247148 | 0.00166714 | 0.02580275 |
| 2A | 0.00106145 | 0.00152588 | 0.00868251 | 0.01410081 | 0.00092428 | 0.00266143 | 0.02862280 | 0.28310507 | 0.00258398 | 0.00174185 | 0.02695974 |
| 2B | 0.00106360 | 0.00152903 | 0.00869820 | 0.01413883 | 0.00092676 | 0.00266435 | 0.02866750 | 0.28387568 | 0.00258988 | | 0.02703241 |
| 3 | 0.00106370 | 0.00152918 | 0.00869836 | 0.01414278 | 0.00092702 | 0.00266383 | 0.02866595 | 0.28395699 | 0.00259028 | | 0.02703994 |
| 4 | 0.00106379 | 0.00152932 | 0.00869852 | 0.01414692 | 0.00092729 | 0.00266329 | 0.02866433 | 0.28404246 | 0.00259072 | | 0.02704786 |
| 5 | 0.00106390 | 0.00152950 | 0.00869873 | 0.01415210 | 0.00092763 | 0.00266262 | 0.02866229 | 0.28414920 | 0.00259125 | | 0.02705775 |
| 6 | 0.00106409 | 0.00152978 | 0.00869906 | 0.01415993 | 0.00092814 | 0.00266161 | 0.02865922 | 0.28431071 | 0.00259206 | | 0.02707272 |
| 7 | 0.00106415 | 0.00152988 | 0.00869918 | 0.01416245 | 0.00092832 | 0.00266127 | 0.02865823 | 0.28436250 | 0.00259232 | | 0.02707752 |
| 8C | 0.00105126 | 0.00151126 | 0.00859811 | 0.01396988 | 0.00091570 | 0.00263462 | 0.02834121 | 0.28040800 | 0.00255949 | | 0.02670939 |
| 8D | 0.00107347 | 0.00154323 | 0.00877815 | 0.01427284 | | 0.00268820 | 0.02892875 | 0.28656839 | 0.00165698 | | 0.00825002 |
| 9 | 0.00079077 | 0.00109117 | 0.00779026 | | | | 0.03113088 | 0.28994559 | | | |
| 10A | 0.00080367 | 0.00110880 | 0.00791534 | | | | 0.03162743 | 0.27881661 | | | |
| 11B | 0.00064367 | 0.00094254 | 0.00351060 | | | | 0.03469801 | 0.21548493 | | | |
| 12D | | | | | | | 0.03640750 | 0.18286854 | | | |
| 12E | | | | | | | 0.03646180 | 0.18175865 | | | |
| 13B | | | | | | | 0.01396780 | 0.14042247 | | | |
| 14A | | | | | | | 0.00592355 | 0.10802055 | | | |
| 14B | | | | | | | 0.00601264 | 0.09940480 | | | |
| 14C | | | | | | | 0.00617095 | 0.07838713 | | | |
| 15A | | | | | | | 0.00626342 | 0.06492276 | | | |
| 16A | | | | | | | 0.00647554 | 0.03387634 | | | |
| 17E | | | | | | | 0.00198233 | | | | |
| 31A | 0.00628695 | 0.00977801 | 0.02617705 | | | 0.05037550 | | 0.36716813 | 0.00176551 | | |

| Reach No. | Mojave | Palmdale | San Bernardino | San Gabriel | San Geronio | Santa Clarita ^c | Metroplitan | Ventura | California Aqueduct Total |
|----------------------------|------------|------------|----------------|-------------|-------------|----------------------------|-------------|------------|---------------------------|
| CALIFORNIA AQUEDUCT | | | | | | | | | |
| 1 | 0.02235967 | 0.00458372 | 0.02355927 | 0.00648440 | 0.00397223 | 0.02543294 | 0.41531378 | 0.00427755 | 1.00000000 |
| 2A | 0.02339345 | 0.00480082 | 0.02466697 | 0.00679035 | 0.00415899 | 0.02659606 | 0.43500352 | 0.00448066 | 1.00000000 |
| 2B | 0.02343677 | 0.00480645 | 0.02470097 | 0.00679904 | 0.00416471 | 0.02665338 | 0.43550031 | 0.00448557 | 1.00000000 |
| 3 | 0.02343752 | 0.00480564 | 0.02469831 | 0.00679811 | 0.00416426 | 0.02665660 | 0.43542322 | 0.00448473 | 1.00000000 |
| 4 | 0.02343829 | 0.00480480 | 0.02469552 | 0.00679714 | 0.00416380 | 0.02665996 | 0.43534219 | 0.00448383 | 1.00000000 |
| 5 | 0.02343927 | 0.00480373 | 0.02469202 | 0.00679592 | 0.00416322 | 0.02666418 | 0.43524098 | 0.00448272 | 1.00000000 |
| 6 | 0.02344072 | 0.00480212 | 0.02468675 | 0.00679407 | 0.00416233 | 0.02667055 | 0.43508787 | 0.00448102 | 1.00000000 |
| 7 | 0.02344119 | 0.00480162 | 0.02468505 | 0.00679346 | 0.00416205 | 0.02667259 | 0.43503878 | 0.00448048 | 1.00000000 |
| 8C | 0.02316660 | 0.00475269 | 0.02442207 | 0.00672261 | 0.00411770 | 0.02634212 | 0.44210856 | 0.00443558 | 1.00000000 |
| 8D | 0.02365255 | 0.00484967 | 0.02492461 | 0.00686039 | 0.00420245 | 0.02690139 | 0.45116937 | 0.00452581 | 1.00000000 |
| 9 | 0.02151929 | 0.00521180 | 0.02680496 | 0.00737540 | 0.00451947 | 0.02759444 | 0.48503968 | 0.00486251 | 1.00000000 |
| 10A | 0.02185034 | 0.00529275 | 0.02722726 | 0.00749079 | 0.00459067 | 0.02804585 | 0.49262963 | 0.00493763 | 1.00000000 |
| 11B | 0.02391004 | 0.00579559 | 0.02984414 | 0.00820674 | 0.00503189 | 0.03082566 | 0.53971652 | 0.00540476 | 1.00000000 |
| 12D | 0.02505081 | 0.00599111 | 0.03129850 | 0.00860427 | 0.00527709 | 0.03237873 | 0.56586015 | 0.00566365 | 1.00000000 |
| 12E | 0.02508148 | 0.00599865 | 0.03134228 | 0.00861586 | 0.00528449 | 0.03243323 | 0.56662365 | 0.00567076 | 1.00000000 |
| 13B | 0.02710686 | 0.00648455 | 0.03391167 | 0.00931912 | 0.00571769 | 0.03515621 | 0.61287595 | 0.00613000 | 1.00000000 |
| 14A | 0.02893029 | 0.00679287 | 0.03555047 | 0.00976684 | 0.00599398 | 0.03671535 | 0.64232226 | 0.00642137 | 1.00000000 |
| 14B | 0.02878644 | 0.00688867 | 0.03607197 | 0.00990811 | 0.00608189 | 0.03299597 | 0.65161359 | 0.00651184 | 1.00000000 |
| 14C | 0.02950887 | 0.00706269 | 0.03700648 | 0.01016250 | 0.00623945 | 0.03171926 | 0.66834427 | 0.00667625 | 1.00000000 |
| 15A | 0.02993197 | 0.00716455 | 0.03755281 | 0.01031130 | 0.00633155 | 0.03223745 | 0.67812999 | 0.00677252 | 1.00000000 |
| 16A | 0.03091124 | 0.00740007 | 0.03880992 | 0.01065425 | 0.00654531 | 0.03329671 | 0.70068423 | 0.00699505 | 1.00000000 |
| 17F | 0.03212830 | 0.00769290 | 0.04037534 | 0.01108105 | 0.00680742 | 0.03461371 | 0.72875471 | 0.00727174 | 1.00000000 |
| 17G | 0.03219190 | 0.00770814 | 0.04045569 | 0.01110307 | 0.00682097 | 0.03468230 | 0.73020283 | 0.00728615 | 1.00000000 |
| 18A | 0.04929713 | 0.01652427 | 0.10664131 | 0.02926634 | 0.01798005 | | 0.46986948 | | 1.00000000 |
| 19 | 0.04929585 | 0.01652388 | 0.10664396 | 0.02926656 | 0.01798044 | | 0.46987231 | | 1.00000000 |
| 19C | | | | | | | | | 1.00000000 |
| 20A | 0.05324421 | 0.01784728 | 0.11521174 | 0.03161525 | 0.01942494 | | 0.50757898 | | 1.00000000 |
| 20B | 0.05585607 | 0.01872278 | 0.12086783 | 0.03316690 | 0.02037859 | | 0.53249023 | | 1.00000000 |
| 21 | 0.05691567 | | 0.12318381 | 0.03380017 | 0.02076901 | | 0.54265567 | | 1.00000000 |
| 22A | 0.05772584 | | 0.12494639 | 0.03428290 | 0.02106619 | | 0.55040548 | | 1.00000000 |
| 22B | 0.05830722 | | 0.12620561 | 0.03462835 | 0.02127845 | | 0.55595113 | | 1.00000000 |
| 23 | | | 0.14467451 | 0.03969010 | 0.02439237 | | 0.63721302 | | 1.00000000 |
| 24 | | | 0.22243002 | 0.04339445 | 0.02843498 | | 0.64760747 | | 1.00000000 |
| 25 | | | 0.11825184 | 0.03722720 | 0.01993915 | | 0.71389685 | | 1.00000000 |
| 26A | | | 0.14947726 | 0.03997501 | 0.02520426 | | 0.64898177 | | 1.00000000 |
| 28G | | | 0.05126136 | | | | 0.60057777 | | 1.00000000 |
| 28H | | | | | | | 0.63302763 | | 1.00000000 |
| 28J | | | | | | | 0.63302828 | | 1.00000000 |
| 29A | | | | | | 0.05726734 | 0.92702291 | 0.01274255 | 1.00000000 |
| 29F | | | | | | 0.05726649 | 0.92702302 | 0.01274253 | 1.00000000 |
| 29G | | | | | | 0.05742327 | 0.92979606 | 0.01278067 | 1.00000000 |
| 29H | | | | | | 0.03349572 | 0.95753173 | 0.00897255 | 1.00000000 |
| 29J | | | | | | 0.05740996 | 0.92980918 | 0.01278086 | 1.00000000 |
| 30 | | | | | | 0.03248607 | 0.95895422 | 0.00855971 | 1.00000000 |
| 31A | 0.09301782 | | | | | 0.07351496 | | | 1.00000000 |
| 33A | | | | | | | | | 1.00000000 |
| 33B | | | | | | | | | 1.00000000 |
| 34 | | | | | | | | | 1.00000000 |
| 35 | | | | | | | | | 1.00000000 |

^a Proportionate use factors apply to 2019 and reflect permanent capacity water transfers that have been signed as of February 1, 2018.^c Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-3 Power Costs and Credits, Transmission Costs and Annual Replacement Deposits for Each Aqueduct Pumping and Power Recovery Plant^a (in dollars)

Sheet 1 of 3

| Calendar Year | NORTH BAY AQUEDUCT | | | SOUTH BAY AQUEDUCT | | CALIFORNIA AQUEDUCT | | | |
|---------------|-----------------------------|-------------------------------|--|--|----------------------|--------------------------|---------------------------|-----------------------|---|
| | Reach 1 | Reach 3A | Reach 3B | Reach 1 ^c | Reach 1 | Reach 4 | Reach 14A | Reach 15A | |
| | Barker Slough Pumping Plant | Cordelia Pumping Plant Solano | Cordelia Pumping Plant Napa ^b | South Bay and Del Valle Pumping Plants | Banks Pumping Plant | Dos Amigos Pumping Plant | Buena Vista Pumping Plant | Teerink Pumping Plant | |
| [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 36,771 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 55,654 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 73,240 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 137,665 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 186,064 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 216,515 | 15,453 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 6,989 | 336,671 | 452,630 | 202,947 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 8,551 | 257,579 | 293,741 | 135,425 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 13,598 | 396,358 | 346,215 | 211,197 | 1 | 0 | 0 |
| 1971 | 0 | 0 | 10,609 | 381,662 | 574,015 | 225,188 | 115,801 | 2,564 | |
| 1972 | 0 | 0 | 14,434 | 598,702 | 933,292 | 492,633 | 198,914 | 68,304 | |
| 1973 | 0 | 0 | 14,449 | 493,490 | 688,030 | 381,232 | 263,468 | 236,623 | |
| 1974 | 0 | 0 | 17,473 | 565,575 | 783,562 | 447,772 | 315,939 | 324,966 | |
| 1975 | 0 | 0 | 14,779 | 349,758 | 1,341,019 | 518,322 | 508,060 | 552,952 | |
| 1976 | 0 | 0 | 20,856 | 571,361 | 1,638,453 | 641,115 | 712,947 | 713,875 | |
| 1977 | 0 | 0 | 22,635 | 512,996 | 1,013,307 | 277,439 | 265,169 | 300,985 | |
| 1978 | 0 | 0 | 21,692 | 586,355 | 2,339,502 | 560,759 | 689,236 | 616,104 | |
| 1979 | 0 | 0 | 16,237 | 605,136 | 3,554,256 | 1,008,564 | 776,016 | 749,188 | |
| 1980 | 0 | 0 | 19,945 | 523,369 | 2,083,336 | 1,129,152 | 1,051,629 | 1,047,495 | |
| 1981 | 0 | 0 | 23,842 | 567,692 | 3,952,931 | 1,939,189 | 1,336,867 | 1,319,739 | |
| 1982 | 0 | 0 | 12,157 | 605,780 | 3,082,031 | 1,363,705 | 1,200,226 | 1,213,660 | |
| 1983 | 0 | 0 | 2,342 | 82,222 | 1,001,612 | 396,086 | 450,801 | 432,165 | |
| 1984 | 0 | 0 | 4,822 | 271,543 | 1,856,959 | 976,773 | 823,681 | 770,618 | |
| 1985 | 0 | 0 | 10,188 | 451,020 | 3,186,029 | 1,621,418 | 1,409,980 | 1,411,621 | |
| 1986 | 0 | 0 | 15,501 | 807,984 | 6,601,752 | 2,627,407 | 2,405,224 | 2,432,322 | |
| 1987 | 0 | 0 | 27,223 | 886,956 | 5,820,699 | 2,555,341 | 2,295,575 | 2,286,066 | |
| 1988 | 17,813 | 0 | 24,020 | 909,300 | 6,365,669 | 2,648,986 | 2,628,985 | 2,636,224 | |
| 1989 | 29,819 | 43,846 | 26,519 | 1,161,160 | 9,964,956 | 4,002,409 | 4,130,033 | 4,159,440 | |
| 1990 | 52,210 | 67,109 | 40,775 | 1,834,626 | 10,554,762 | 4,541,508 | 5,855,196 | 6,099,412 | |
| 1991 | 10,429 | 10,118 | 5,252 | 378,966 | 1,994,449 | 510,781 | 944,445 | 1,077,662 | |
| 1992 | 13,319 | 13,070 | 9,406 | 311,251 | 3,385,375 | 1,235,571 | 1,366,433 | 1,441,966 | |
| 1993 | (11,941) | (8,753) | (5,392) | (158,214) | 537,591 | 348,409 | (127,617) | (104,923) | |
| 1994 | 46,791 | 39,624 | 29,189 | 799,624 | 6,013,464 | 2,450,174 | 2,778,971 | 2,823,137 | |
| 1995 | 20,014 | 20,620 | 11,791 | 247,645 | 4,066,595 | 1,532,502 | 952,304 | 877,047 | |
| 1996 | 57,320 | 47,288 | 23,483 | 619,160 | 8,385,766 | 4,056,188 | 2,565,655 | 2,378,677 | |
| 1997 | 67,416 | 52,935 | 21,955 | 986,312 | 7,010,228 | 2,870,194 | 2,637,433 | 2,469,147 | |
| 1998 | (11,427) | (10,141) | (4,879) | (133,721) | 204,374 | (365,361) | (319,014) | (295,861) | |
| 1999 | 36,054 | 26,104 | 11,921 | 521,799 | 6,462,089 | 2,482,790 | 1,749,495 | 1,508,344 | |
| 2000 | 60,770 | 42,270 | 15,522 | 738,749 | 8,139,852 | 3,158,037 | 3,023,609 | 3,191,600 | |
| 2001 | 370,971 | 247,499 | 211,786 | 4,203,321 | 27,319,774 | 10,577,923 | 14,853,220 | 15,739,675 | |
| 2002 | 192,540 | 104,564 | 61,470 | 2,036,126 | 17,666,689 | 7,284,182 | 8,870,415 | 9,554,380 | |
| 2003 | 198,411 | 118,387 | 97,762 | 2,591,352 | 24,686,904 | 9,172,710 | 10,694,766 | 11,529,669 | |
| 2004 | 262,243 | 139,241 | 107,251 | 2,420,894 | 22,910,295 | 9,450,923 | 12,600,249 | 13,757,895 | |
| 2005 | 291,101 | 147,895 | 149,083 | 2,791,021 | 33,776,092 | 12,750,371 | 11,843,712 | 12,615,882 | |
| 2006 | 241,071 | 116,793 | 147,822 | 2,557,274 | 24,219,154 | 10,494,388 | 11,501,625 | 12,301,991 | |
| 2007 | 461,133 | 228,027 | 211,114 | 4,809,352 | 23,665,226 | 11,668,457 | 17,485,048 | 18,965,724 | |
| 2008 | 430,948 | 196,002 | 307,991 | 3,431,289 | 14,723,919 | 6,683,531 | 11,681,148 | 13,416,732 | |
| 2009 | 221,663 | 103,260 | 164,907 | 2,501,337 | 13,813,149 | 4,319,858 | 7,108,489 | 7,915,743 | |
| 2010 | 265,307 | 112,274 | 219,596 | 2,505,625 | 27,495,812 | 9,982,163 | 11,242,685 | 11,838,227 | |
| 2011 | 275,556 | 115,853 | 232,342 | 3,360,022 | 40,345,447 | 15,490,865 | 14,791,387 | 15,502,466 | |
| 2012 | 268,876 | 119,755 | 188,049 | 3,669,585 | 23,718,573 | 12,244,296 | 14,182,610 | 14,515,920 | |
| 2013 | 446,533 | 208,297 | 332,169 | 5,287,306 | 23,457,954 | 9,743,375 | 13,388,205 | 13,807,865 | |
| 2014 | 391,609 | 186,245 | 479,584 | 4,512,835 | 18,564,692 | 4,810,118 | 8,647,248 | 9,003,934 | |
| 2015 | 391,565 | 239,597 | 362,003 | 5,319,023 | 16,602,824 | 6,163,494 | 10,585,367 | 11,959,071 | |
| 2016 | 282,284 | 158,889 | 264,640 | 4,677,146 | 38,145,718 | 12,480,770 | 16,673,400 | 18,073,419 | |
| 2017 | 310,462 | 185,211 | 200,720 | 3,347,507 | 47,559,586 | 22,783,585 | 24,572,578 | 25,900,644 | |
| 2018 | 532,357 | 310,428 | 338,879 | 5,583,851 | 31,851,619 | 11,904,917 | 15,507,187 | 16,017,150 | |
| 2019 | 539,108 | 153,908 | 518,402 | 4,391,090 | 38,813,635 | 18,347,490 | 19,526,740 | 20,204,756 | |
| 2020 | 495,996 | 474,448 | 473,366 | 5,594,290 | 35,771,927 | 16,257,917 | 20,462,474 | 21,095,490 | |
| 2021 | 511,707 | 489,476 | 488,359 | 5,751,220 | 42,922,098 | 16,470,988 | 20,819,012 | 21,446,173 | |
| 2022 | 550,300 | 0 | 360,318 | 5,331,366 | 44,813,202 | 17,277,070 | 21,702,902 | 22,342,469 | |
| 2023 | 551,665 | 0 | 361,212 | 5,353,722 | 36,779,772 | 17,146,818 | 21,448,279 | 22,063,342 | |
| 2024 | 551,629 | 0 | 361,188 | 5,353,385 | 38,441,587 | 17,145,683 | 21,446,858 | 22,061,881 | |
| 2025 | 551,753 | 0 | 361,270 | 5,354,590 | 36,416,172 | 17,149,544 | 21,451,688 | 22,066,849 | |
| 2026 | 551,630 | 0 | 361,189 | 5,353,396 | 37,471,111 | 17,145,719 | 21,446,904 | 22,061,928 | |
| 2027 | 551,783 | 0 | 361,289 | 5,354,884 | 36,949,844 | 17,150,483 | 21,452,862 | 22,068,057 | |
| 2028 | 551,629 | 0 | 361,189 | 5,353,392 | 36,939,553 | 17,145,706 | 21,446,888 | 22,061,911 | |
| 2029 | 552,219 | 0 | 361,575 | 5,359,111 | 26,720,021 | 17,164,023 | 21,469,799 | 22,085,479 | |
| 2030 | 551,515 | 0 | 361,114 | 5,352,278 | 39,485,739 | 17,142,137 | 21,442,422 | 22,057,318 | |
| 2031 | 551,871 | 0 | 361,347 | 5,355,737 | 31,668,336 | 17,153,215 | 21,456,280 | 22,071,573 | |
| 2032 | 550,888 | 0 | 360,703 | 5,503,171 | 49,585,228 | 17,152,055 | 21,470,817 | 22,089,476 | |
| 2033 | 551,895 | 0 | 361,362 | 5,242,917 | 32,850,334 | 17,124,494 | 21,404,337 | 22,015,185 | |
| 2034 | 551,718 | 0 | 361,246 | 5,354,247 | 36,004,010 | 17,148,443 | 21,450,311 | 22,065,433 | |
| 2035 | 551,605 | 0 | 361,173 | 5,353,155 | 39,075,773 | 17,144,947 | 21,445,938 | 22,060,934 | |
| TOTAL | 15,492,129 | 4,500,137 | 11,167,354 | 175,091,610 | 1,225,875,763 | 526,456,508 | 640,579,312 | 667,075,760 | |

^a Starting with 2005, transmission costs that vary and depend on power usage are included, therefore recovered through the variable component.^b Power costs for the period 1968 through 1987 are for an interim facility.^c The costs of Del Valle Pumping Plant are combined with those of South Bay Pumping Plant to simplify the cost allocations.

TABLE B-3 Power Costs and Credits, Transmission Costs and Annual Replacement Deposits for Each Aqueduct Pumping and Power Recovery Plant^a (in dollars)

Sheet 2 of 3

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | |
|---------------|---------------------------------|-------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|------------------------|
| | Reach 16A | Reach 17E | Reach 18A | Reach 22B | Reach 23 | Reach 26A | Reach 2B (EBX) | Reach 2E (EBX) |
| | Chrisman Pumping Plant | Edmonston Pumping Plant | Alamo Pumping Plant | Pearblossom Pumping Plant | Mojave Siphon Powerplant | Devil Canyon Powerplant | Greenspot Pump Station | Citrus Pumping Station |
| [9] | [10] | [11] | [12] | [13] | [14] | [15] | [16] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 142,902 | 542,625 | 0 | 3,468 | 0 | (3,024) | 0 | 0 |
| 1973 | 387,198 | 1,548,428 | 0 | 202,289 | 0 | (461,268) | 0 | 0 |
| 1974 | 564,464 | 2,164,223 | 0 | 324,993 | 0 | (546,156) | 0 | 0 |
| 1975 | 1,095,331 | 4,010,395 | 0 | 575,061 | 0 | (1,095,523) | 0 | 0 |
| 1976 | 1,506,985 | 5,443,936 | 0 | 889,544 | 0 | (1,566,056) | 0 | 0 |
| 1977 | 652,643 | 2,345,033 | 0 | 315,128 | 0 | (1,222,866) | 0 | 0 |
| 1978 | 1,132,296 | 4,180,131 | 0 | 1,508,115 | 0 | (3,085,094) | 0 | 0 |
| 1979 | 1,526,850 | 5,475,688 | 0 | 1,838,687 | 0 | (3,466,481) | 0 | 0 |
| 1980 | 2,102,439 | 7,028,235 | 0 | 1,762,063 | 0 | (3,318,152) | 0 | 0 |
| 1981 | 2,838,773 | 9,351,931 | 0 | 2,296,771 | 0 | (3,842,971) | 0 | 0 |
| 1982 | 2,424,920 | 8,352,207 | 0 | 1,498,620 | 0 | (2,736,072) | 0 | 0 |
| 1983 | 793,915 | 2,375,225 | 0 | 397,766 | 0 | (5,478,830) | 0 | 0 |
| 1984 | 1,479,784 | 4,585,198 | 0 | 624,213 | 0 | (7,350,989) | 0 | 0 |
| 1985 | 2,812,461 | 9,365,591 | 0 | 1,226,515 | 0 | (10,748,103) | 0 | 0 |
| 1986 | 4,999,949 | 16,956,023 | (1,013,756) | 2,359,599 | 0 | (11,484,996) | 0 | 0 |
| 1987 | 4,586,919 | 15,121,886 | (1,064,827) | 1,907,854 | 0 | (11,151,140) | 0 | 0 |
| 1988 | 5,284,130 | 17,342,811 | (744,374) | 2,375,784 | 0 | (14,495,967) | 0 | 0 |
| 1989 | 8,772,733 | 29,455,330 | (789,392) | 4,235,981 | 0 | (18,688,631) | 0 | 0 |
| 1990 | 13,814,150 | 49,027,449 | (841,172) | 6,559,548 | 0 | (21,045,321) | 0 | 0 |
| 1991 | 2,535,180 | 9,033,684 | (269,625) | 996,352 | 0 | (4,884,013) | 0 | 0 |
| 1992 | 2,907,026 | 9,754,469 | (975,679) | 1,225,121 | 0 | (9,782,946) | 0 | 0 |
| 1993 | (598,008) | (2,721,158) | (58,116) | (260,035) | 0 | (7,502,549) | 0 | 0 |
| 1994 | 5,941,789 | 20,657,617 | (60,125) | 2,644,592 | 0 | (11,998,949) | 0 | 0 |
| 1995 | 1,752,212 | 5,829,425 | (1,324,810) | 1,106,460 | 0 | (9,742,248) | 0 | 0 |
| 1996 | 5,050,986 | 17,658,964 | (2,955,178) | 2,833,791 | (979,429) | (12,358,465) | 0 | 0 |
| 1997 | 5,545,919 | 19,859,875 | (2,572,220) | 3,156,995 | (1,748,195) | (13,830,356) | 0 | 0 |
| 1998 | (664,843) | (2,312,472) | (2,016,390) | (443,482) | (1,253,110) | (10,108,555) | 0 | 0 |
| 1999 | 3,755,592 | 14,466,419 | (2,980,122) | 1,910,542 | (2,587,958) | (15,232,207) | 0 | 0 |
| 2000 | 7,198,298 | 25,885,224 | (5,123,988) | 3,787,674 | (4,402,610) | (25,758,437) | 0 | 0 |
| 2001 | 35,022,118 | 127,851,427 | (3,383,762) | 18,669,512 | (3,714,425) | (20,062,834) | 0 | 0 |
| 2002 | 21,173,346 | 77,461,814 | (5,057,760) | 10,849,297 | (5,371,837) | (25,292,454) | 0 | 0 |
| 2003 | 25,596,032 | 94,010,922 | (3,408,979) | 14,573,122 | (6,565,620) | (27,777,638) | 0 | 0 |
| 2004 | 30,537,142 | 112,157,127 | (6,431,864) | 17,022,676 | (7,858,117) | (32,044,505) | 78,555 | 0 |
| 2005 | 27,845,084 | 97,798,938 | (5,880,165) | 17,454,941 | (6,454,740) | (28,818,797) | 69,542 | 0 |
| 2006 | 26,893,390 | 84,686,741 | (4,091,143) | 15,807,815 | (6,391,206) | (34,897,387) | 123,158 | 0 |
| 2007 | 41,386,287 | 138,616,086 | (3,029,048) | 19,242,178 | (5,896,486) | (28,814,592) | 248,624 | 0 |
| 2008 | 26,302,184 | 82,315,216 | (3,426,928) | 10,847,698 | (3,300,797) | (16,968,293) | 243,107 | 0 |
| 2009 | 16,499,234 | 75,427,558 | (3,266,008) | 9,229,280 | (2,288,833) | (13,842,660) | 360,336 | 0 |
| 2010 | 26,187,769 | 95,966,913 | (5,115,083) | 16,896,213 | (5,653,201) | (24,769,829) | 313,515 | 0 |
| 2011 | 33,898,542 | 118,678,644 | (6,536,645) | 23,343,392 | (7,792,422) | (32,285,174) | 371,784 | 0 |
| 2012 | 32,006,954 | 111,758,355 | (2,492,869) | 16,862,107 | (8,905,115) | (23,525,846) | 436,935 | 0 |
| 2013 | 30,168,392 | 106,243,852 | (2,081,221) | 12,357,796 | (4,915,165) | (14,305,918) | 488,293 | 0 |
| 2014 | 19,779,783 | 68,490,047 | (1,786,122) | 7,222,185 | (1,465,644) | (5,391,598) | 318,652 | 0 |
| 2015 | 26,510,190 | 94,340,713 | (2,289,717) | 9,214,876 | (2,103,231) | (6,675,218) | 343,191 | 0 |
| 2016 | 39,854,548 | 142,713,658 | (7,801,980) | 24,207,598 | (8,723,634) | (21,862,397) | 703,755 | 0 |
| 2017 | 56,639,100 | 205,550,740 | (14,494,695) | 40,090,885 | (21,279,891) | (37,337,924) | 370,687 | 1,050,626 |
| 2018 | 35,366,267 | 126,212,465 | (5,755,465) | 21,804,074 | (6,979,417) | (19,682,937) | 7,990 | 1,229,069 |
| 2019 | 45,527,855 | 165,555,021 | (8,879,124) | 29,006,758 | (13,396,431) | (27,845,033) | 1,149,558 | 792,704 |
| 2020 | 48,150,688 | 176,453,811 | (12,231,524) | 31,072,377 | (15,401,014) | (26,524,892) | 0 | 495,759 |
| 2021 | 48,881,828 | 178,867,235 | (12,373,086) | 31,397,108 | (15,506,154) | (26,659,110) | 0 | 536,349 |
| 2022 | 50,944,834 | 186,496,730 | (11,039,408) | 28,034,775 | (13,872,902) | (23,685,449) | 0 | 540,327 |
| 2023 | 50,295,143 | 184,072,700 | (10,998,411) | 27,995,909 | (13,819,373) | (23,685,449) | 0 | 541,668 |
| 2024 | 50,291,812 | 184,060,509 | (10,998,411) | 27,994,055 | (13,819,373) | (23,685,450) | 0 | 541,632 |
| 2025 | 50,303,138 | 184,101,959 | (10,998,411) | 28,000,359 | (13,819,373) | (23,685,450) | 0 | 541,754 |
| 2026 | 50,291,919 | 184,060,903 | (10,998,411) | 27,994,114 | (13,819,373) | (23,685,450) | 0 | 541,633 |
| 2027 | 50,305,891 | 184,112,039 | (10,998,411) | 28,001,891 | (13,819,373) | (23,685,450) | 0 | 541,783 |
| 2028 | 50,291,881 | 184,060,762 | (10,998,411) | 27,994,093 | (13,819,373) | (23,685,449) | 0 | 541,632 |
| 2029 | 50,345,607 | 184,257,389 | (10,998,411) | 28,023,999 | (13,819,373) | (23,685,449) | 0 | 542,211 |
| 2030 | 50,281,411 | 184,022,442 | (10,998,411) | 27,988,265 | (13,819,373) | (23,685,450) | 0 | 541,520 |
| 2031 | 50,313,906 | 184,141,368 | (10,998,411) | 28,006,353 | (13,819,373) | (23,685,450) | 0 | 541,870 |
| 2032 | 50,357,015 | 184,307,077 | (11,050,955) | 28,100,839 | (13,890,746) | (23,685,450) | 0 | 540,904 |
| 2033 | 50,183,063 | 183,654,560 | (10,945,867) | 27,862,903 | (13,748,000) | (23,685,449) | 0 | 541,893 |
| 2034 | 50,299,910 | 184,090,145 | (10,998,411) | 27,998,562 | (13,819,373) | (23,685,449) | 0 | 541,719 |
| 2035 | 50,289,654 | 184,052,611 | (10,998,411) | 27,992,854 | (13,819,373) | (23,685,449) | 0 | 541,608 |
| TOTAL | 1,489,364,910 | 5,373,432,866 | (296,621,713) | 837,020,870 | (364,459,433) | (1,069,967,694) | 5,627,681 | 11,686,661 |

^a Starting with 2005, transmission costs that vary and depend on power usage are included, therefore recovered through the variable component.

TABLE B-3 Power Costs and Credits, Transmission Costs and Annual Replacement Deposits for Each Aqueduct Pumping and Power Recovery Plant^a (in dollars)

Sheet 3 of 3

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | Grand Total |
|---------------|---------------------------------|----------------------------|--------------------|----------------------|----------------------|---|---|----------------------|
| | Reach 3A (EBX) | Reach 4B (EBX) | Reach 29A | Reach 29G | Reach 29J | Reach 31A | Reach 33A | |
| | Crafton Hills Pumping Station | Cherry Valley Pump Station | Oso Pumping Plant | Warne Powerplant | Castaic Powerplant | Las Perillas and Badger Hill Pumping Plants | Devil's Den, Bluestone, and Polonio Pass Pumping Plants | |
| [17] | [18] | [19] | [20] | [21] | [22] | [23] | [24] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36,771 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55,654 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73,240 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 137,665 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 186,064 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 231,968 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 118,676 | 0 | 1,117,913 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 78,350 | 0 | 773,646 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 136,429 | 0 | 1,103,798 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 166,296 | 0 | 1,476,135 |
| 1972 | 0 | 0 | 79,315 | 0 | (211,144) | 212,938 | 0 | 3,073,359 |
| 1973 | 0 | 0 | 122,787 | 0 | (1,057,564) | 114,897 | 0 | 2,934,059 |
| 1974 | 0 | 0 | 157,511 | 0 | (1,547,884) | 111,442 | 0 | 3,683,880 |
| 1975 | 0 | 0 | 314,636 | 0 | (2,455,461) | 88,451 | 0 | 5,817,780 |
| 1976 | 0 | 0 | 326,967 | 0 | (2,827,557) | 139,279 | 0 | 8,211,705 |
| 1977 | 0 | 0 | 75,335 | 0 | (3,734,462) | 63,079 | 0 | 886,421 |
| 1978 | 0 | 0 | 89,383 | 0 | (1,542,479) | 176,153 | 0 | 7,272,153 |
| 1979 | 0 | 0 | 102,584 | 0 | (2,776,030) | 188,881 | 0 | 9,599,576 |
| 1980 | 0 | 0 | 236,768 | 0 | (3,415,486) | 168,458 | 0 | 10,419,251 |
| 1981 | 0 | 0 | 444,280 | 0 | (2,834,322) | 169,177 | 0 | 17,563,899 |
| 1982 | 0 | 0 | 539,245 | (783,626) | (3,463,971) | 168,390 | 0 | 13,477,272 |
| 1983 | 0 | 0 | 214,069 | (1,488,439) | (6,649,718) | 17,920 | 0 | (7,452,864) |
| 1984 | 0 | 0 | 484,239 | (4,088,209) | (4,710,802) | 112,679 | 0 | (4,159,491) |
| 1985 | 0 | 0 | 874,069 | (5,930,176) | (15,698,638) | 146,843 | 0 | (9,861,182) |
| 1986 | 0 | 0 | 1,269,590 | (5,579,301) | (11,072,448) | 297,886 | 0 | 11,622,736 |
| 1987 | 0 | 0 | 1,355,533 | (6,445,265) | (11,726,458) | 245,082 | 0 | 6,701,444 |
| 1988 | 0 | 0 | 1,515,349 | (7,457,050) | (13,026,992) | 214,519 | 0 | 6,239,207 |
| 1989 | 0 | 0 | 2,156,915 | (8,822,367) | (15,535,849) | 282,180 | 0 | 24,585,082 |
| 1990 | 0 | 0 | 2,913,030 | (11,225,401) | (20,510,539) | 416,832 | 0 | 48,154,174 |
| 1991 | 0 | 0 | 576,721 | (3,882,595) | (6,579,194) | 3,610 | 0 | 2,462,222 |
| 1992 | 0 | 0 | 829,862 | (6,369,339) | (10,976,538) | 101,665 | 0 | (5,509,968) |
| 1993 | 0 | 0 | 70,836 | (4,665,393) | (9,531,404) | (111,306) | 0 | (24,907,973) |
| 1994 | 0 | 0 | 1,503,796 | (7,249,239) | (13,126,331) | 206,086 | (1,127) | 13,499,083 |
| 1995 | 0 | 0 | 247,869 | (1,934,202) | (4,049,615) | 243,434 | 0 | (142,957) |
| 1996 | 0 | 0 | 895,929 | (4,248,531) | (8,457,232) | 296,170 | 0 | 15,870,542 |
| 1997 | 0 | 0 | 902,690 | (4,824,488) | (8,776,260) | 298,483 | 208,816 | 14,336,879 |
| 1998 | 0 | 0 | (67,399) | (1,811,154) | (4,644,120) | (55,491) | (92,902) | (24,405,948) |
| 1999 | 0 | 0 | 757,085 | (5,831,573) | (9,811,777) | 170,445 | 241,369 | (2,343,588) |
| 2000 | 0 | 0 | 1,307,386 | (10,161,472) | (17,729,381) | 228,532 | 378,042 | (6,020,323) |
| 2001 | 0 | 0 | 6,412,531 | (7,918,467) | (13,370,061) | 1,061,695 | 2,140,040 | 216,231,944 |
| 2002 | 0 | 0 | 4,246,409 | (11,349,183) | (19,513,997) | 547,531 | 1,344,783 | 94,808,314 |
| 2003 | 0 | 0 | 4,642,103 | (10,436,535) | (17,134,431) | 637,936 | 1,538,955 | 134,765,827 |
| 2004 | 68,914 | 7,290 | 5,682,375 | (12,281,228) | (21,354,179) | 675,724 | 1,804,179 | 149,713,081 |
| 2005 | 48,909 | 2,544 | 3,705,184 | (7,106,531) | (13,339,416) | 858,232 | 1,749,845 | 162,298,726 |
| 2006 | 144,035 | 16,226 | 2,751,478 | (7,208,025) | (12,042,760) | 866,740 | 1,540,977 | 129,780,157 |
| 2007 | 256,311 | 11,163 | 7,582,725 | (11,444,524) | (21,845,299) | 1,341,234 | 2,345,132 | 217,539,871 |
| 2008 | 327,188 | 7,446 | 4,778,331 | (7,762,363) | (14,997,326) | 1,168,576 | 1,735,061 | 132,140,660 |
| 2009 | 391,227 | 7,528 | 4,623,779 | (6,997,502) | (15,725,766) | 710,757 | 1,018,438 | 102,295,775 |
| 2010 | 431,025 | 19,505 | 3,835,496 | (6,643,531) | (11,641,405) | 939,568 | 1,507,145 | 155,935,790 |
| 2011 | 499,615 | 33,108 | 3,568,564 | (5,996,974) | (10,892,193) | 1,149,892 | 2,173,461 | 210,327,529 |
| 2012 | 533,579 | 48,171 | 5,510,580 | (8,863,057) | (15,797,149) | 1,041,736 | 2,019,898 | 179,541,943 |
| 2013 | 571,363 | 41,120 | 6,833,067 | (9,189,037) | (15,851,695) | 1,459,051 | 2,090,534 | 180,582,135 |
| 2014 | 442,376 | 16,646 | 4,853,414 | (4,376,621) | (7,912,327) | 1,682,827 | 2,554,978 | 131,024,862 |
| 2015 | 458,377 | 15,061 | 7,324,653 | (6,599,051) | (11,183,098) | 1,686,485 | 1,997,584 | 164,663,758 |
| 2016 | 779,595 | 48,987 | 6,570,806 | (7,078,001) | (12,085,744) | 1,619,396 | 3,134,742 | 252,837,595 |
| 2017 | 1,235,058 | 86,107 | 6,598,290 | (7,354,995) | (12,930,250) | 1,692,062 | 3,146,007 | 347,922,100 |
| 2018 | 970,609 | 44,448 | 5,331,980 | (5,753,362) | (10,120,900) | 2,035,068 | 3,704,985 | 230,461,260 |
| 2019 | 551,211 | 62,992 | 6,485,829 | (7,278,372) | (12,538,623) | 1,344,036 | 3,509,359 | 286,542,869 |
| 2020 | 471,185 | 83,706 | 6,390,118 | (6,626,990) | (11,171,833) | 1,166,861 | 3,942,093 | 296,896,253 |
| 2021 | 471,501 | 83,762 | 6,497,955 | (6,728,071) | (11,296,319) | 1,167,843 | 3,946,517 | 308,186,391 |
| 2022 | 474,997 | 84,383 | 8,399,235 | (8,690,572) | (13,784,458) | 784,572 | 5,153,816 | 322,218,507 |
| 2023 | 476,176 | 84,593 | 8,124,634 | (8,403,655) | (13,223,578) | 787,208 | 5,172,759 | 311,125,151 |
| 2024 | 476,145 | 84,587 | 8,124,096 | (8,423,439) | (13,223,578) | 787,156 | 5,172,416 | 312,744,368 |
| 2025 | 476,252 | 84,606 | 8,125,926 | (8,422,607) | (13,223,578) | 787,333 | 5,173,581 | 310,797,355 |
| 2026 | 476,146 | 84,587 | 8,124,114 | (8,422,607) | (13,223,578) | 787,158 | 5,172,427 | 311,775,459 |
| 2027 | 476,278 | 84,611 | 8,126,371 | (8,422,607) | (13,223,578) | 787,376 | 5,173,864 | 311,349,887 |
| 2028 | 476,145 | 84,587 | 8,124,107 | (8,404,487) | (13,223,578) | 787,157 | 5,172,423 | 311,261,757 |
| 2029 | 476,654 | 84,678 | 8,132,786 | (8,403,655) | (13,223,578) | 787,998 | 5,177,949 | 301,411,032 |
| 2030 | 476,046 | 84,570 | 8,122,416 | (8,422,607) | (13,223,578) | 786,993 | 5,171,346 | 313,718,113 |
| 2031 | 476,354 | 84,624 | 8,127,665 | (8,422,607) | (13,223,578) | 787,502 | 5,174,688 | 306,123,270 |
| 2032 | 475,505 | 84,474 | 8,113,184 | (8,423,439) | (13,223,578) | 786,099 | 5,165,468 | 324,368,735 |
| 2033 | 476,374 | 84,628 | 8,128,014 | (8,422,607) | (13,223,578) | 787,536 | 5,174,910 | 306,418,904 |
| 2034 | 476,221 | 84,601 | 8,125,404 | (8,403,655) | (13,223,578) | 787,283 | 5,173,249 | 310,382,036 |
| 2035 | 476,124 | 84,584 | 8,123,748 | (8,403,655) | (13,223,578) | 787,122 | 5,172,194 | 313,383,558 |
| TOTAL | 15,317,495 | 1,819,922 | 248,543,745 | (385,882,439) | (696,915,399) | 41,088,208 | 122,080,000 | 8,598,374,254 |

^a Starting with 2005, transmission costs that vary and depend on power usage are included, therefore recovered through the variable component.

Tables B-4 through B-31

Note: Where applicable, the projected data values shown in this appendix are shaded and the bill year data are in **bold** type.

TABLE B-4 Maximum Contractual Table A Amounts (acre-feet)

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA ^a | | | | CENTRAL COASTAL AREA | | |
|---------------|-------------------|------------------|------------------|-----------------------------|------------------|------------------|-------------------|----------------------|------------------|------------------|
| | Napa ^b | Solano | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| 1962 | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 507 | 5,248 | 5,783 | 11,538 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 6,900 | 15,000 | 88,000 | 109,900 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 8,200 | 15,500 | 75,000 | 98,700 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 10,000 | 16,200 | 88,000 | 114,200 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 11,200 | 17,000 | 88,000 | 116,200 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 12,400 | 17,900 | 88,000 | 118,300 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 13,600 | 18,800 | 88,000 | 120,400 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 14,800 | 19,600 | 88,000 | 122,400 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 16,000 | 20,500 | 88,000 | 124,500 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 17,200 | 21,300 | 88,000 | 126,500 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 18,400 | 22,200 | 88,000 | 128,600 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 19,600 | 23,100 | 88,000 | 130,700 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 20,800 | 23,900 | 88,000 | 132,700 | 0 | 0 | 0 |
| 1980 | 0 | 500 | 500 | 22,000 | 24,800 | 88,000 | 134,800 | 1,000 | 946 | 1,946 |
| 1981 | 0 | 650 | 650 | 23,000 | 26,000 | 88,000 | 137,000 | 1,000 | 1,813 | 2,813 |
| 1982 | 0 | 800 | 800 | 24,000 | 27,200 | 88,000 | 139,200 | 2,000 | 3,626 | 5,626 |
| 1983 | 0 | 950 | 950 | 25,000 | 28,400 | 88,000 | 141,400 | 3,000 | 5,439 | 8,439 |
| 1984 | 0 | 1,100 | 1,100 | 26,000 | 29,600 | 88,000 | 143,600 | 4,500 | 8,198 | 12,698 |
| 1985 | 0 | 1,250 | 1,250 | 27,000 | 30,800 | 88,000 | 145,800 | 7,500 | 13,638 | 21,138 |
| 1986 | 0 | 1,400 | 1,400 | 28,000 | 32,100 | 88,000 | 148,100 | 10,000 | 18,210 | 28,210 |
| 1987 | 0 | 1,550 | 1,550 | 29,000 | 33,300 | 88,000 | 150,300 | 12,500 | 22,704 | 35,204 |
| 1988 | 5,745 | 9,726 | 15,471 | 30,000 | 34,500 | 88,000 | 152,500 | 15,500 | 28,222 | 43,722 |
| 1989 | 6,195 | 18,420 | 24,615 | 31,000 | 35,700 | 90,000 | 156,700 | 20,000 | 36,342 | 56,342 |
| 1990 | 6,940 | 21,250 | 28,190 | 32,000 | 36,900 | 92,000 | 160,900 | 25,000 | 45,486 | 70,486 |
| 1991 | 7,290 | 22,300 | 29,590 | 34,000 | 38,400 | 94,000 | 166,400 | 25,000 | 45,486 | 70,486 |
| 1992 | 7,840 | 24,170 | 32,010 | 36,000 | 39,900 | 96,000 | 171,900 | 25,000 | 45,486 | 70,486 |
| 1993 | 8,490 | 26,130 | 34,620 | 38,000 | 41,400 | 98,000 | 177,400 | 25,000 | 45,486 | 70,486 |
| 1994 | 9,135 | 28,080 | 37,215 | 40,000 | 42,000 | 100,000 | 182,000 | 25,000 | 45,486 | 70,486 |
| 1995 | 9,780 | 34,250 | 44,030 | 42,000 | 42,000 | 100,000 | 184,000 | 25,000 | 45,486 | 70,486 |
| 1996 | 10,425 | 37,800 | 48,225 | 44,000 | 42,000 | 100,000 | 186,000 | 25,000 | 45,486 | 70,486 |
| 1997 | 11,065 | 38,250 | 49,315 | 46,000 | 42,000 | 100,000 | 188,000 | 6,215 | 38,986 | 45,201 |
| 1998 | 11,710 | 38,710 | 50,420 | 46,000 | 42,000 | 100,000 | 188,000 | 6,215 | 38,986 | 45,201 |
| 1999 | 15,850 | 39,170 | 55,020 | 46,000 | 42,000 | 100,000 | 188,000 | 25,000 | 45,486 | 70,486 |
| 2000 | 16,325 | 39,620 | 55,945 | 68,000 | 42,000 | 100,000 | 210,000 | 25,000 | 45,486 | 70,486 |
| 2001 | 20,725 | 45,836 | 66,561 | 78,000 | 42,000 | 100,000 | 220,000 | 25,000 | 45,486 | 70,486 |
| 2002 | 21,100 | 46,296 | 67,396 | 78,000 | 42,000 | 100,000 | 220,000 | 25,000 | 45,486 | 70,486 |
| 2003 | 21,475 | 46,756 | 68,231 | 78,400 | 42,000 | 100,000 | 220,400 | 25,000 | 45,486 | 70,486 |
| 2004 | 21,850 | 47,206 | 69,056 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2005 | 22,225 | 47,256 | 69,481 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2006 | 22,550 | 47,306 | 69,856 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2007 | 22,875 | 47,356 | 70,231 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2008 | 23,200 | 47,406 | 70,606 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2009 | 23,525 | 47,456 | 70,981 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2010 | 29,025 | 47,506 | 76,531 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2011 | 29,025 | 47,556 | 76,581 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2012 | 29,025 | 47,606 | 76,631 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2013 | 29,025 | 47,656 | 76,681 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2014 | 29,025 | 47,706 | 76,731 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2015 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2016 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2017 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2018 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2019 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2020 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2021 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2022 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2023 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2024 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2025 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2026 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2027 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2028 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2029 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2030 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2031 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2032 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2033 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2034 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| 2035 | 29,025 | 47,756 | 76,781 | 80,619 | 42,000 | 100,000 | 222,619 | 25,000 | 45,486 | 70,486 |
| TOTAL | 1,080,965 | 2,049,856 | 3,130,821 | 3,720,815 | 2,459,248 | 6,510,783 | 12,690,846 | 1,189,430 | 2,218,494 | 3,407,924 |

^a Table A amounts for the South Bay Area were supplied by non-project water for the period June 1962 through November 1967. Actual delivery quantities of project water are shown for 1967.

^b Napa's Table A quantities exclude amounts during the period 1968 through 1987 that were supplied by non-project water.

TABLE B-4 Maximum Contractual Table A Amounts (acre-feet)

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | | | |
|---------------|-------------------------|----------------|--------------------------|-------------------|-------------------|----------------|----------------|------------------|-------------------|-------|
| | Dudley Ridge | Empire | Kern | | | Total | Kings | Oak Flat | Tulare | Total |
| | | | Municipal and Industrial | Agricultural | Total | | | | | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 14,300 | 1,000 | 0 | 46,600 | 46,600 | 900 | 2,300 | 12,250 | 77,350 | |
| 1969 | 14,325 | 3,000 | 0 | 95,700 | 95,700 | 1,200 | 2,500 | 46,350 | 163,075 | |
| 1970 | 15,700 | 3,000 | 28,700 | 116,400 | 145,100 | 1,300 | 2,600 | 34,300 | 202,000 | |
| 1971 | 17,900 | 3,000 | 35,700 | 154,600 | 190,300 | 1,300 | 2,800 | 36,500 | 251,800 | |
| 1972 | 20,000 | 3,000 | 39,200 | 231,500 | 270,700 | 1,400 | 5,366 | 112,600 | 413,066 | |
| 1973 | 22,000 | 3,000 | 43,500 | 267,000 | 310,500 | 1,500 | 3,100 | 43,552 | 383,652 | |
| 1974 | 33,390 | 3,000 | 48,000 | 299,000 | 347,000 | 1,500 | 3,471 | 72,289 | 460,650 | |
| 1975 | 40,555 | 3,000 | 52,700 | 358,120 | 410,820 | 1,600 | 3,576 | 86,258 | 545,809 | |
| 1976 | 30,921 | 3,000 | 56,100 | 386,050 | 442,150 | 1,600 | 4,039 | 61,707 | 543,417 | |
| 1977 | 30,400 | 3,000 | 60,600 | 423,000 | 483,600 | 1,700 | 3,700 | 59,000 | 581,400 | |
| 1978 | 32,500 | 0 | 64,100 | 470,200 | 534,300 | 1,900 | 3,900 | 63,300 | 635,900 | |
| 1979 | 38,544 | 3,000 | 67,600 | 516,300 | 583,900 | 2,000 | 4,000 | 71,241 | 702,685 | |
| 1980 | 41,000 | 3,000 | 71,100 | 563,400 | 634,500 | 2,200 | 5,700 | 71,700 | 758,100 | |
| 1981 | 41,000 | 3,000 | 74,800 | 616,600 | 691,400 | 2,300 | 4,300 | 76,000 | 818,000 | |
| 1982 | 41,000 | 3,000 | 79,600 | 665,700 | 745,300 | 2,500 | 4,500 | 80,200 | 876,500 | |
| 1983 | 42,900 | 3,000 | 83,500 | 721,600 | 805,100 | 2,800 | 3,770 | 9,548 | 867,118 | |
| 1984 | 45,100 | 3,000 | 103,600 | 757,000 | 860,600 | 3,100 | 4,800 | 62,611 | 979,211 | |
| 1985 | 47,200 | 3,000 | 108,900 | 806,100 | 915,000 | 3,400 | 4,900 | 45,549 | 1,019,049 | |
| 1986 | 49,300 | 3,000 | 113,400 | 820,246 | 933,646 | 3,700 | 5,100 | 97,200 | 1,091,946 | |
| 1987 | 51,400 | 3,000 | 119,100 | 904,400 | 1,023,500 | 4,000 | 5,200 | 101,400 | 1,188,500 | |
| 1988 | 53,500 | 3,000 | 123,900 | 950,700 | 1,074,600 | 4,000 | 5,400 | 105,600 | 1,246,100 | |
| 1989 | 55,600 | 3,000 | 128,200 | 984,100 | 1,112,300 | 4,000 | 5,600 | 109,900 | 1,290,400 | |
| 1990 | 28,850 | 3,000 | 134,600 | 1,018,800 | 1,153,400 | 4,000 | 5,700 | 118,500 | 1,313,450 | |
| 1991 | 53,411 | 3,000 | 134,600 | 1,018,800 | 1,153,400 | 4,000 | 5,700 | 118,500 | 1,338,011 | |
| 1992 | 57,700 | 3,000 | 134,600 | 1,018,800 | 1,153,400 | 4,000 | 5,700 | 118,500 | 1,342,300 | |
| 1993 | 57,700 | 3,000 | 134,600 | 1,018,800 | 1,153,400 | 4,000 | 5,700 | 118,500 | 1,342,300 | |
| 1994 | 57,700 | 3,000 | 134,600 | 1,018,800 | 1,153,400 | 4,000 | 5,700 | 118,500 | 1,342,300 | |
| 1995 | 57,700 | 3,000 | 134,600 | 1,018,800 | 1,153,400 | 4,000 | 5,700 | 118,500 | 1,342,300 | |
| 1996 | 53,370 | 3,000 | 134,600 | 982,460 | 1,117,060 | 4,000 | 5,700 | 118,500 | 1,301,630 | |
| 1997 | 53,370 | 3,000 | 134,600 | 978,130 | 1,112,730 | 4,000 | 5,700 | 118,500 | 1,297,300 | |
| 1998 | 53,370 | 3,000 | 134,600 | 953,130 | 1,087,730 | 4,000 | 5,700 | 118,500 | 1,272,300 | |
| 1999 | 53,370 | 3,000 | 134,600 | 953,130 | 1,087,730 | 4,000 | 5,700 | 118,500 | 1,272,300 | |
| 2000 | 53,370 | 3,000 | 134,600 | 886,130 | 1,020,730 | 4,000 | 5,700 | 118,500 | 1,205,300 | |
| 2001 | 53,370 | 3,000 | 134,600 | 866,349 | 1,000,949 | 4,000 | 5,700 | 118,500 | 1,185,519 | |
| 2002 | 57,343 | 3,000 | 134,600 | 866,349 | 1,000,949 | 4,000 | 5,700 | 111,527 | 1,182,519 | |
| 2003 | 57,343 | 3,000 | 134,600 | 866,349 | 1,000,949 | 4,000 | 5,700 | 111,127 | 1,182,119 | |
| 2004 | 57,343 | 3,000 | 134,600 | 864,130 | 998,730 | 9,000 | 5,700 | 96,227 | 1,170,000 | |
| 2005 | 57,343 | 3,000 | 134,600 | 864,130 | 998,730 | 9,000 | 5,700 | 96,227 | 1,170,000 | |
| 2006 | 57,343 | 3,000 | 134,600 | 864,130 | 998,730 | 9,305 | 5,700 | 95,922 | 1,170,000 | |
| 2007 | 57,343 | 3,000 | 134,600 | 864,130 | 998,730 | 9,305 | 5,700 | 95,922 | 1,170,000 | |
| 2008 | 57,343 | 3,000 | 134,600 | 864,130 | 998,730 | 9,305 | 5,700 | 95,922 | 1,170,000 | |
| 2009 | 57,343 | 3,000 | 134,600 | 864,130 | 998,730 | 9,305 | 5,700 | 95,922 | 1,170,000 | |
| 2010 | 50,343 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 88,922 | 1,140,000 | |
| 2011 | 50,343 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 88,922 | 1,140,000 | |
| 2012 | 50,343 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 88,922 | 1,140,000 | |
| 2013 | 50,343 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 88,922 | 1,140,000 | |
| 2014 | 48,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,136,556 | |
| 2015 | 45,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,133,556 | |
| 2016 | 45,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,133,556 | |
| 2017 | 45,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,133,556 | |
| 2018 | 45,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,133,556 | |
| 2019 | 45,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,133,556 | |
| 2020 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2021 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2022 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2023 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2024 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2025 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2026 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2027 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2028 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2029 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2030 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2031 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2032 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2033 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2034 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| 2035 | 41,350 | 3,000 | 134,600 | 848,130 | 982,730 | 9,305 | 5,700 | 87,471 | 1,129,556 | |
| TOTAL | 3,008,632 | 199,000 | 7,693,900 | 51,855,303 | 59,549,203 | 403,050 | 352,822 | 5,959,901 | 69,472,608 | |

TABLE B-4 Maximum Contractual Table A Amounts (acre-feet)

Sheet 3 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|------------------|----------------|------------------|----------------|------------------|------------------|------------------|------------------|----------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 20,000 | 5,200 | 526 | 8,000 | 170 | 8,400 | 1,620 | 1,677 | 122 | 0 |
| 1973 | 25,000 | 5,800 | 870 | 9,000 | 290 | 10,700 | 2,940 | 48,000 | 11,500 | 0 |
| 1974 | 30,000 | 6,400 | 1,160 | 10,000 | 400 | 13,100 | 4,260 | 50,000 | 12,300 | 0 |
| 1975 | 35,000 | 7,000 | 1,450 | 11,000 | 520 | 15,400 | 5,580 | 52,500 | 13,100 | 0 |
| 1976 | 44,000 | 7,600 | 1,740 | 12,000 | 640 | 17,800 | 6,900 | 55,000 | 14,000 | 0 |
| 1977 | 50,000 | 8,421 | 2,030 | 13,000 | 730 | 20,200 | 8,220 | 57,500 | 14,800 | 0 |
| 1978 | 57,000 | 9,242 | 2,320 | 14,000 | 920 | 0 | 9,340 | 60,000 | 15,700 | 0 |
| 1979 | 63,000 | 10,063 | 2,610 | 15,000 | 1,040 | 24,900 | 10,260 | 62,500 | 16,600 | 0 |
| 1980 | 69,200 | 10,884 | 2,900 | 17,000 | 1,150 | 27,200 | 11,180 | 65,500 | 17,400 | 6,800 |
| 1981 | 75,000 | 12,105 | 3,190 | 19,000 | 1,270 | 23,100 | 11,700 | 68,500 | 18,300 | 7,800 |
| 1982 | 81,300 | 13,326 | 3,480 | 21,000 | 1,380 | 22,843 | 12,320 | 71,500 | 19,100 | 8,800 |
| 1983 | 87,700 | 14,547 | 3,770 | 23,000 | 1,500 | 34,300 | 12,940 | 74,500 | 19,900 | 9,800 |
| 1984 | 35,000 | 15,768 | 4,060 | 25,000 | 1,610 | 36,700 | 13,560 | 78,000 | 20,700 | 10,800 |
| 1985 | 40,000 | 16,989 | 4,350 | 27,000 | 1,730 | 39,000 | 14,180 | 81,500 | 21,800 | 11,800 |
| 1986 | 42,000 | 18,210 | 4,640 | 29,000 | 1,840 | 41,400 | 14,800 | 85,000 | 23,200 | 12,900 |
| 1987 | 44,000 | 19,431 | 4,930 | 31,500 | 1,960 | 43,700 | 15,420 | 89,000 | 24,600 | 14,000 |
| 1988 | 46,000 | 20,652 | 5,220 | 34,000 | 2,070 | 46,000 | 16,040 | 93,000 | 26,000 | 15,100 |
| 1989 | 125,700 | 21,873 | 5,510 | 36,500 | 2,190 | 48,500 | 16,660 | 97,000 | 27,400 | 16,200 |
| 1990 | 132,100 | 23,100 | 5,800 | 38,100 | 2,300 | 50,800 | 17,300 | 101,500 | 28,800 | 17,300 |
| 1991 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 50,800 | 17,300 | 102,600 | 28,800 | 17,300 |
| 1992 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 50,800 | 17,300 | 102,600 | 28,800 | 17,300 |
| 1993 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 50,800 | 17,300 | 102,600 | 28,800 | 17,300 |
| 1994 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 50,800 | 17,300 | 102,600 | 28,800 | 17,300 |
| 1995 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 50,800 | 17,300 | 102,600 | 28,800 | 17,300 |
| 1996 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 50,800 | 17,300 | 102,600 | 28,800 | 0 |
| 1997 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 50,800 | 17,300 | 102,600 | 28,800 | 0 |
| 1998 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 75,800 | 17,300 | 102,600 | 28,800 | 0 |
| 1999 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 75,800 | 17,300 | 102,600 | 28,800 | 2,000 |
| 2000 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 75,800 | 21,300 | 102,600 | 28,800 | 3,000 |
| 2001 | 138,400 | 23,100 | 5,800 | 38,100 | 2,300 | 75,800 | 21,300 | 102,600 | 28,800 | 4,000 |
| 2002 | 141,400 | 23,100 | 5,800 | 38,100 | 2,300 | 75,800 | 21,300 | 102,600 | 28,800 | 4,000 |
| 2003 | 141,400 | 23,100 | 5,800 | 38,100 | 2,300 | 75,800 | 21,300 | 102,600 | 28,800 | 5,000 |
| 2004 | 141,400 | 33,000 | 5,800 | 38,100 | 2,300 | 75,800 | 21,300 | 102,600 | 28,800 | 6,000 |
| 2005 | 141,400 | 121,100 | 5,800 | 50,000 | 2,300 | 75,800 | 21,300 | 102,600 | 28,800 | 6,500 |
| 2006 | 141,400 | 121,100 | 5,800 | 50,000 | 2,300 | 75,800 | 21,300 | 102,600 | 28,800 | 7,000 |
| 2007 | 141,400 | 121,100 | 5,800 | 50,000 | 2,300 | 75,800 | 21,300 | 102,600 | 28,800 | 8,650 |
| 2008 | 141,400 | 121,100 | 5,800 | 50,000 | 2,300 | 75,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2009 | 141,400 | 121,100 | 5,800 | 50,000 | 2,300 | 75,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2010 | 141,400 | 138,350 | 5,800 | 55,750 | 2,300 | 82,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2011 | 141,400 | 138,350 | 5,800 | 55,750 | 2,300 | 82,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2012 | 141,400 | 138,350 | 5,800 | 55,750 | 2,300 | 82,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2013 | 141,400 | 138,350 | 5,800 | 55,750 | 2,300 | 82,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2014 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 82,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2015 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 85,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2016 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 85,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2017 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 85,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2018 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 85,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2019 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 85,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2020 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2021 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2022 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2023 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2024 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2025 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2026 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2027 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2028 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2029 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2030 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2031 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2032 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2033 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2034 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| 2035 | 144,844 | 138,350 | 5,800 | 55,750 | 2,300 | 89,800 | 21,300 | 102,600 | 28,800 | 17,300 |
| TOTAL | 7,507,768 | 4,782,511 | 321,556 | 2,626,000 | 127,210 | 4,069,043 | 1,127,720 | 5,909,177 | 1,641,322 | 748,350 |

TABLE B-4 Maximum Contractual Table A Amounts (acre-feet)

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | South Bay Area Future Contractor | Grand Total |
|---------------|--------------------------------------|--------------------|----------------|--------------------|--------------------|----------------|----------------|------------------|----------------------------------|--------------------|
| | Santa Clarita ^c | Metropolitan | Ventura | Total | Yuba City | Butte | Plumas | Total | | |
| [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,538 |
| 1968 | 3,700 | 0 | 0 | 3,700 | 0 | 300 | 250 | 550 | 0 | 191,500 |
| 1969 | 5,000 | 0 | 0 | 5,000 | 0 | 350 | 270 | 620 | 0 | 267,395 |
| 1970 | 5,700 | 0 | 0 | 5,700 | 0 | 400 | 300 | 700 | 0 | 322,600 |
| 1971 | 6,700 | 0 | 0 | 6,700 | 0 | 450 | 440 | 890 | 0 | 375,590 |
| 1972 | 8,936 | 154,772 | 0 | 209,423 | 0 | 500 | 470 | 970 | 0 | 741,759 |
| 1973 | 12,400 | 354,600 | 0 | 481,100 | 0 | 600 | 500 | 1,100 | 0 | 986,252 |
| 1974 | 15,400 | 454,900 | 0 | 597,920 | 0 | 700 | 530 | 1,230 | 0 | 1,182,200 |
| 1975 | 18,200 | 555,200 | 0 | 714,950 | 0 | 1,050 | 560 | 1,610 | 0 | 1,386,869 |
| 1976 | 21,200 | 655,600 | 0 | 836,480 | 0 | 1,400 | 590 | 1,990 | 0 | 1,508,387 |
| 1977 | 24,100 | 755,900 | 0 | 954,901 | 0 | 1,800 | 620 | 2,420 | 0 | 1,667,321 |
| 1978 | 24,762 | 856,300 | 0 | 1,049,584 | 0 | 1,200 | 650 | 1,850 | 0 | 1,818,034 |
| 1979 | 28,000 | 956,600 | 0 | 1,190,573 | 0 | 1,450 | 680 | 2,130 | 0 | 2,028,088 |
| 1980 | 30,400 | 1,057,000 | 1,000 | 1,317,614 | 0 | 1,100 | 710 | 1,810 | 0 | 2,214,770 |
| 1981 | 32,800 | 1,157,300 | 2,000 | 1,432,065 | 0 | 1,200 | 740 | 1,940 | 0 | 2,392,468 |
| 1982 | 34,800 | 1,257,600 | 3,000 | 1,550,449 | 0 | 1,200 | 770 | 1,970 | 0 | 2,574,545 |
| 1983 | 37,300 | 1,358,000 | 4,000 | 1,681,257 | 0 | 1,200 | 800 | 2,000 | 0 | 2,701,164 |
| 1984 | 39,600 | 1,458,300 | 5,000 | 1,744,098 | 1,600 | 1,200 | 830 | 3,630 | 0 | 2,884,337 |
| 1985 | 41,800 | 1,558,700 | 6,000 | 1,864,849 | 1,700 | 1,200 | 860 | 3,760 | 0 | 3,055,846 |
| 1986 | 43,600 | 1,659,300 | 8,000 | 1,983,890 | 2,100 | 1,200 | 890 | 4,190 | 0 | 3,257,736 |
| 1987 | 45,600 | 1,759,800 | 10,000 | 2,103,941 | 2,500 | 1,200 | 920 | 4,620 | 0 | 3,484,115 |
| 1988 | 48,000 | 1,860,400 | 13,000 | 2,225,482 | 2,900 | 1,200 | 960 | 5,060 | 0 | 3,688,335 |
| 1989 | 50,100 | 1,961,000 | 16,000 | 2,424,633 | 3,300 | 1,200 | 1,000 | 5,500 | 0 | 3,958,190 |
| 1990 | 52,000 | 2,011,500 | 20,000 | 2,500,600 | 3,800 | 1,200 | 1,040 | 6,040 | 0 | 4,079,666 |
| 1991 | 54,200 | 2,011,500 | 20,000 | 2,510,200 | 9,600 | 1,200 | 1,080 | 11,880 | 0 | 4,126,567 |
| 1992 | 54,200 | 2,011,500 | 20,000 | 2,510,200 | 9,600 | 1,200 | 1,120 | 11,920 | 0 | 4,138,816 |
| 1993 | 54,200 | 2,011,500 | 20,000 | 2,510,200 | 9,600 | 1,200 | 1,160 | 11,960 | 0 | 4,146,966 |
| 1994 | 54,200 | 2,011,500 | 20,000 | 2,510,200 | 9,600 | 1,200 | 1,200 | 12,000 | 0 | 4,154,201 |
| 1995 | 54,200 | 2,011,500 | 20,000 | 2,510,200 | 9,600 | 1,200 | 1,250 | 12,050 | 0 | 4,163,066 |
| 1996 | 54,200 | 2,011,500 | 20,000 | 2,492,900 | 9,600 | 1,200 | 1,300 | 12,100 | 0 | 4,111,341 |
| 1997 | 54,200 | 2,011,500 | 20,000 | 2,492,900 | 9,600 | 1,200 | 1,350 | 12,150 | 0 | 4,084,866 |
| 1998 | 54,200 | 2,011,500 | 20,000 | 2,517,900 | 9,600 | 1,200 | 1,400 | 12,200 | 0 | 4,086,021 |
| 1999 | 54,200 | 2,011,500 | 20,000 | 2,519,900 | 9,600 | 2,890 | 1,450 | 13,940 | 0 | 4,119,646 |
| 2000 | 95,200 | 2,011,500 | 20,000 | 2,565,900 | 9,600 | 2,890 | 1,510 | 14,000 | 0 | 4,121,631 |
| 2001 | 95,200 | 2,011,500 | 20,000 | 2,566,900 | 9,600 | 3,500 | 1,570 | 14,670 | 0 | 4,124,136 |
| 2002 | 95,200 | 2,011,500 | 20,000 | 2,569,900 | 9,600 | 3,500 | 1,630 | 14,730 | 0 | 4,125,031 |
| 2003 | 95,200 | 2,011,500 | 20,000 | 2,570,900 | 9,600 | 3,500 | 1,690 | 14,790 | 0 | 4,126,926 |
| 2004 | 95,200 | 2,011,500 | 20,000 | 2,581,800 | 9,600 | 3,500 | 0 | 13,100 | 0 | 4,127,061 |
| 2005 | 95,200 | 1,911,500 | 20,000 | 2,582,300 | 9,600 | 1,200 | 0 | 10,800 | 0 | 4,125,686 |
| 2006 | 95,200 | 1,911,500 | 20,000 | 2,582,800 | 9,600 | 1,200 | 324 | 11,124 | 0 | 4,126,885 |
| 2007 | 95,200 | 1,911,500 | 20,000 | 2,584,450 | 9,600 | 1,200 | 720 | 11,520 | 0 | 4,129,306 |
| 2008 | 95,200 | 1,911,500 | 20,000 | 2,593,100 | 9,600 | 27,500 | 2,020 | 39,120 | 0 | 4,165,931 |
| 2009 | 95,200 | 1,911,500 | 20,000 | 2,593,100 | 9,600 | 27,500 | 2,090 | 39,190 | 0 | 4,166,376 |
| 2010 | 95,200 | 1,911,500 | 20,000 | 2,623,100 | 9,600 | 1,731 | 2,160 | 13,491 | 0 | 4,146,227 |
| 2011 | 95,200 | 1,911,500 | 20,000 | 2,623,100 | 9,600 | 2,548 | 2,240 | 14,388 | 0 | 4,147,174 |
| 2012 | 95,200 | 1,911,500 | 20,000 | 2,623,100 | 9,600 | 27,500 | 2,320 | 39,420 | 0 | 4,172,256 |
| 2013 | 95,200 | 1,911,500 | 20,000 | 2,623,100 | 9,600 | 27,500 | 2,410 | 39,510 | 0 | 4,172,396 |
| 2014 | 95,200 | 1,911,500 | 20,000 | 2,626,544 | 9,600 | 27,500 | 2,500 | 39,600 | 0 | 4,172,536 |
| 2015 | 95,200 | 1,911,500 | 20,000 | 2,629,544 | 9,600 | 27,500 | 2,600 | 39,700 | 0 | 4,172,686 |
| 2016 | 95,200 | 1,911,500 | 20,000 | 2,629,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2017 | 95,200 | 1,911,500 | 20,000 | 2,629,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2018 | 95,200 | 1,911,500 | 20,000 | 2,629,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2019 | 95,200 | 1,911,500 | 20,000 | 2,629,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2020 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2021 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2022 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2023 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2024 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2025 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2026 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2027 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2028 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2029 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2030 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2031 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2032 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2033 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2034 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| 2035 | 95,200 | 1,911,500 | 20,000 | 2,633,544 | 9,600 | 27,500 | 2,700 | 39,800 | 0 | 4,172,786 |
| TOTAL | 4,545,098 | 109,260,272 | 988,000 | 143,654,027 | 449,900 | 775,559 | 106,474 | 1,331,933 | 0 | 233,688,159 |

^c Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 1 of 21

| Calendar Year | FEATHER RIVER AREA | | | NORTH BAY AQUEDUCT | | | | | | | | | |
|---------------|--------------------|-------------------------|----------------|--------------------|-----------|----------------|--------------|----------------|-------------------|--------------|------------------|--|--|
| | Butte | Grizzly Valley Pipeline | Plumas | Reach 1 | | Reach 3A | | Reach 3A-T | | Reach 3B | | | |
| | | | | Solano | Napa | Solano | Napa | Solano | Napa ^a | Solano | Total | | |
| 1962 | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] | | |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,214 | 0 | 1,214 | | |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,687 | 0 | 2,687 | | |
| 1970 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 3,618 | 0 | 3,618 | | |
| 1971 | 192 | 64 | 0 | 0 | 0 | 0 | 0 | 0 | 2,521 | 0 | 2,521 | | |
| 1972 | 186 | 505 | 0 | 0 | 0 | 0 | 0 | 0 | 3,647 | 0 | 3,647 | | |
| 1973 | 53 | 679 | 0 | 0 | 0 | 0 | 0 | 0 | 3,792 | 0 | 3,792 | | |
| 1974 | 127 | 648 | 0 | 0 | 0 | 0 | 0 | 0 | 4,870 | 0 | 4,870 | | |
| 1975 | 253 | 405 | 0 | 0 | 0 | 0 | 0 | 0 | 6,840 | 0 | 6,840 | | |
| 1976 | 527 | 382 | 0 | 0 | 0 | 0 | 0 | 0 | 7,122 | 0 | 7,122 | | |
| 1977 | 706 | 303 | 0 | 0 | 0 | 0 | 0 | 0 | 8,226 | 0 | 8,226 | | |
| 1978 | 579 | 278 | 0 | 0 | 0 | 0 | 0 | 0 | 6,034 | 0 | 6,034 | | |
| 1979 | 302 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 6,561 | 0 | 6,561 | | |
| 1980 | 267 | 295 | 0 | 0 | 0 | 0 | 0 | 0 | 6,707 | 0 | 6,707 | | |
| 1981 | 221 | 355 | 0 | 0 | 0 | 0 | 0 | 0 | 9,001 | 0 | 9,001 | | |
| 1982 | 334 | 305 | 0 | 0 | 0 | 0 | 0 | 0 | 1,213 | 0 | 1,213 | | |
| 1983 | 325 | 262 | 0 | 0 | 0 | 0 | 0 | 0 | 2,287 | 0 | 2,287 | | |
| 1984 | 177 | 272 | 108 | 0 | 0 | 0 | 0 | 0 | 2,923 | 0 | 2,923 | | |
| 1985 | 308 | 254 | 62 | 0 | 0 | 0 | 0 | 0 | 4,039 | 0 | 4,039 | | |
| 1986 | 313 | 317 | 328 | 1,400 | 0 | 0 | 0 | 0 | 3,519 | 0 | 4,919 | | |
| 1987 | 459 | 452 | 88 | 1,550 | 0 | 0 | 0 | 0 | 7,693 | 0 | 9,243 | | |
| 1988 | 385 | 523 | 303 | 1 | 0 | 9,725 | 0 | 0 | 5,392 | 0 | 15,118 | | |
| 1989 | 300 | 486 | 403 | 10 | 0 | 17,246 | 0 | 0 | 6,195 | 0 | 23,451 | | |
| 1990 | 380 | 548 | 494 | 3,275 | 0 | 15,856 | 0 | 0 | 6,940 | 0 | 26,071 | | |
| 1991 | 328 | 420 | 265 | 3,117 | 0 | 3,855 | 0 | 0 | 1,380 | 0 | 8,352 | | |
| 1992 | 117 | 485 | 642 | 5,553 | 0 | 9,220 | 0 | 0 | 4,001 | 0 | 18,774 | | |
| 1993 | 256 | 444 | 746 | 14,709 | 0 | 14,471 | 0 | 0 | 5,286 | 0 | 34,466 | | |
| 1994 | 329 | 492 | 1,035 | 10,343 | 0 | 14,913 | 0 | 0 | 6,792 | 0 | 32,048 | | |
| 1995 | 203 | 308 | 910 | 5,452 | 0 | 15,893 | 0 | 0 | 5,182 | 0 | 26,527 | | |
| 1996 | 257 | 360 | 820 | 12,930 | 0 | 17,069 | 0 | 0 | 4,893 | 0 | 34,892 | | |
| 1997 | 185 | 231 | 1,005 | 16,029 | 0 | 17,501 | 0 | 0 | 4,341 | 0 | 37,871 | | |
| 1998 | 527 | 0 | 1,054 | 11,562 | 0 | 18,204 | 0 | 0 | 5,359 | 0 | 35,125 | | |
| 1999 | 286 | 0 | 1,096 | 15,191 | 0 | 19,562 | 0 | 0 | 5,304 | 0 | 40,057 | | |
| 2000 | 586 | 0 | 901 | 15,490 | 0 | 11,290 | 0 | 10,235 | 4,958 | 0 | 41,973 | | |
| 2001 | 513 | 0 | 1,065 | 14,849 | 0 | 11,377 | 0 | 8,360 | 9,345 | 0 | 43,931 | | |
| 2002 | 419 | 0 | 1,181 | 18,841 | 0 | 11,130 | 0 | 8,589 | 6,875 | 0 | 45,435 | | |
| 2003 | 551 | 0 | 1,324 | 17,260 | 0 | 9,682 | 9 | 7,009 | 7,637 | 0 | 41,597 | | |
| 2004 | 1,440 | 0 | 1,434 | 20,951 | 0 | 10,691 | 135 | 10,860 | 7,999 | 500 | 51,136 | | |
| 2005 | 527 | 0 | 1,894 | 18,290 | 0 | 10,585 | 160 | 8,444 | 7,509 | 500 | 45,488 | | |
| 2006 | 468 | 0 | 5,342 | 16,573 | 0 | 10,865 | 208 | 7,578 | 7,581 | 500 | 43,305 | | |
| 2007 | 956 | 0 | 2,327 | 19,187 | 0 | 12,301 | 180 | 15,312 | 10,777 | 500 | 58,257 | | |
| 2008 | 451 | 243 | 1,923 | 21,436 | 15 | 11,410 | 37 | 7,974 | 13,240 | 500 | 54,612 | | |
| 2009 | 581 | 200 | 2,114 | 15,004 | 0 | 8,651 | 27 | 6,795 | 10,877 | 500 | 41,854 | | |
| 2010 | 807 | 243 | 2,331 | 17,598 | 0 | 8,231 | 70 | 4,487 | 12,347 | 500 | 43,233 | | |
| 2011 | 1,092 | 98 | 2,297 | 15,202 | 0 | 7,761 | 39 | 5,032 | 11,275 | 0 | 39,309 | | |
| 2012 | 1,374 | 79 | 2,695 | 16,508 | 0 | 8,298 | 47 | 4,541 | 9,860 | 0 | 39,254 | | |
| 2013 | 908 | 366 | 4,850 | 16,525 | 0 | 10,082 | 60 | 9,262 | 12,478 | 0 | 48,407 | | |
| 2014 | 1,617 | 251 | 4,237 | 7,354 | 0 | 6,856 | 41 | 5,469 | 14,123 | 0 | 33,843 | | |
| 2015 | 2,763 | 285 | 3,004 | 8,581 | 0 | 6,538 | 66 | 8,717 | 11,133 | 0 | 35,035 | | |
| 2016 | 2,518 | 387 | 1,229 | 10,802 | 1 | 6,464 | 45 | 6,339 | 8,947 | 0 | 32,598 | | |
| 2017 | 2,320 | 363 | 1,746 | 13,764 | 0 | 7,484 | 24 | 7,017 | 8,201 | 0 | 36,490 | | |
| 2018 | 3,029 | 508 | 1,715 | 15,487 | 0 | 8,493 | 22 | 11,092 | 11,660 | 0 | 46,754 | | |
| 2019 | 6,003 | 817 | 3,159 | 20,178 | 5 | 8,213 | 0 | 6,289 | 21,338 | 0 | 56,023 | | |
| 2020 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2021 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2022 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2023 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2024 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2025 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2026 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2027 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2028 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2029 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2030 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2031 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2032 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2033 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2034 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| 2035 | 270 | 730 | 5,760 | 28,654 | 0 | 0 | 0 | 0 | 17,415 | 0 | 46,069 | | |
| TOTAL | 42,125 | 25,992 | 148,287 | 879,466 | 21 | 359,917 | 1,170 | 159,401 | 642,379 | 3,500 | 2,045,854 | | |

^a For the period 1968 through 1987, deliveries were non-project water pumped through an interim facility.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 2 of 21

| Calendar Year | SOUTH BAY AQUEDUCT ^b | | | | | | | | | | |
|---------------|---------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|------------------|
| | Reach 1 | | Reach 2 | Reach 4 | Reach 5 | | Reach 6 | Reach 7 | Reach 8 | Reach 9 | |
| | Alameda-Zone 7 | Alameda County | Alameda-Zone 7 | Alameda-Zone 7 | Alameda-Zone 7 | Alameda County | Alameda-Zone 7 | Alameda County | Alameda County | Santa Clara | |
| 1962 | [12] | [13] | [14] | [15] | [16] | [17] | [18] | [19] | [20] | [21] | [22] |
| 1962 | 141 | 8,412 | 353 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,906 |
| 1963 | 814 | 10,914 | 917 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,645 |
| 1964 | 248 | 19,238 | 1,425 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20,911 |
| 1965 | 637 | 15,280 | 1,830 | 138 | 0 | 0 | 0 | 1,127 | 0 | 15,014 | 34,026 |
| 1966 | 2,475 | 0 | 2,537 | 499 | 0 | 0 | 0 | 14,864 | 0 | 34,538 | 54,913 |
| 1967 | 1,527 | 0 | 2,391 | 862 | 0 | 0 | 0 | 12,882 | 0 | 39,101 | 56,763 |
| 1968 | 1,608 | 0 | 3,799 | 721 | 5 | 0 | 0 | 24,817 | 0 | 70,105 | 101,055 |
| 1969 | 1,165 | 0 | 3,459 | 1,851 | 160 | 0 | 0 | 813 | 0 | 62,264 | 69,712 |
| 1970 | 1,345 | 0 | 4,558 | 3,182 | 164 | 0 | 0 | 0 | 0 | 80,311 | 89,560 |
| 1971 | 546 | 0 | 1,908 | 2,403 | 160 | 0 | 0 | 5,961 | 0 | 87,606 | 98,584 |
| 1972 | 1,066 | 0 | 4,605 | 2,041 | 2,777 | 1,489 | 0 | 26,182 | 0 | 100,266 | 138,426 |
| 1973 | 430 | 0 | 1,123 | 1,193 | 229 | 0 | 0 | 2,521 | 0 | 88,582 | 94,078 |
| 1974 | 177 | 0 | 0 | 975 | 162 | 0 | 0 | 0 | 4 | 88,000 | 89,318 |
| 1975 | 137 | 0 | 1,783 | 1,864 | 120 | 0 | 714 | 393 | 593 | 88,000 | 93,604 |
| 1976 | 265 | 0 | 7,204 | 3,384 | 817 | 0 | 5,461 | 13,774 | 7,526 | 88,000 | 126,431 |
| 1977 | 210 | 0 | 4,491 | 2,213 | 524 | 0 | 5,206 | 11,284 | 7,556 | 76,220 | 107,704 |
| 1978 | 422 | 0 | 2,426 | 3,754 | 2,034 | 0 | 2,348 | 854 | 5,009 | 95,727 | 112,574 |
| 1979 | 197 | 0 | 4,283 | 5,567 | 3,937 | 0 | 5,341 | 3,430 | 7,444 | 91,991 | 122,190 |
| 1980 | 77 | 0 | 3,883 | 6,686 | 0 | 1,508 | 6,144 | 2,824 | 6,702 | 88,000 | 115,824 |
| 1981 | 1,250 | 0 | 4,648 | 5,273 | 1,157 | 5,752 | 7,262 | 7,595 | 8,570 | 88,000 | 129,507 |
| 1982 | 473 | 0 | 3,043 | 4,406 | 630 | 0 | 4,571 | 1,776 | 4,540 | 88,000 | 107,439 |
| 1983 | 179 | 0 | 2,712 | 1,714 | 50 | 0 | 111 | 0 | 3,157 | 86,733 | 94,656 |
| 1984 | 165 | 0 | 4,219 | 2,219 | 55 | 0 | 126 | 0 | 3,338 | 88,000 | 98,122 |
| 1985 | 213 | 0 | 5,199 | 2,060 | 63 | 0 | 7,537 | 11,203 | 7,813 | 88,000 | 122,088 |
| 1986 | 200 | 0 | 6,052 | 2,062 | 212 | 0 | 2,083 | 5,311 | 7,068 | 88,000 | 110,988 |
| 1987 | 218 | 0 | 7,538 | 2,372 | 285 | 0 | 12,993 | 15,488 | 9,902 | 88,000 | 136,796 |
| 1988 | 222 | 0 | 8,302 | 4,681 | 189 | 0 | 12,436 | 24,259 | 9,205 | 87,961 | 147,255 |
| 1989 | 222 | 0 | 8,051 | 6,562 | 418 | 0 | 10,974 | 17,340 | 8,702 | 90,000 | 142,269 |
| 1990 | 256 | 0 | 8,160 | 8,347 | 593 | 0 | 15,678 | 22,149 | 9,554 | 91,800 | 156,537 |
| 1991 | 162 | 0 | 3,676 | 3,269 | 359 | 0 | 1,945 | 9,155 | 3,493 | 28,200 | 50,259 |
| 1992 | 217 | 0 | 5,177 | 2,188 | 154 | 0 | 6,933 | 12,621 | 6,532 | 42,839 | 76,661 |
| 1993 | 190 | 0 | 5,843 | 8,430 | 5,964 | 1,650 | 13,208 | 1,792 | 6,829 | 62,065 | 105,971 |
| 1994 | 132 | 0 | 4,482 | 5,427 | 822 | 0 | 9,679 | 3,379 | 19,532 | 57,115 | 100,568 |
| 1995 | 278 | 0 | 6,236 | 7,195 | 955 | 0 | 15,427 | 21 | 17,772 | 28,756 | 76,640 |
| 1996 | 277 | 0 | 6,151 | 5,119 | 388 | 0 | 6,968 | 1,871 | 11,591 | 44,850 | 77,215 |
| 1997 | 138 | 0 | 6,647 | 6,501 | 1,582 | 1,323 | 12,654 | 1,876 | 10,864 | 60,601 | 102,186 |
| 1998 | 106 | 0 | 3,748 | 2,493 | 1,277 | 0 | 8,347 | 3,817 | 11,478 | 39,610 | 70,876 |
| 1999 | 148 | 0 | 5,048 | 8,227 | 1,444 | 0 | 13,133 | 5,326 | 16,226 | 52,945 | 102,497 |
| 2000 | 110 | 0 | 7,464 | 9,761 | 946 | 0 | 16,396 | 4,498 | 18,100 | 78,258 | 135,533 |
| 2001 | 105 | 0 | 7,822 | 4,879 | 3,010 | 0 | 13,593 | 0 | 18,004 | 47,922 | 95,335 |
| 2002 | 93 | 0 | 7,758 | 11,619 | 2,446 | 0 | 17,058 | 5,112 | 20,616 | 58,875 | 123,577 |
| 2003 | 108 | 0 | 7,916 | 11,348 | 2,887 | 0 | 16,684 | 5,037 | 12,753 | 75,981 | 132,714 |
| 2004 | 72 | 0 | 11,754 | 9,737 | 3,763 | 0 | 21,260 | 4,968 | 14,916 | 59,458 | 125,928 |
| 2005 | 1,430 | 0 | 11,520 | 10,100 | 1,826 | 0 | 16,597 | 4,139 | 10,160 | 52,364 | 108,136 |
| 2006 | 830 | 0 | 11,546 | 4,097 | 2,123 | 0 | 19,870 | 2,708 | 12,924 | 64,174 | 118,272 |
| 2007 | 179 | 0 | 10,066 | 2,563 | 3,107 | 0 | 23,205 | 8,255 | 15,107 | 71,690 | 134,172 |
| 2008 | 238 | 0 | 11,424 | 2,206 | 1,899 | 0 | 25,363 | 4,421 | 18,481 | 52,530 | 116,562 |
| 2009 | 211 | 0 | 7,054 | 5,437 | 1,987 | 0 | 16,398 | 2,551 | 16,945 | 66,364 | 116,947 |
| 2010 | 160 | 0 | 7,788 | 7,528 | 1,824 | 0 | 17,043 | 330 | 15,241 | 45,888 | 95,802 |
| 2011 | 1,541 | 0 | 6,282 | 6,887 | 2,173 | 0 | 20,098 | 7 | 15,203 | 60,761 | 112,952 |
| 2012 | 262 | 0 | 7,598 | 9,987 | 2,972 | 0 | 14,112 | 0 | 13,331 | 63,794 | 112,056 |
| 2013 | 237 | 0 | 11,253 | 9,998 | 3,171 | 0 | 20,197 | 31 | 23,609 | 78,623 | 147,119 |
| 2014 | 206 | 0 | 7,517 | 4,321 | 975 | 0 | 15,469 | 8,989 | 13,669 | 39,970 | 91,116 |
| 2015 | 182 | 0 | 6,136 | 3,640 | 4,594 | 0 | 15,520 | 6,389 | 14,838 | 65,773 | 117,072 |
| 2016 | 53 | 0 | 6,677 | 10,488 | 3,480 | 0 | 20,786 | 21 | 9,064 | 68,652 | 119,221 |
| 2017 | 85 | 0 | 4,188 | 9,110 | 3,225 | 0 | 9,850 | 0 | 9,734 | 44,995 | 81,187 |
| 2018 | 84 | 0 | 7,318 | 4,243 | 4,452 | 0 | 23,426 | 209 | 17,952 | 77,136 | 134,820 |
| 2019 | 284 | 0 | 10,439 | 9,517 | 3,133 | 0 | 13,004 | 318 | 8,800 | 47,354 | 92,849 |
| 2020 | 0 | 0 | 7,500 | 7,150 | 2,400 | 0 | 26,321 | 4,745 | 14,539 | 60,000 | 122,655 |
| 2021 | 0 | 0 | 7,660 | 7,150 | 2,400 | 0 | 26,161 | 5,510 | 15,190 | 60,000 | 124,071 |
| 2022 | 0 | 0 | 7,810 | 7,150 | 2,400 | 0 | 26,011 | 5,781 | 15,231 | 60,000 | 124,383 |
| 2023 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2024 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2025 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2026 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2027 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2028 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2029 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2030 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2031 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2032 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2033 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2034 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| 2035 | 0 | 0 | 7,980 | 7,150 | 2,400 | 0 | 25,841 | 6,021 | 15,207 | 60,000 | 124,599 |
| TOTAL | 25,003 | 53,844 | 454,137 | 387,744 | 120,079 | 11,722 | 957,634 | 418,997 | 753,098 | 4,675,762 | 7,858,020 |

^b For the period June 1962 through November 1967, deliveries were supplied by non-project water.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 3 of 21

| Calendar Year | CALIFORNIA AQUEDUCT | | | | | | | | | | | |
|---------------|----------------------------|--------------------|------------------------|-----------------------|----------------|------------|-------------------|--------------|--------------------|-------------------|--------------|-----------------|
| | NORTH SAN JOAQUIN DIVISION | | | | | | SAN LUIS DIVISION | | | | | |
| | Reach 1 | | Reach 2A | | | | Reach 3 | | Reach 3A | | | |
| | Kern (Agricultural) | Alameda- Zone 7 | Kern (Agricultural) | Oak Flat ^c | Santa Clara | Tulare | Dudley Ridge | Metropolitan | Alameda- Zone 7 | Alameda County | AVEK | Dudley Ridge |
| [23] | [24] | [25] | [26] | [27] | [28] | [29] | [30] | [31] | [32] | [33] | [34] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1968 | 0 | 0 | 0 | 3,084 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1969 | 0 | 0 | 0 | 3,016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1970 | 0 | 0 | 0 | 5,911 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1971 | 0 | 0 | 0 | 7,212 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1972 | 0 | 0 | 0 | 8,166 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1973 | 0 | 0 | 0 | 3,214 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1974 | 0 | 0 | 0 | 3,471 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1975 | 0 | 0 | 0 | 3,576 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1976 | 0 | 0 | 0 | 4,112 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1977 | 0 | 0 | 0 | 1,472 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1978 | 0 | 0 | 0 | 3,906 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1979 | 0 | 0 | 0 | 6,149 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1980 | 0 | 0 | 0 | 5,700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1981 | 0 | 0 | 0 | 4,300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1982 | 0 | 0 | 0 | 3,838 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1983 | 0 | 0 | 0 | 3,822 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1984 | 0 | 0 | 0 | 5,700 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1985 | 0 | 0 | 0 | 5,433 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1986 | 0 | 0 | 0 | 5,107 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1987 | 0 | 0 | 0 | 5,625 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1988 | 0 | 0 | 0 | 4,412 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1989 | 0 | 0 | 0 | 6,091 | 0 | 300 | 602 | 0 | 0 | 0 | 0 | |
| 1990 | 0 | 0 | 0 | 2,922 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1991 | 0 | 0 | 0 | 141 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1992 | 0 | 0 | 0 | 2,239 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1993 | 0 | 0 | 0 | 2,858 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1994 | 0 | 0 | 0 | 3,071 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1995 | 0 | 0 | 0 | 5,169 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1996 | 0 | 0 | 0 | 4,904 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1997 | 0 | 0 | 0 | 5,238 | 0 | 0 | 0 | 11,100 | 0 | 0 | 0 | |
| 1998 | 0 | 0 | 0 | 4,401 | 0 | 0 | 0 | (11,100) | 0 | 0 | 0 | |
| 1999 | 0 | 0 | 0 | 4,871 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2000 | 0 | 0 | 0 | 4,508 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2001 | 0 | 0 | 638 | 3,592 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2002 | 0 | 0 | 773 | 4,885 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2003 | 0 | 7 | 917 | 4,266 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2004 | 0 | 38 | 786 | 4,629 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2005 | 0 | 299 | 1,046 | 4,194 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2006 | 0 | 321 | 1,103 | 4,242 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2007 | 0 | 320 | 1,031 | 3,567 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2008 | 8,885 | 56 | 1,744 | 1,985 | 0 | 0 | 0 | 0 | 0 | 5,873 | 0 | |
| 2009 | 0 | 0 | 1,169 | 1,993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2010 | 0 | 0 | 1,124 | 2,906 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2011 | 0 | 0 | 1,112 | 2,715 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2012 | 0 | 0 | 1,258 | 3,208 | 0 | 0 | 0 | 0 | 0 | 0 | 6,068 | |
| 2013 | 0 | 0 | 1,156 | 2,820 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2014 | 0 | 0 | 609 | 1,520 | 0 | 0 | 0 | 5,808 | 7,408 | 0 | 16,789 | |
| 2015 | 0 | 0 | 718 | 1,077 | 0 | 0 | 0 | 2,360 | 6,032 | 0 | 14,460 | |
| 2016 | 0 | 0 | 677 | 1,855 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2017 | 0 | 0 | 738 | 2,893 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2018 | 0 | 0 | 735 | 2,289 | 0 | 0 | 0 | 0 | 0 | 0 | 7,885 | |
| 2019 | 0 | 0 | 741 | 1,725 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2020 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2021 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2022 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2023 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2024 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2025 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2026 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2027 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2028 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2029 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2030 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2031 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2032 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2033 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2034 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2035 | 0 | 0 | 1,300 | 3,420 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| TOTAL | 8,885 | 1,041 | 38,875 | 254,720 | 200 | 300 | 602 | 0 | 8,168 | 13,440 | 5,873 | 45,202 |

^c Includes 425 acre-feet of 1988 advance allocation and 141 acre-feet of 1992 advance allocation.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT | | | | | | | | | | | |
|---------------|-------------------------------|------------------|----------------|---------------|----------------|----------------------------|------------|---------------|--------------------------|---------------|----------------------------|---------------|
| | SAN LUIS DIVISION (continued) | | | | | | | | | | | |
| | Reach 3A (continued) | | | | | | Reach 4 | | | | | |
| | Kern | | Metropolitan | Santa Barbara | Santa Clara | Santa Clarita ^d | Tulare | Dudley Ridge | Kern | | Santa Clarita ^d | Tulare |
| | Municipal and Industrial | Agricultural | | | | | | | Municipal and Industrial | Agricultural | | |
| [35] | [36] | [37] | [38] | [39] | [40] | [41] | [42] | [43] | [44] | [45] | [46] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,898 | 0 | 12,647 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,500 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14,446 | 0 | 3,500 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,125 | 4,162 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,300 |
| 2000 | 3,320 | 68,960 | 0 | 0 | 0 | 0 | 0 | 0 | 1,517 | 878 | 0 | 0 |
| 2001 | 0 | 140,242 | 0 | 0 | 30,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2002 | 6,000 | 62,024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2003 | 0 | 151,044 | 29,596 | 0 | 0 | 0 | 0 | 0 | 0 | 1,351 | 0 | 0 |
| 2004 | 0 | 44,877 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2005 | 0 | 109,712 | 50,000 | 0 | 8,804 | 0 | 277 | 0 | 0 | 7,000 | 0 | 0 |
| 2006 | 0 | 19,575 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2007 | 71,567 | 116,272 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2008 | 0 | 94,562 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,721 | 0 | 0 |
| 2009 | 0 | 164,653 | 52,933 | 0 | 9,999 | 3,300 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2010 | 0 | 35,896 | 124,543 | 0 | 9,993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2011 | 0 | 0 | 78,324 | 0 | 1,825 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2012 | 0 | 23,401 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2013 | 0 | 64,524 | 0 | 0 | 6,000 | 0 | 0 | 0 | 0 | 0 | 6,000 | 0 |
| 2014 | 0 | 104,689 | 15,000 | 0 | 27,476 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2015 | 0 | 105,549 | 0 | 0 | 17,115 | 0 | 0 | 0 | 0 | 3,278 | 0 | 8,166 |
| 2016 | 0 | 54,247 | 37,283 | 7,230 | 28,878 | 5,940 | 0 | 0 | 0 | 1,047 | 0 | 7,723 |
| 2017 | 0 | 0 | 15,946 | 15,584 | 3,497 | 30,000 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2018 | 0 | 23,607 | 0 | 0 | 2,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2019 | 0 | 16,510 | 0 | 0 | 1,352 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 80,887 | 1,400,344 | 403,625 | 22,814 | 146,939 | 39,240 | 277 | 16,344 | 2,642 | 44,584 | 6,000 | 18,689 |

^d Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | | |
|---------------|---------------------------------|--------------|---------------|----------------|--------------------------|--------------|--------------|---------------|----------------------------|---------------|----------------|--------------------------|--------------|
| | SAN LUIS DIVISION (continued) | | | | | | | | SOUTH SAN JOAQUIN DIVISION | | | | |
| | Reach 5 | | | | Reach 6 | | | | Kern | | | | |
| | Dudley Ridge | Empire | Kern | | Municipal and Industrial | Agricultural | Metropolitan | Oak Flat | Santa Clarita ^d | Tulare | Empire | Municipal and Industrial | Agricultural |
| [47] | [48] | [49] | [50] | [51] | [52] | [53] | [54] | [55] | [56] | [57] | [58] | | Kings |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,550 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 18,831 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,260 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 10,823 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 27,200 | 0 | 0 | 28,200 | 0 | 2,000 | 5,095 | 1,624 | 0 | 0 | 31,200 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 21,776 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,932 | 0 |
| 1996 | 0 | 0 | 1,125 | 81,507 | 0 | 0 | 0 | 4,000 | 0 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 9,080 | 154,940 | 0 | 0 | 0 | 3,500 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20,400 | 33,340 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 21,500 | 0 | 0 | 8,000 | 0 | 0 | 0 | 33,776 | 0 |
| 2000 | 0 | 0 | 8,130 | 57,647 | 0 | 0 | 0 | 0 | 0 | 1,457 | 35,847 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,457 | 0 | 0 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,000 | 0 | 0 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,900 | 0 | 0 | 0 | 0 | 0 |
| 2004 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,850 | 0 | 0 | 0 | 3,250 | 0 |
| 2005 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,000 | 0 | 0 | 0 | 6,954 | 0 |
| 2006 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,000 | 0 | 0 | 0 | 2,659 | 0 |
| 2007 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,600 | 0 | 0 | 0 | 3,119 | 0 |
| 2008 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,355 | 0 | 0 | 0 | 2,159 | 0 |
| 2009 | 0 | 870 | 0 | 0 | 0 | 0 | 0 | 1,490 | 0 | 0 | 0 | 1,779 | 0 |
| 2010 | 0 | 431 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,477 | 0 |
| 2011 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 | 0 | 2,964 | 0 |
| 2012 | 0 | 449 | 0 | 0 | 0 | 0 | 0 | 2,800 | 514 | 0 | 0 | 2,706 | 0 |
| 2013 | 0 | 692 | 0 | 8,393 | 0 | 0 | 0 | 5,350 | 280 | 0 | 0 | 2,666 | 0 |
| 2014 | 0 | 303 | 0 | 0 | 0 | 0 | 0 | 661 | 38 | 0 | 0 | 1,109 | 0 |
| 2015 | 0 | 142 | 0 | 1,349 | 0 | 0 | 0 | 7,576 | 120 | 0 | 0 | 391 | 0 |
| 2016 | 0 | 425 | 0 | 7,553 | 0 | 0 | 0 | 24,251 | 446 | 0 | 0 | 1,009 | 0 |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,000 | 100 | 0 | 0 | 1,902 | 0 |
| 2018 | 0 | 301 | 0 | 0 | 0 | 0 | 0 | 2,210 | 0 | 0 | 0 | 2,450 | 0 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,500 | 0 | 0 | 0 | 3,891 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 3,120 | 0 |
| TOTAL | 38,023 | 3,613 | 18,335 | 380,196 | 21,500 | 2,000 | 5,095 | 89,674 | 9,898 | 21,857 | 146,355 | 91,405 | |

^d Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | | |
|---------------|--|---------------|--------------|---------------|--------------------------|---------------|---------------|--------------|----------------------------|--------------|----------------|------------|-------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | | | |
| | Reach 6 (continued) | | Reach 7 | | | | | | | | Reach 8C | | |
| | Metropolitan | Tulare | Dudley Ridge | Kern | Municipal and Industrial | Agricultural | Kings | Metropolitan | Santa Clarita ^d | Tulare | Dudley Ridge | Empire | Kern |
| | [59] | [60] | [61] | [62] | [63] | [64] | [65] | [66] | [67] | [68] | [69] | [70] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,978 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,942 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,990 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,795 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,000 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,000 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,000 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,000 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 738 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 454 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,739 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 894 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,859 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 361 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,197 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,170 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,525 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,475 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 5,262 | 0 | 0 | 0 | 0 | 0 | 2,391 | 3,000 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,279 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 221 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 280 | 1,354 | 0 |
| 1993 | 0 | 0 | 0 | 18,157 | 10,043 | 0 | 0 | 0 | 0 | 0 | 0 | 2,741 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,100 | 0 | 0 | 1,666 | 0 |
| 1995 | 0 | 0 | 0 | 10,875 | 20,595 | 0 | 0 | 0 | 0 | 0 | 0 | 1,631 | 989 |
| 1996 | 0 | 0 | 0 | 3,424 | 69,704 | 0 | 0 | 0 | 0 | 0 | 95 | 1,868 | 0 |
| 1997 | 0 | 0 | 0 | 27,079 | 32,463 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 3,000 | 200 | 3,998 | 62,081 | 0 | 0 | 0 | 0 | 0 | 90 | 542 | 0 |
| 1999 | 11,000 | 23,000 | 0 | 7,923 | 19,500 | 0 | 500 | 0 | 4,470 | 86 | 0 | 3,176 | 0 |
| 2000 | 0 | 3,000 | 0 | 0 | 45,137 | 0 | 20,000 | 1,200 | 20,500 | 166 | 0 | 1,799 | 0 |
| 2001 | 0 | 600 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 1,360 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,067 | 0 | 0 | 1,405 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15,103 | 0 | 0 | 1,436 | 0 |
| 2004 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,562 | 0 |
| 2005 | 0 | 0 | 0 | 0 | 0 | 6,904 | 0 | 0 | 4,000 | 0 | 0 | 3,834 | 0 |
| 2006 | 0 | 0 | 0 | 0 | 0 | 2,500 | 0 | 0 | 6,000 | 0 | 0 | 3,282 | 0 |
| 2007 | 0 | 0 | 0 | 0 | 16,214 | 0 | 0 | 0 | 2,545 | 0 | 0 | 2,084 | 0 |
| 2008 | 0 | 0 | 400 | 0 | 1,998 | 1,330 | 0 | 0 | 1,500 | 0 | 0 | 947 | 0 |
| 2009 | 0 | 2,100 | 1,400 | 0 | 0 | 0 | 0 | 0 | 600 | 0 | 0 | 164 | 0 |
| 2010 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,850 | 0 | 0 | 2,828 | 0 |
| 2011 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,500 | 0 | 0 | 1,515 | 0 |
| 2012 | 0 | 500 | 0 | 0 | 0 | 2,000 | 0 | 0 | 0 | 0 | 0 | 1,279 | 0 |
| 2013 | 0 | 1,159 | 500 | 0 | 0 | 0 | 0 | 0 | 0 | 1,121 | 0 | 0 | 595 |
| 2014 | 0 | 275 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 175 |
| 2015 | 0 | 0 | 850 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 362 |
| 2016 | 0 | 4,257 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,175 | 0 | 0 | 951 |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 318 |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 852 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 788 | 2,446 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 | 0 |
| TOTAL | 11,000 | 37,891 | 3,350 | 71,456 | 282,997 | 12,734 | 20,500 | 3,300 | 77,431 | 3,910 | 107,245 | 989 | |

^d Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 7 of 21

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | |
|---------------|--|----------------|------------------|------------------|---------------|--------------------------|----------------|---------------|-----------------|------------------|---------------|------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | | |
| | Reach 8C (continued) | | | Reach 8D | | | | | | Reach 9 | | |
| | Kern | Agricultural | | Dudley Ridge | Empire | Kern | | Kings | San Luis Obispo | Tulare | Dudley Ridge | Empire |
| | | Kings | Tulare | | | Municipal and Industrial | Agricultural | | | | | |
| [71] | [72] | [73] | [74] | [75] | [76] | [77] | [78] | [79] | [80] | [81] | [82] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 900 | 25,100 | 26,360 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 100 | 7,081 | 31,375 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 40,407 | 0 | 0 | 0 | 0 | 0 | 3,408 | 0 | 0 |
| 1971 | 0 | 3,700 | 80,906 | 41,053 | 0 | 0 | 0 | 0 | 0 | 41,579 | 0 | 0 |
| 1972 | 0 | 1,400 | 144,843 | 42,443 | 0 | 0 | 0 | 0 | 0 | 113,550 | 0 | 0 |
| 1973 | 0 | 1,500 | 26,317 | 22,057 | 0 | 0 | 1,500 | 0 | 0 | 24,147 | 0 | 0 |
| 1974 | 0 | 1,500 | 32,603 | 33,390 | 0 | 0 | 0 | 0 | 0 | 39,686 | 0 | 0 |
| 1975 | 0 | 1,600 | 41,536 | 40,555 | 0 | 0 | 0 | 0 | 0 | 44,722 | 0 | 0 |
| 1976 | 0 | 1,600 | 26,595 | 41,421 | 0 | 0 | 0 | 0 | 0 | 32,216 | 0 | 0 |
| 1977 | 0 | 1,530 | 12,984 | 11,153 | 0 | 0 | 0 | 0 | 0 | 5,097 | 0 | 0 |
| 1978 | 0 | 2,070 | 3,934 | 51,747 | 0 | 0 | 0 | 0 | 0 | 8,119 | 0 | 0 |
| 1979 | 0 | 2,000 | 74,758 | 38,544 | 0 | 0 | 0 | 0 | 0 | 80,363 | 0 | 0 |
| 1980 | 0 | 2,200 | 35,140 | 41,000 | 0 | 0 | 0 | 0 | 0 | 40,304 | 0 | 0 |
| 1981 | 0 | 2,300 | 50,888 | 41,000 | 0 | 0 | 0 | 0 | 0 | 32,550 | 0 | 0 |
| 1982 | 0 | 1,536 | 4,405 | 41,000 | 0 | 0 | 0 | 214 | 0 | 14,146 | 0 | 0 |
| 1983 | 0 | 3,550 | 1,001 | 42,900 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| 1984 | 0 | 3,100 | 3,677 | 45,100 | 0 | 0 | 0 | 0 | 0 | 2,066 | 0 | 0 |
| 1985 | 0 | 3,400 | 68,638 | 46,251 | 0 | 0 | 0 | 0 | 0 | 41,153 | 0 | 0 |
| 1986 | 0 | 3,700 | 40,017 | 50,249 | 0 | 0 | 0 | 0 | 0 | 39,338 | 0 | 0 |
| 1987 | 0 | 4,000 | 30,359 | 46,288 | 0 | 0 | 0 | 0 | 0 | 62,725 | 0 | 0 |
| 1988 | 0 | 4,000 | 46,281 | 47,994 | 0 | 0 | 0 | 0 | 0 | 48,035 | 0 | 0 |
| 1989 | 0 | 4,000 | 63,703 | 52,158 | 0 | 0 | 0 | 0 | 0 | 63,947 | 0 | 0 |
| 1990 | 0 | 2,000 | 23,504 | 36,296 | 0 | 0 | 161 | 0 | 0 | 32,066 | 0 | 0 |
| 1991 | 0 | 0 | 1,697 | 927 | 0 | 0 | 0 | 0 | 0 | 483 | 0 | 0 |
| 1992 | 0 | 1,806 | 15,982 | 12,667 | 0 | 0 | 0 | 0 | 0 | 30,746 | 0 | 0 |
| 1993 | 0 | 4,000 | 57,112 | 23,221 | 0 | 0 | 0 | 0 | 0 | 65,732 | 197 | 0 |
| 1994 | 0 | 2,116 | 21,510 | 28,793 | 0 | 0 | 1,726 | 0 | 0 | 40,852 | 0 | 0 |
| 1995 | 10,527 | 4,000 | 40,934 | 45,240 | 0 | 2,959 | 27,270 | 0 | 0 | 57,435 | 0 | 0 |
| 1996 | 1,500 | 4,000 | 84,130 | 52,722 | 0 | 0 | 1,455 | 0 | 100 | 148,745 | 0 | 0 |
| 1997 | 1,500 | 0 | 9,467 | 57,496 | 0 | 0 | 0 | 0 | 100 | 9,402 | 4,900 | 0 |
| 1998 | 1,000 | 15 | 8,956 | 49,435 | 0 | 0 | 20,000 | 0 | 0 | 8,721 | 0 | 0 |
| 1999 | 400 | 4,000 | 90,334 | 58,290 | 0 | 0 | 9,000 | 0 | 0 | 162,631 | 0 | 0 |
| 2000 | 400 | 3,600 | 63,842 | 57,920 | 0 | 0 | 0 | 0 | 0 | 113,952 | 0 | 0 |
| 2001 | 0 | 1,560 | 23,300 | 40,155 | 0 | 0 | 6,089 | 0 | 0 | 58,369 | 0 | 0 |
| 2002 | 0 | 2,854 | 34,009 | 48,179 | 0 | 0 | 7,522 | 0 | 0 | 47,426 | 0 | 0 |
| 2003 | 0 | 3,692 | 25,317 | 45,732 | 0 | 0 | 8,350 | 0 | 0 | 61,521 | 0 | 0 |
| 2004 | 0 | 5,803 | 30,546 | 45,823 | 0 | 0 | 4,979 | 0 | 0 | 55,625 | 0 | 0 |
| 2005 | 0 | 4,057 | 42,450 | 58,627 | 0 | 0 | 0 | 1,891 | 0 | 92,552 | 0 | 0 |
| 2006 | 0 | 1,105 | 34,367 | 61,410 | 0 | 0 | 0 | 3,266 | 0 | 64,840 | 0 | 0 |
| 2007 | 0 | 657 | 31,305 | 39,974 | 0 | 0 | 7,740 | 1,921 | 0 | 49,633 | 0 | 0 |
| 2008 | 0 | 240 | 14,146 | 18,974 | 0 | 0 | 21,242 | 107 | 0 | 16,903 | 0 | 0 |
| 2009 | 0 | 1,612 | 13,522 | 12,037 | 0 | 0 | 19,684 | 0 | 0 | 16,794 | 5,500 | 0 |
| 2010 | 0 | 26 | 14,005 | 17,346 | 0 | 0 | 14,094 | 1,900 | 0 | 40,609 | 0 | 0 |
| 2011 | 0 | 2,160 | 23,814 | 22,427 | 0 | 0 | 65 | 1,194 | 0 | 30,827 | 292 | 0 |
| 2012 | 0 | 2,699 | 25,847 | 17,122 | 0 | 0 | 2,168 | 0 | 0 | 56,570 | 3,400 | 0 |
| 2013 | 0 | 1,029 | 16,490 | 19,605 | 0 | 0 | 4,239 | 950 | 0 | 24,241 | 1,941 | 0 |
| 2014 | 0 | 81 | 2,880 | 12,960 | 0 | 0 | 3,554 | 66 | 0 | 5,118 | 1,000 | 0 |
| 2015 | 0 | 838 | 977 | 9,473 | 0 | 0 | 2,000 | 0 | 0 | 617 | 1,250 | 0 |
| 2016 | 0 | 2,651 | 534 | 11,403 | 0 | 0 | 140 | 0 | 0 | 2,447 | 3,430 | 0 |
| 2017 | 0 | 1,428 | 17,107 | 15,319 | 0 | 0 | 0 | 1,611 | 0 | 39,654 | 0 | 774 |
| 2018 | 0 | 1,261 | 16,630 | 4,821 | 438 | 0 | 0 | 2 | 0 | 31,711 | 4,849 | 0 |
| 2019 | 0 | 2,660 | 31,072 | 32,333 | 0 | 0 | 1,683 | 0 | 0 | 59,319 | 0 | 0 |
| 2020 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2021 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2022 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2023 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2024 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2025 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2026 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2027 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2028 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2029 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2030 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2031 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2032 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2033 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2034 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| 2035 | 0 | 912 | 20,993 | 28,568 | 900 | 0 | 0 | 1,368 | 0 | 31,490 | 0 | 0 |
| TOTAL | 15,327 | 126,228 | 1,972,440 | 2,288,260 | 14,838 | 2,959 | 164,661 | 35,010 | 200 | 2,666,537 | 26,759 | 774 |

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | |
|---------------|--|--------------|--------|----------------|----------------|--------|--------------|--------|--------------------------|--------------|--------------|----------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | | |
| | Reach 9 (continued) | | | | Reach 10A | | | | | | | |
| | Kern | | Tulare | Alameda-Zone 7 | Alameda County | AVEK | Dudley Ridge | Empire | Kern | | Metropolitan | San Bernardino |
| | Municipal and Industrial | Agricultural | | | | | | | Municipal and Industrial | Agricultural | | |
| [83] | [84] | [85] | [86] | [87] | [88] | [89] | [90] | [91] | [92] | [93] | [94] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1968 | 0 | 30,951 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1969 | 0 | 24,489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1970 | 0 | 46,114 | 1,855 | 0 | 0 | 0 | 0 | 0 | 158 | 0 | 0 | |
| 1971 | 0 | 58,356 | 0 | 0 | 0 | 0 | 0 | 0 | 9,973 | 0 | 0 | |
| 1972 | 0 | 75,464 | 0 | 0 | 0 | 0 | 0 | 0 | 5,876 | 0 | 0 | |
| 1973 | 0 | 54,583 | 0 | 0 | 0 | 0 | 0 | 0 | 22,948 | 0 | 0 | |
| 1974 | 0 | 63,814 | 0 | 0 | 0 | 0 | 0 | 0 | 22,719 | 0 | 0 | |
| 1975 | 0 | 50,021 | 0 | 0 | 0 | 0 | 0 | 0 | 2,791 | 72,121 | 0 | |
| 1976 | 0 | 53,465 | 0 | 0 | 0 | 0 | 0 | 74 | 50,444 | 0 | 0 | |
| 1977 | 0 | 24,668 | 0 | 0 | 0 | 0 | 0 | 201 | 34,451 | 0 | 0 | |
| 1978 | 0 | 72,231 | 0 | 0 | 0 | 0 | 0 | 0 | 161,889 | 0 | 0 | |
| 1979 | 0 | 74,524 | 0 | 0 | 0 | 0 | 0 | 285 | 153,245 | 0 | 0 | |
| 1980 | 0 | 79,946 | 0 | 0 | 0 | 0 | 0 | 3,780 | 131,836 | 0 | 0 | |
| 1981 | 0 | 76,508 | 0 | 0 | 0 | 0 | 0 | 341 | 133,500 | 0 | 0 | |
| 1982 | 0 | 76,877 | 0 | 0 | 0 | 0 | 0 | 4,700 | 164,832 | 0 | 0 | |
| 1983 | 2,217 | 84,573 | 0 | 0 | 0 | 0 | 0 | 0 | 146,493 | 0 | 0 | |
| 1984 | 4,100 | 85,732 | 0 | 0 | 0 | 0 | 0 | 6,910 | 150,302 | 0 | 0 | |
| 1985 | 0 | 67,696 | 0 | 0 | 0 | 0 | 0 | 6,495 | 153,473 | 0 | 0 | |
| 1986 | 0 | 79,943 | 0 | 0 | 0 | 0 | 0 | 5,065 | 198,099 | 0 | 0 | |
| 1987 | 0 | 97,732 | 0 | 0 | 0 | 0 | 0 | 900 | 226,521 | 0 | 0 | |
| 1988 | 1,100 | 83,858 | 0 | 0 | 0 | 0 | 0 | 9,529 | 212,495 | 0 | 0 | |
| 1989 | 0 | 91,134 | 0 | 0 | 0 | 0 | 0 | 21,038 | 251,979 | 0 | 0 | |
| 1990 | 0 | 83,108 | 0 | 0 | 0 | 0 | 0 | 25,189 | 47,472 | 0 | 0 | |
| 1991 | 13,683 | 601 | 0 | 0 | 0 | 0 | 0 | 1,142 | 6,820 | 0 | 0 | |
| 1992 | 28 | 40,183 | 0 | 0 | 0 | 0 | 0 | 3,685 | 89,390 | 0 | 0 | |
| 1993 | 5,945 | 53,597 | 0 | 0 | 0 | 0 | 0 | 775 | 233,862 | 44,496 | 0 | |
| 1994 | 0 | 44,994 | 0 | 0 | 0 | 0 | 0 | 5,227 | 126,792 | 0 | 0 | |
| 1995 | 0 | 64,076 | 0 | 0 | 0 | 0 | 0 | 366 | 229,448 | 50,000 | 0 | |
| 1996 | 2,236 | 89,291 | 0 | 0 | 6,200 | 0 | 0 | 6,666 | 199,854 | 95,000 | 0 | |
| 1997 | 0 | 72,013 | 0 | 0 | 10,000 | 0 | 900 | 0 | 3,577 | 157,385 | 125,000 | |
| 1998 | 0 | 57,530 | 0 | 1,970 | 3,780 | 0 | 0 | 2,603 | 163,587 | 39,500 | 0 | |
| 1999 | 0 | 72,734 | 0 | 22,910 | 16,100 | 0 | 0 | 1,657 | 190,787 | 75,850 | 0 | |
| 2000 | 0 | 73,562 | 0 | 23,940 | 13,380 | 0 | 0 | 7,672 | 283,208 | 0 | 0 | |
| 2001 | 0 | 54,198 | 0 | 5,000 | 0 | 0 | 0 | 160 | 98,175 | 0 | 0 | |
| 2002 | 0 | 60,957 | 0 | 14,287 | 2,083 | 0 | 0 | 145 | 171,498 | 0 | 0 | |
| 2003 | 0 | 54,724 | 0 | 6,500 | 18,800 | 0 | 0 | 217 | 174,674 | 70,940 | 0 | |
| 2004 | 0 | 54,330 | 0 | 5,740 | 8,000 | 0 | 0 | 65,751 | 117,286 | 0 | 0 | |
| 2005 | 0 | 53,206 | 0 | 0 | 28,422 | 0 | 0 | 146 | 232,519 | 31,210 | 0 | |
| 2006 | 0 | 56,909 | 0 | 5,740 | 27,447 | 0 | 5,000 | 0 | 237,623 | 0 | 0 | |
| 2007 | 0 | 66,018 | 0 | 717 | 1,029 | 0 | 3,000 | 0 | 203,794 | 0 | 0 | |
| 2008 | 0 | 63,315 | 0 | 0 | 0 | 0 | 2,800 | 0 | 1,702 | 103,176 | 0 | |
| 2009 | 0 | 64,007 | 2,330 | 0 | 0 | 0 | 2,000 | 0 | 690 | 95,798 | 0 | |
| 2010 | 0 | 76,357 | 0 | 3,000 | 7,000 | 0 | 2,000 | 0 | 14 | 102,773 | 74,000 | |
| 2011 | 0 | 78,177 | 2,000 | 3,414 | 16,020 | 0 | 2,908 | 0 | 26 | 137,476 | 149,012 | |
| 2012 | 0 | 69,395 | 2,000 | 0 | 7,500 | 0 | 1,660 | 0 | 29 | 201,876 | 45,000 | |
| 2013 | 0 | 82,005 | 0 | 0 | 0 | 0 | 2,500 | 0 | 2,057 | 116,190 | 0 | |
| 2014 | 0 | 67,754 | 0 | 0 | 0 | 0 | 0 | 0 | 40,332 | 0 | 0 | |
| 2015 | 0 | 64,809 | 0 | 0 | 0 | 0 | 0 | 0 | 3,751 | 49,953 | 0 | |
| 2016 | 0 | 68,699 | 0 | 5,000 | 18,272 | 0 | 1,075 | 0 | 817 | 101,941 | 0 | |
| 2017 | 0 | 75,501 | 0 | 19,381 | 19,302 | 9,226 | 2,446 | 251 | 867 | 166,972 | 77,731 | |
| 2018 | 0 | 69,618 | 900 | 0 | 0 | 11,015 | 5,717 | 0 | 2,604 | 93,384 | 0 | |
| 2019 | 0 | 84,352 | 0 | 9,580 | 6,238 | 0 | 0 | 0 | 1,057 | 228,800 | 75,578 | |
| 2020 | 0 | 60,816 | 0 | 0 | 5,916 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2021 | 0 | 60,816 | 0 | 0 | 4,500 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2022 | 0 | 60,816 | 0 | 0 | 4,188 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2023 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2024 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2025 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2026 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2027 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2028 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2029 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2030 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2031 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2032 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2033 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2034 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| 2035 | 0 | 60,816 | 0 | 0 | 3,972 | 0 | 0 | 0 | 0 | 136,580 | 60,000 | |
| TOTAL | 29,309 | 4,341,755 | 9,085 | 127,179 | 275,813 | 20,241 | 32,006 | 251 | 210,720 | 8,891,479 | 1,913,317 | 2,868 |

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | |
|---------------|--|----------------|----------------------------|--------------|--------------|---------------|------------|--------------------------|------------------|--------------|----------------------------|--------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | | |
| | Reach 10A (continued) | | | | Reach 11B | | | | | | | |
| | Santa Barbara | Santa Clara | Santa Clarita ^d | Tulare | AVEK | Dudley Ridge | Empire | Municipal and Industrial | Agricultural | Metropolitan | Santa Clarita ^d | Tulare |
| [95] | [96] | [97] | [98] | [99] | [100] | [101] | [102] | [103] | [104] | [105] | [106] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,776 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 2,842 | 0 | 0 | 0 | 0 | 64,682 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 4,315 | 0 | 0 | 0 | 0 | 72,279 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63,773 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72,358 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67,544 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 87,476 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85,675 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85,067 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,981 | 29,603 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 88,753 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 484 | 108,379 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,112 | 103,207 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 494 | 104,395 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 798 | 99,081 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,069 | 94,117 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,349 | 124,819 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,666 | 118,646 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,673 | 124,836 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13,074 | 111,877 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13,509 | 114,031 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,986 | 127,058 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,319 | 104,107 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,099 | 118 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,419 | 35,093 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,696 | 72,645 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,506 | 71,202 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,154 | 97,072 | 0 | 0 | 0 |
| 1996 | 0 | 45,000 | 0 | 0 | 0 | 0 | 0 | 1,185 | 96,250 | 0 | 0 | 0 |
| 1997 | 0 | 35,000 | 0 | 0 | 0 | 0 | 0 | 1,111 | 104,823 | 0 | 0 | 0 |
| 1998 | 0 | 23,800 | 0 | 0 | 0 | 0 | 0 | 1,311 | 72,646 | 0 | 0 | 0 |
| 1999 | 0 | 30,000 | 0 | 0 | 0 | 0 | 0 | 2,127 | 92,262 | 0 | 0 | 0 |
| 2000 | 0 | 23,730 | 0 | 0 | 1,500 | 0 | 0 | 3,793 | 89,622 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 636 | 73,105 | 0 | 0 | 0 |
| 2002 | 0 | 3,311 | 24,000 | 0 | 0 | 0 | 0 | 1,457 | 91,123 | 0 | 0 | 0 |
| 2003 | 0 | 33,000 | 0 | 0 | 0 | 0 | 0 | 1,379 | 87,174 | 0 | 0 | 0 |
| 2004 | 0 | 0 | 32,522 | 0 | 0 | 0 | 0 | 1,299 | 97,722 | 0 | 0 | 0 |
| 2005 | 0 | 55,448 | 0 | 0 | 0 | 0 | 0 | 824 | 93,554 | 0 | 0 | 0 |
| 2006 | 0 | 64,036 | 0 | 0 | 0 | 0 | 0 | 0 | 98,417 | 0 | 0 | 0 |
| 2007 | 0 | 3,692 | 0 | 0 | 0 | 0 | 0 | 4,030 | 94,334 | 0 | 0 | 0 |
| 2008 | 0 | 4,306 | 0 | 0 | 0 | 0 | 0 | 263 | 93,417 | 0 | 0 | 0 |
| 2009 | 0 | 0 | 0 | 0 | 300 | 0 | 0 | 127 | 96,776 | 0 | 0 | 0 |
| 2010 | 0 | 51,990 | 0 | 800 | 0 | 5,350 | 0 | 381 | 92,220 | 0 | 0 | 3,750 |
| 2011 | 0 | 65,770 | 0 | 500 | 0 | 0 | 0 | 1,160 | 105,682 | 0 | 0 | 0 |
| 2012 | 0 | 0 | 0 | 0 | 2,000 | 0 | 0 | 1,019 | 94,519 | 0 | 5,500 | 0 |
| 2013 | 0 | 0 | 0 | 0 | 2,500 | 0 | 0 | 1,167 | 110,418 | 0 | 5,500 | 0 |
| 2014 | 0 | 0 | 0 | 0 | 9,786 | 0 | 0 | 0 | 87,728 | 0 | 0 | 0 |
| 2015 | 0 | 0 | 0 | 0 | 8,200 | 0 | 4,553 | 0 | 84,288 | 0 | 0 | 0 |
| 2016 | 0 | 9,634 | 0 | 0 | 5,000 | 0 | 1,037 | 91,735 | 942 | 0 | 0 | 0 |
| 2017 | 0 | 71,163 | 5,340 | 0 | 3,569 | 255 | 19,966 | 93,037 | 0 | 0 | 0 | 0 |
| 2018 | 900 | 42,600 | 0 | 0 | 3,985 | 7,490 | 0 | 419 | 91,114 | 0 | 0 | 0 |
| 2019 | 254 | 28,232 | 0 | 0 | 0 | 0 | 0 | 7,170 | 31,632 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,000 | 51,000 | 0 | 0 | 0 |
| TOTAL | 1,154 | 590,712 | 61,862 | 8,457 | 3,985 | 45,695 | 255 | 299,802 | 5,332,267 | 942 | 11,000 | 4,474 |

^d Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | |
|---------------|--|--------------------------|--------------|----------------|----------------|--------|--------------|--------------------------|--------------|--------------|----------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | |
| | Reach 12D | | | Reach 12E | | | | | | | |
| | Dudley Ridge | Kern | | Alameda Zone 7 | Alameda County | AVEK | Dudley Ridge | Kern | | Metropolitan | San Bernardino |
| Calendar Year | Dudley Ridge | Municipal and Industrial | Agricultural | Alameda Zone 7 | Alameda County | AVEK | Dudley Ridge | Municipal and Industrial | Agricultural | Metropolitan | San Bernardino |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,279 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28,056 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62,342 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13,082 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,651 | 4,248 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,787 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37,519 | 20,555 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20,280 | 1,737 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47,133 | 15,011 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50,740 | 61,567 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32,039 | 22,252 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59,917 | 58,470 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36,139 | 75,587 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10,950 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63,941 | 39,929 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69,839 | 84,117 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62,109 | 51,540 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95,297 | 86,223 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86,390 | 123,249 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83,965 | 146,544 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 82,164 | 38,973 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,842 | 303 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47,181 | 57,048 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 84,822 | 285,554 | 5,504 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66,188 | 77,839 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 1,000 | 107,130 | 181,097 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 4,131 | 89,257 | 134,138 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 8,012 | 32,061 | 128,329 | 1,486 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 5,925 | 28,258 | 88,998 | 24,234 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 1,321 | 110,161 | 255,343 | 62,162 | 0 |
| 2000 | 0 | 21 | 0 | 0 | 0 | 0 | 953 | 11,772 | 156,215 | 149,731 | 0 |
| 2001 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 385 | 51,076 | 0 | 0 |
| 2002 | 0 | 760 | 6 | 0 | 0 | 0 | 0 | 0 | 135,335 | 0 | 0 |
| 2003 | 0 | 2,431 | 152 | 0 | 0 | 0 | 0 | 39,479 | 112,056 | 45,989 | 0 |
| 2004 | 0 | 3,419 | 768 | 0 | 0 | 0 | 1,600 | 52,303 | 95,893 | 0 | 0 |
| 2005 | 0 | 2,841 | 644 | 3,419 | 1,878 | 0 | 1,154 | 43,835 | 340,281 | 15,384 | 0 |
| 2006 | 0 | 2,513 | 1,556 | 10,000 | 0 | 0 | 0 | 82,207 | 296,230 | 5,065 | 0 |
| 2007 | 0 | 2,164 | 2,284 | 0 | 0 | 0 | 0 | 1,179 | 87,764 | 0 | 0 |
| 2008 | 0 | 1,514 | 3,000 | 0 | 0 | 0 | 0 | 0 | 58,983 | 0 | 0 |
| 2009 | 0 | 564 | 4,274 | 0 | 0 | 0 | 0 | 0 | 82,434 | 0 | 0 |
| 2010 | 0 | 1,904 | 2,206 | 10,000 | 0 | 0 | 0 | 4,851 | 72,809 | 134,855 | 0 |
| 2011 | 0 | 973 | 65 | 10,000 | 1,960 | 0 | 0 | 26,249 | 309,617 | 109,787 | 8,066 |
| 2012 | 0 | 3,128 | 939 | 20,308 | 0 | 0 | 200 | 19,423 | 102,054 | 92,803 | 19,066 |
| 2013 | 0 | 3,473 | 1,531 | 0 | 0 | 0 | 0 | 26,652 | 60,295 | 0 | 0 |
| 2014 | 0 | 0 | 5,225 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 |
| 2015 | 0 | 985 | 3,486 | 0 | 0 | 0 | 0 | 280 | 2,750 | 0 | 0 |
| 2016 | 0 | 2,225 | 1,442 | 7,000 | 0 | 0 | 0 | 1,225 | 64,819 | 3,908 | 0 |
| 2017 | 0 | 1,830 | 789 | 10,619 | 0 | 25,417 | 13,924 | 7,852 | 343,922 | 78,271 | 0 |
| 2018 | 107 | 923 | 28 | 0 | 0 | 0 | 0 | 0 | 90,347 | 3,512 | 0 |
| 2019 | 0 | 5,333 | 1,017 | 2,340 | 0 | 0 | 896 | 41,283 | 249,041 | 51,437 | 0 |
| 2020 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2021 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2022 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2023 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2024 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2025 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2026 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2027 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2028 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2029 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2030 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2031 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2032 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2033 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2034 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| 2035 | 0 | 6,500 | 0 | 5,000 | 0 | 0 | 0 | 50,703 | 75,694 | 30,000 | 0 |
| TOTAL | 107 | 141,042 | 29,412 | 153,686 | 3,838 | 25,417 | 39,116 | 2,574,246 | 6,096,672 | 1,264,128 | 27,132 |

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | |
|---------------|--|--------------|----------------------------|----------------|----------------|---------------|----------------|--------------------------|---------------|--------------|--------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | |
| | Reach 12E | | | Reach 13B | | | | | | | |
| | Santa Barbara | Santa Clara | Santa Clarita ^d | Alameda-Zone 7 | Alameda County | Dudley Ridge | Kern | Municipal and Industrial | Agricultural | Metropolitan | Palmdale |
| [118] | [119] | [120] | [121] | [122] | [123] | [124] | [125] | [126] | [127] | [128] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 4,891 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17,388 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,297 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 8,038 | 4,246 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 8,538 | 7,059 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 5,626 | 8,855 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,024 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 21,773 | 7,601 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,663 | 17,766 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22,515 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 7,844 | 14,037 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25,553 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,491 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,117 | 26,178 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67,711 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 66,551 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 5,609 | 40,374 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,298 | 47,167 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,504 | 57,114 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,645 | 20,423 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 789 | 17,449 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,798 | 88,157 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,494 | 33,148 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,751 | 110,685 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28,063 | 64,849 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43,803 | 49,312 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29,444 | 40,085 | 5,500 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,969 | 92,998 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 102,202 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 1,733 | 0 | 0 | 33,925 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 736 | 0 | 0 | 71,444 | 0 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 350 | 2,396 | 124,582 | 1,865 | 0 | 0 |
| 2004 | 0 | 0 | 0 | 0 | 0 | 1,657 | 1,922 | 73,801 | 0 | 0 | 0 |
| 2005 | 0 | 2,619 | 20,000 | 2,321 | 0 | 14,540 | 21,781 | 269,631 | 192 | 0 | 0 |
| 2006 | 0 | 0 | 20,000 | 0 | 0 | 5,670 | 11,787 | 196,116 | 0 | 0 | 0 |
| 2007 | 0 | 0 | 8,200 | 0 | 0 | 2,161 | 0 | 72,240 | 0 | 0 | 0 |
| 2008 | 0 | 0 | 0 | 0 | 0 | 0 | 200 | 9,785 | 0 | 0 | 0 |
| 2009 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,060 | 0 | 0 | 0 |
| 2010 | 0 | 0 | 25,844 | 0 | 0 | 304 | 0 | 63,966 | 22,000 | 0 | 0 |
| 2011 | 4,002 | 706 | 0 | 2,331 | 3,420 | 34,733 | 4,896 | 265,382 | 25,845 | 7,000 | 7,893 |
| 2012 | 0 | 0 | 6,416 | 0 | 0 | 0 | 448 | 70,805 | 1,950 | 2,500 | 0 |
| 2013 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14,189 | 0 | 0 | 0 |
| 2014 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,246 | 0 | 0 | 0 |
| 2015 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 481 | 0 | 0 | 0 |
| 2016 | 0 | 0 | 0 | 0 | 0 | 0 | 3,005 | 12,815 | 0 | 0 | 0 |
| 2017 | 0 | 0 | 0 | 0 | 0 | 28,487 | 3,201 | 191,350 | 4,477 | 352 | 0 |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,710 | 0 | 0 | 0 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 624 | 0 | 94,418 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24,135 | 0 | 0 | 0 |
| TOTAL | 4,002 | 3,325 | 80,460 | 4,652 | 3,420 | 90,995 | 286,402 | 3,047,232 | 61,829 | 9,852 | 7,893 |

^dCastaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 12 of 21

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | |
|---------------|--|--------|-----------|--------------|--------------------------|--------------|--------------|--------------------------|--------------|-----------|--------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | |
| | Reach 13B (continued) | | Reach 14A | | | | Reach 14B | | | Reach 14C | |
| | Santa Clara | Tulare | AVEK | Dudley Ridge | Kern | | Dudley Ridge | Kern | | AVEK | Dudley Ridge |
| | | | | | Municipal and Industrial | Agricultural | | Municipal and Industrial | Agricultural | | |
| [129] | [130] | [131] | [132] | [133] | [134] | [135] | [136] | [137] | [138] | [139] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 23,844 | 0 | 0 | 49,929 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 26,621 | 0 | 0 | 77,034 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 15,328 | 0 | 0 | 47,040 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 7,794 | 0 | 0 | 32,356 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 10,306 | 0 | 0 | 27,736 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 268 | 0 | 0 | 35,296 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 8,299 | 0 | 0 | 13,539 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 34,029 | 0 | 0 | 72,351 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 3,012 | 27,356 | 0 | 0 | 59,413 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 4,312 | 16,876 | 0 | 0 | 40,513 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 4,511 | 13,007 | 0 | 8 | 42,753 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 3,735 | 24,240 | 0 | 184 | 57,739 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 1,168 | 20,302 | 0 | 0 | 57,922 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 137 | 35,369 | 0 | 10 | 79,179 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 206 | 33,103 | 0 | 0 | 72,855 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 180 | 26,384 | 0 | 0 | 70,864 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 610 | 30,098 | 0 | 9 | 67,710 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 622 | 32,778 | 0 | 19 | 75,968 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 721 | 29,292 | 0 | 7 | 82,201 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 673 | 26,800 | 0 | 13 | 81,076 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 768 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 673 | 16,238 | 0 | 464 | 41,143 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 629 | 17,832 | 0 | 0 | 62,493 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 2,513 | 16,760 | 0 | 3,000 | 54,011 | 0 | 0 |
| 1995 | 0 | 3,500 | 0 | 0 | 3 | 21,234 | 0 | 0 | 67,391 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 26,978 | 0 | 0 | 85,936 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 23,035 | 0 | 0 | 79,790 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 15,706 | 0 | 0 | 58,132 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 21,153 | 0 | 0 | 67,576 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 19,264 | 0 | 0 | 70,585 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 12,452 | 0 | 0 | 49,602 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 11,161 | 0 | 0 | 52,762 | 0 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 13,685 | 0 | 0 | 44,576 | 0 | 0 |
| 2004 | 0 | 0 | 0 | 0 | 0 | 13,030 | 0 | 0 | 52,012 | 0 | 0 |
| 2005 | 9,014 | 0 | 0 | 0 | 0 | 15,663 | 0 | 0 | 56,739 | 0 | 0 |
| 2006 | 0 | 0 | 0 | 0 | 0 | 17,779 | 0 | 0 | 65,142 | 0 | 0 |
| 2007 | 0 | 0 | 0 | 0 | 0 | 21,435 | 0 | 0 | 67,955 | 0 | 0 |
| 2008 | 2,324 | 0 | 0 | 0 | 0 | 20,087 | 0 | 0 | 63,497 | 0 | 0 |
| 2009 | 0 | 0 | 0 | 0 | 0 | 22,281 | 0 | 0 | 60,726 | 0 | 0 |
| 2010 | 0 | 10,000 | 0 | 0 | 0 | 21,964 | 0 | 0 | 58,110 | 0 | 0 |
| 2011 | 0 | 0 | 0 | 0 | 0 | 24,131 | 0 | 0 | 61,859 | 0 | 0 |
| 2012 | 0 | 8,000 | 0 | 0 | 0 | 25,982 | 0 | 0 | 64,489 | 0 | 0 |
| 2013 | 0 | 0 | 0 | 0 | 0 | 29,414 | 0 | 0 | 62,137 | 0 | 0 |
| 2014 | 0 | 0 | 0 | 0 | 0 | 28,172 | 0 | 0 | 50,337 | 0 | 0 |
| 2015 | 0 | 0 | 0 | 0 | 0 | 25,886 | 0 | 0 | 48,996 | 0 | 0 |
| 2016 | 0 | 0 | 0 | 0 | 0 | 27,686 | 0 | 0 | 55,147 | 0 | 0 |
| 2017 | 0 | 0 | 0 | 0 | 0 | 26,520 | 0 | 0 | 67,600 | 0 | 0 |
| 2018 | 0 | 0 | 1,207 | 820 | 0 | 24,524 | 2,220 | 0 | 57,611 | 290 | 2,327 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 7,018 | 0 | 0 | 15,736 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 16,753 | 0 | 0 | 42,800 | 0 | 0 |
| TOTAL | 11,338 | 21,500 | 1,207 | 820 | 24,473 | 1,277,212 | 2,220 | 3,714 | 3,470,367 | 290 | 2,327 |

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 13 of 21

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | | |
|---------------|--|------------------|----------------|--------------|--------------|--------------------------|------------------|--------------|--------------|----------------|--------------------------|--------------------|--|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | | TEHACHAPI DIVISION | |
| | Reach 14C | | | Reach 15A | | | | Reach 16A | | | Reach 17E | | |
| | Kern | | Metropolitan | Reach 14C | | Reach 15A | | Kern | | Metropolitan | Reach 16A | | |
| | Municipal and Industrial | Agricultural | | Avek | Dudley Ridge | Municipal and Industrial | Agricultural | Avek | Dudley Ridge | | Municipal and Industrial | Agricultural | |
| 1962 | [140] | [141] | [142] | [143] | [144] | [145] | [146] | [147] | [148] | [149] | [150] | [151] | |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1971 | 0 | 24,187 | 0 | 0 | 0 | 0 | 3,552 | 0 | 0 | 0 | 0 | 0 | |
| 1972 | 0 | 35,016 | 0 | 0 | 0 | 0 | 6,064 | 0 | 0 | 0 | 4,768 | 0 | |
| 1973 | 0 | 19,043 | 0 | 0 | 0 | 0 | 19,916 | 0 | 0 | 0 | 1,961 | 0 | |
| 1974 | 0 | 12,601 | 0 | 0 | 0 | 0 | 18,000 | 0 | 0 | 3,000 | 1,564 | 0 | |
| 1975 | 0 | 12,783 | 0 | 0 | 0 | 0 | 35,420 | 0 | 0 | 3,200 | 9,867 | 0 | |
| 1976 | 0 | 9,005 | 0 | 0 | 0 | 0 | 39,551 | 0 | 0 | 3,500 | 11,667 | 0 | |
| 1977 | 0 | 3,757 | 0 | 0 | 0 | 0 | 6,158 | 0 | 0 | 3,420 | 685 | 0 | |
| 1978 | 0 | 24,542 | 0 | 0 | 0 | 0 | 31,148 | 0 | 0 | 7,989 | 1,655 | 0 | |
| 1979 | 0 | 22,372 | 0 | 0 | 0 | 0 | 38,602 | 0 | 0 | 2,813 | 15,808 | 0 | |
| 1980 | 0 | 19,953 | 0 | 0 | 0 | 0 | 37,817 | 0 | 0 | 2,700 | 16,145 | 0 | |
| 1981 | 7 | 18,729 | 0 | 0 | 0 | 0 | 39,033 | 0 | 0 | 2,636 | 18,156 | 0 | |
| 1982 | 0 | 26,479 | 0 | 0 | 0 | 0 | 47,782 | 0 | 0 | 1,921 | 16,577 | 0 | |
| 1983 | 0 | 26,613 | 0 | 0 | 0 | 0 | 37,426 | 0 | 0 | 1,400 | 17,907 | 0 | |
| 1984 | 2 | 34,996 | 0 | 0 | 0 | 0 | 49,848 | 0 | 0 | 1,338 | 24,246 | 0 | |
| 1985 | 0 | 31,758 | 0 | 0 | 0 | 0 | 44,078 | 0 | 0 | 1,309 | 16,820 | 0 | |
| 1986 | 0 | 34,566 | 0 | 0 | 0 | 0 | 42,461 | 0 | 0 | 1,213 | 15,559 | 0 | |
| 1987 | 10 | 31,019 | 0 | 0 | 0 | 0 | 34,748 | 0 | 0 | 1,665 | 10,170 | 0 | |
| 1988 | 1 | 37,165 | 0 | 0 | 0 | 16 | 41,978 | 0 | 0 | 1,925 | 8,987 | 0 | |
| 1989 | 5 | 37,800 | 0 | 0 | 0 | 2 | 43,239 | 0 | 0 | 2,668 | 8,649 | 0 | |
| 1990 | 9 | 34,174 | 0 | 0 | 0 | 6 | 36,347 | 0 | 0 | 2,819 | 8,608 | 0 | |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,000 | 0 | 2,588 | 343 | 0 | |
| 1992 | 0 | 18,084 | 0 | 0 | 0 | 0 | 24,243 | 0 | 0 | 2,087 | 8,275 | 0 | |
| 1993 | 0 | 28,103 | 0 | 0 | 0 | 0 | 27,997 | 0 | 0 | 2,494 | 9,167 | 0 | |
| 1994 | 1,000 | 22,624 | 0 | 0 | 0 | 0 | 29,511 | 0 | 0 | 3,011 | 13,877 | 0 | |
| 1995 | 0 | 31,285 | 0 | 0 | 0 | 0 | 26,134 | 0 | 0 | 3,188 | 15,042 | 0 | |
| 1996 | 0 | 38,879 | 0 | 0 | 0 | 0 | 36,186 | 0 | 0 | 2,573 | 18,142 | 0 | |
| 1997 | 0 | 33,512 | 0 | 0 | 0 | 0 | 36,281 | 0 | 0 | 3,997 | 17,048 | 0 | |
| 1998 | 0 | 23,097 | 0 | 0 | 0 | 0 | 28,712 | 0 | 0 | 3,751 | 17,032 | 0 | |
| 1999 | 0 | 31,489 | 0 | 0 | 0 | 0 | 36,801 | 0 | 0 | 3,316 | 24,071 | 0 | |
| 2000 | 0 | 33,716 | 0 | 0 | 0 | 0 | 40,063 | 0 | 0 | 3,015 | 20,919 | 0 | |
| 2001 | 0 | 23,557 | 0 | 0 | 0 | 0 | 31,192 | 0 | 0 | 1,894 | 13,476 | 0 | |
| 2002 | 0 | 27,138 | 0 | 0 | 0 | 0 | 41,552 | 0 | 0 | 4,227 | 14,520 | 0 | |
| 2003 | 0 | 24,783 | 12,911 | 0 | 0 | 0 | 36,602 | 0 | 0 | 1,168 | 16,799 | 0 | |
| 2004 | 0 | 30,313 | 0 | 0 | 0 | 0 | 40,184 | 0 | 0 | 2,239 | 19,714 | 0 | |
| 2005 | 0 | 21,979 | 0 | 0 | 0 | 0 | 39,870 | 0 | 0 | 167 | 18,353 | 0 | |
| 2006 | 1,413 | 20,193 | 5,440 | 0 | 0 | 0 | 46,244 | 0 | 0 | 279 | 22,570 | 0 | |
| 2007 | 0 | 24,947 | 1,881 | 0 | 0 | 0 | 47,390 | 0 | 0 | 204 | 26,229 | 0 | |
| 2008 | 0 | 27,847 | 0 | 0 | 0 | 0 | 33,029 | 0 | 0 | 3,834 | 18,426 | 0 | |
| 2009 | 0 | 27,185 | 0 | 0 | 0 | 0 | 26,007 | 0 | 0 | 1,531 | 19,517 | 0 | |
| 2010 | 0 | 25,477 | 29,818 | 0 | 0 | 0 | 22,045 | 0 | 0 | 1,033 | 19,829 | 0 | |
| 2011 | 0 | 27,061 | 27,326 | 0 | 0 | 0 | 42,158 | 0 | 0 | 3,808 | 17,957 | 0 | |
| 2012 | 0 | 23,446 | 31,703 | 0 | 0 | 0 | 27,920 | 0 | 0 | 3,453 | 19,842 | 0 | |
| 2013 | 0 | 25,004 | 6,592 | 0 | 0 | 0 | 28,147 | 0 | 0 | 148 | 21,311 | 4 | |
| 2014 | 0 | 20,992 | 0 | 0 | 0 | 0 | 10,784 | 0 | 0 | 0 | 18,673 | 1 | |
| 2015 | 0 | 17,267 | 0 | 0 | 0 | 0 | 10,202 | 0 | 0 | 2,407 | 16,214 | 0 | |
| 2016 | 0 | 23,159 | 911 | 0 | 0 | 0 | 15,901 | 0 | 0 | 1,324 | 21,278 | 0 | |
| 2017 | 0 | 28,487 | 19,176 | 0 | 0 | 0 | 45,572 | 0 | 0 | 2,249 | 24,558 | 0 | |
| 2018 | 0 | 23,966 | 18,751 | 2,149 | 979 | 0 | 15,525 | 2,243 | 1,249 | 258 | 22,838 | 0 | |
| 2019 | 0 | 6,485 | 0 | 0 | 0 | 0 | 15,211 | 0 | 0 | 4,968 | 9,672 | 0 | |
| 2020 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2021 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2022 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2023 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2024 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2025 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2026 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2027 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2028 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2029 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2030 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2031 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2032 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2033 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2034 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| 2035 | 0 | 20,500 | 0 | 0 | 0 | 0 | 26,400 | 0 | 0 | 8,377 | 14,380 | 0 | |
| TOTAL | 2,447 | 1,534,633 | 154,509 | 2,149 | 979 | 24 | 1,937,031 | 4,243 | 1,249 | 244,759 | 945,571 | 5 | |

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)⁴

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | |
|---------------|---------------------------------|------------------|----------------|---------------|---------------|--------------|------------------|--------------|---------------|---------------|--------------|
| | MOJAVE DIVISION | | | | | | | | | | |
| | Reach 18A | | Reach 19 | | | | Reach 20A | | | | |
| | AVEK | AVEK | Metropolitan | Mojave | Santa Barbara | Santa Clara | AVEK | Metropolitan | Mojave | Palmdale | Santa Clara |
| [152] | [153] | [154] | [155] | [156] | [157] | [158] | [159] | [160] | [161] | [162] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 1,223 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 7,622 | 0 | 0 | 0 | 0 | 420 | 0 | 0 | 0 | 0 |
| 1976 | 3,808 | 23,063 | 0 | 0 | 0 | 0 | 471 | 0 | 0 | 0 | 0 |
| 1977 | 1,231 | 8,927 | 0 | 0 | 0 | 0 | 773 | 0 | 0 | 0 | 0 |
| 1978 | 1,321 | 36,333 | 0 | 0 | 0 | 0 | 5,549 | 0 | 0 | 0 | 0 |
| 1979 | 2,098 | 49,910 | 0 | 0 | 0 | 0 | 7,555 | 0 | 0 | 0 | 0 |
| 1980 | 2,610 | 61,534 | 0 | 0 | 0 | 0 | 7,605 | 0 | 0 | 0 | 0 |
| 1981 | 2,340 | 65,690 | 0 | 0 | 0 | 0 | 10,333 | 0 | 0 | 0 | 0 |
| 1982 | 1,669 | 41,127 | 0 | 0 | 0 | 0 | 7,313 | 0 | 0 | 0 | 0 |
| 1983 | 43 | 26,377 | 0 | 0 | 0 | 0 | 6,253 | 0 | 0 | 0 | 0 |
| 1984 | 90 | 22,462 | 0 | 0 | 0 | 0 | 9,558 | 0 | 0 | 0 | 0 |
| 1985 | 8 | 23,440 | 0 | 0 | 0 | 0 | 11,613 | 0 | 0 | 1,510 | 0 |
| 1986 | 8 | 16,898 | 0 | 0 | 0 | 0 | 13,808 | 0 | 0 | 3,041 | 0 |
| 1987 | 0 | 15,958 | 0 | 0 | 0 | 0 | 15,493 | 0 | 0 | 2,389 | 0 |
| 1988 | 0 | 13,471 | 0 | 0 | 0 | 0 | 17,117 | 0 | 0 | 366 | 0 |
| 1989 | 0 | 18,007 | 0 | 0 | 0 | 0 | 23,481 | 0 | 0 | 381 | 0 |
| 1990 | 0 | 17,281 | 0 | 0 | 0 | 0 | 25,843 | 0 | 0 | 282 | 0 |
| 1991 | 0 | 728 | 0 | 0 | 0 | 0 | 4,282 | 0 | 1,391 | 84 | 0 |
| 1992 | 0 | 7,238 | 0 | 0 | 0 | 0 | 18,518 | 0 | 1,310 | 185 | 0 |
| 1993 | 0 | 13,340 | 0 | 0 | 0 | 0 | 23,662 | 0 | 1,514 | 164 | 0 |
| 1994 | 0 | 19,122 | 0 | 0 | 0 | 0 | 25,250 | 0 | 1,399 | 299 | 0 |
| 1995 | 0 | 20,222 | 0 | 0 | 0 | 0 | 22,385 | 0 | 1,227 | 328 | 0 |
| 1996 | 0 | 23,919 | 0 | 0 | 0 | 0 | 26,979 | 0 | 1,316 | 354 | 0 |
| 1997 | 0 | 28,834 | 0 | 64 | 0 | 0 | 27,999 | 0 | 1,272 | 313 | 0 |
| 1998 | 0 | 22,466 | 0 | 1,345 | 0 | 0 | 25,985 | 0 | 0 | 195 | 0 |
| 1999 | 0 | 30,944 | 0 | 1,439 | 0 | 0 | 32,409 | 0 | 0 | 377 | 0 |
| 2000 | 0 | 34,786 | 0 | 1,361 | 0 | 0 | 37,819 | 0 | 0 | 0 | 0 |
| 2001 | 0 | 24,370 | 0 | 1,385 | 0 | 0 | 33,216 | 0 | 0 | 0 | 0 |
| 2002 | 0 | 14,297 | 0 | 1,370 | 0 | 0 | 36,311 | 0 | 0 | 0 | 0 |
| 2003 | 0 | 12,145 | 0 | 1,285 | 0 | 0 | 39,532 | 0 | 0 | 0 | 0 |
| 2004 | 0 | 11,201 | 0 | 1,223 | 0 | 0 | 40,408 | 0 | 0 | 0 | 0 |
| 2005 | 11 | 11,804 | 0 | 1,051 | 0 | 0 | 41,496 | 0 | 0 | 0 | 0 |
| 2006 | 0 | 18,438 | 0 | 1,021 | 0 | 0 | 53,878 | 0 | 0 | 0 | 0 |
| 2007 | 0 | 22,916 | 0 | 1,176 | 0 | 0 | 47,639 | 0 | 0 | 0 | 0 |
| 2008 | 0 | 9,096 | 0 | 1,238 | 0 | 0 | 33,919 | 0 | 0 | 0 | 0 |
| 2009 | 0 | 5,717 | 0 | 1,345 | 0 | 0 | 35,402 | 0 | 0 | 0 | 0 |
| 2010 | 0 | 10,825 | 0 | 1,181 | 0 | 0 | 43,122 | 0 | 0 | 0 | 0 |
| 2011 | 0 | 55,707 | 0 | 2,184 | 0 | 0 | 35,543 | 0 | 0 | 0 | 0 |
| 2012 | 0 | 41,053 | 0 | 1,306 | 0 | 0 | 33,390 | 0 | 0 | 0 | 0 |
| 2013 | 16 | 13,414 | 0 | 1,095 | 0 | 0 | 33,507 | 0 | 0 | 0 | 0 |
| 2014 | 0 | 621 | 0 | 41 | 0 | 0 | 15,761 | 0 | 1,004 | 0 | 0 |
| 2015 | 0 | 0 | 0 | 0 | 0 | 0 | 12,447 | 0 | 1,023 | 0 | 0 |
| 2016 | 11 | 15,374 | 14 | 0 | 0 | 0 | 20,506 | 0 | 984 | 0 | 0 |
| 2017 | 318 | 66,255 | 7,526 | 71 | 5,781 | 2,000 | 19,123 | 2,500 | 858 | 0 | 5,500 |
| 2018 | 0 | 19,848 | 5,460 | 0 | 0 | 0 | 27,841 | 0 | 866 | 0 | 0 |
| 2019 | 0 | 22,015 | 0 | 0 | 0 | 0 | 33,254 | 0 | 761 | 186 | 0 |
| 2020 | 456 | 40,416 | 10,000 | 0 | 0 | 0 | 25,378 | 0 | 0 | 0 | 0 |
| 2021 | 501 | 44,340 | 10,000 | 0 | 0 | 0 | 19,200 | 0 | 0 | 0 | 0 |
| 2022 | 549 | 46,048 | 10,000 | 0 | 0 | 0 | 15,028 | 0 | 0 | 0 | 0 |
| 2023 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2024 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2025 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2026 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2027 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2028 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2029 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2030 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2031 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2032 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2033 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2034 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| 2035 | 606 | 41,842 | 10,000 | 0 | 0 | 0 | 16,504 | 0 | 0 | 0 | 0 |
| TOTAL | 24,966 | 1,700,768 | 173,000 | 21,181 | 5,781 | 2,000 | 1,318,926 | 2,500 | 14,925 | 10,454 | 5,500 |

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | |
|---------------|---------------------------------|------------|----------------|--------------|---------------|--------------|----------------|------------|-------------------|------------------------|---------------------|
| | MOJAVE DIVISION (continued) | | | | | | | | | | |
| | Reach 20B | | | Reach 21 | | | Reach 22A | | Reach 22B | | |
| | AVEK | Littlerock | Palmdale | AVEK | Littlerock | Palmdale | AVEK | Littlerock | AVEK ^e | Coachella ^f | Desert ^f |
| 1962 | [163] | [164] | [165] | [166] | [167] | [168] | [169] | [170] | [171] | [172] | [173] |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 338 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 290 | 0 | 0 | 0 | 0 | 5,800 | 9,000 |
| 1974 | 0 | 0 | 0 | 0 | 400 | 0 | 0 | 0 | 0 | 6,400 | 10,000 |
| 1975 | 0 | 0 | 0 | 0 | 520 | 0 | 0 | 0 | 0 | 7,000 | 11,000 |
| 1976 | 416 | 0 | 0 | 0 | 589 | 0 | 0 | 0 | 0 | 7,600 | 12,000 |
| 1977 | 271 | 0 | 0 | 0 | 111 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 934 | 0 | 0 | 0 | 208 | 0 | 0 | 0 | 0 | 10,084 | 15,300 |
| 1979 | 930 | 0 | 0 | 0 | 133 | 0 | 0 | 0 | 0 | 10,063 | 15,000 |
| 1980 | 655 | 0 | 0 | 0 | 191 | 0 | 3 | 0 | 0 | 10,884 | 17,000 |
| 1981 | 966 | 0 | 0 | 0 | 1,270 | 0 | 46 | 0 | 0 | 12,105 | 19,000 |
| 1982 | 8 | 0 | 0 | 0 | 0 | 0 | 174 | 0 | 0 | 13,326 | 21,000 |
| 1983 | 20 | 0 | 0 | 0 | 38 | 0 | 268 | 0 | 0 | 14,547 | 23,000 |
| 1984 | 2 | 0 | 0 | 0 | 1 | 0 | 550 | 0 | 0 | 15,768 | 25,000 |
| 1985 | 217 | 0 | 32 | 0 | 0 | 16 | 1,786 | 0 | 0 | 16,989 | 27,000 |
| 1986 | 0 | 0 | 45 | 0 | 163 | 10 | 1,735 | 0 | 0 | 18,210 | 29,000 |
| 1987 | 151 | 0 | 1,624 | 0 | 1,080 | 1,366 | 2,273 | 5 | 214 | 19,431 | 31,500 |
| 1988 | 281 | 0 | 1,261 | 0 | 419 | 143 | 3,210 | 0 | 0 | 20,652 | 34,000 |
| 1989 | 112 | 0 | 7,848 | 0 | 971 | 780 | 3,591 | 0 | 89 | 21,873 | 36,500 |
| 1990 | 84 | 0 | 8,292 | 0 | 1,747 | 34 | 3,988 | 0 | 10 | 23,100 | 38,100 |
| 1991 | 131 | 0 | 3,830 | 0 | 522 | 0 | 2,427 | 0 | 0 | 6,930 | 11,430 |
| 1992 | 650 | 0 | 3,850 | 0 | 251 | 0 | 3,859 | 0 | 0 | 10,427 | 17,197 |
| 1993 | 996 | 0 | 7,597 | 0 | 734 | 0 | 5,098 | 0 | 0 | 0 | 0 |
| 1994 | 124 | 0 | 8,119 | 0 | 1,098 | 0 | 4,657 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 6,633 | 0 | 480 | 0 | 4,679 | 0 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 11,080 | 0 | 494 | 0 | 5,458 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 11,548 | 0 | 444 | 0 | 5,549 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 8,557 | 0 | 404 | 0 | 4,468 | 0 | 0 | 0 | 0 |
| 1999 | 36 | 0 | 12,901 | 0 | 342 | 0 | 5,684 | 0 | 0 | 0 | 0 |
| 2000 | 80 | 0 | 9,060 | 5,002 | 0 | 0 | 5,890 | 0 | 0 | 0 | 0 |
| 2001 | 282 | 0 | 10,427 | 0 | 0 | 0 | 4,989 | 0 | 0 | 0 | 0 |
| 2002 | 1,662 | 0 | 18,496 | 0 | 0 | 0 | 5,404 | 0 | 497 | 0 | 0 |
| 2003 | 2,289 | 0 | 11,547 | 0 | 0 | 0 | 6,063 | 0 | 0 | 0 | 0 |
| 2004 | 1,774 | 0 | 12,139 | 0 | 0 | 23 | 6,095 | 0 | 253 | 0 | 0 |
| 2005 | 1,336 | 0 | 11,678 | 0 | 0 | 34 | 5,184 | 0 | 0 | 0 | 0 |
| 2006 | 1,415 | 0 | 12,487 | 0 | 0 | 5 | 6,653 | 0 | 0 | 0 | 0 |
| 2007 | 1,349 | 0 | 19,609 | 0 | 0 | 25 | 7,711 | 0 | 588 | 0 | 0 |
| 2008 | 792 | 25 | 14,255 | 0 | 0 | 0 | 4,756 | 0 | 0 | 0 | 0 |
| 2009 | 366 | 42 | 15,339 | 0 | 0 | 0 | 4,185 | 0 | 0 | 0 | 0 |
| 2010 | 643 | 0 | 10,969 | 0 | 0 | 0 | 3,899 | 0 | 0 | 0 | 0 |
| 2011 | 507 | 0 | 9,881 | 0 | 0 | 0 | 2,289 | 0 | 0 | 0 | 0 |
| 2012 | 901 | 0 | 16,397 | 0 | 0 | 0 | 2,328 | 0 | 0 | 0 | 0 |
| 2013 | 693 | 0 | 10,567 | 0 | 0 | 0 | 3,227 | 0 | 118 | 0 | 0 |
| 2014 | 744 | 0 | 8,406 | 0 | 0 | 0 | 1,318 | 0 | 88 | 0 | 0 |
| 2015 | 447 | 0 | 5,836 | 0 | 0 | 0 | 1,298 | 0 | 116 | 0 | 0 |
| 2016 | 677 | 0 | 10,516 | 0 | 0 | 0 | 3,155 | 0 | 144 | 0 | 0 |
| 2017 | 1,204 | 0 | 13,858 | 0 | 0 | 0 | 2,231 | 0 | 0 | 0 | 0 |
| 2018 | 1,551 | 0 | 10,210 | 0 | 0 | 0 | 2,212 | 0 | 0 | 0 | 0 |
| 2019 | 1,175 | 0 | 16,398 | 0 | 0 | 0 | 2,745 | 0 | 2,000 | 0 | 0 |
| 2020 | 17,976 | 0 | 19,543 | 0 | 0 | 0 | 3,552 | 0 | 52 | 0 | 0 |
| 2021 | 19,772 | 0 | 19,543 | 0 | 0 | 0 | 3,912 | 0 | 60 | 0 | 0 |
| 2022 | 21,748 | 0 | 19,543 | 0 | 0 | 0 | 4,300 | 0 | 64 | 0 | 0 |
| 2023 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2024 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2025 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2026 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2027 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2028 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2029 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2030 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2031 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2032 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2033 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2034 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| 2035 | 23,924 | 0 | 19,543 | 0 | 0 | 0 | 4,728 | 0 | 76 | 0 | 0 |
| TOTAL | 397,379 | 67 | 653,980 | 5,002 | 13,238 | 2,436 | 214,363 | 5 | 5,281 | 251,189 | 402,027 |

^e 1988 advance allocation.^f In accordance with the exchange agreement between the noted agencies, Metropolitan assumed responsibility for payment of variable OMP&R costs on the exchange water in reaches beyond Reach 22B, and Desert and Coachella for such costs from the Delta through Reach 22B. The adjustment in deliveries in Reach 22B provides for compliance with provisions for the repayment of costs under the agreement. In 1993 and after, the exchange takes place in Reach 26A.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | |
|---------------|---------------------------------|------------------|----------------|---------------|------------|----------------|---------------------------|---------------|----------------|
| | MOJAVE DIVISION (continued) | | | | | | | | |
| | Reach 22B (continued) | | | Reach 23 | | Reach 24 | | | |
| | Littlerock | Metropolitan | Mojave | Santa Barbara | Mojave | Crestline | Metropolitan ^f | Mojave | San Bernardino |
| [174] | [175] | [176] | [177] | [178] | [179] | [180] | [181] | [182] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 55 | 0 | 0 | 464 | 0 | 0 | 0 |
| 1973 | 0 | (14,800) | 0 | 0 | 0 | 389 | 0 | 0 | 0 |
| 1974 | 0 | (16,400) | 0 | 0 | 14 | 627 | 0 | 0 | 0 |
| 1975 | 0 | (18,000) | 0 | 0 | 0 | 825 | 0 | 0 | 0 |
| 1976 | 0 | (19,600) | 0 | 0 | 0 | 1,002 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 22 | 0 | 58 | 1,109 | 0 | 0 | 0 |
| 1978 | 0 | (25,384) | 0 | 0 | 0 | 1,209 | 0 | 0 | 0 |
| 1979 | 0 | (25,063) | 4,000 | 0 | 0 | 1,260 | 0 | 0 | 0 |
| 1980 | 0 | (27,884) | 4,000 | 0 | 0 | 1,239 | 0 | 0 | 0 |
| 1981 | 0 | (31,105) | 4,000 | 0 | 0 | 1,485 | 0 | 0 | 0 |
| 1982 | 0 | (34,326) | 10,500 | 0 | 0 | 1,238 | 0 | 0 | 0 |
| 1983 | 0 | (37,547) | 0 | 0 | 0 | 911 | 0 | 0 | 0 |
| 1984 | 0 | (40,768) | 0 | 0 | 0 | 1,128 | 0 | 0 | 0 |
| 1985 | 0 | (43,989) | 0 | 0 | 0 | 1,422 | 0 | 0 | 0 |
| 1986 | 0 | (47,210) | 0 | 0 | 0 | 1,506 | 0 | 0 | 0 |
| 1987 | 0 | (50,931) | 17 | 0 | 0 | 1,849 | 0 | 0 | 0 |
| 1988 | 0 | (54,652) | 9 | 0 | 0 | 2,006 | 0 | 0 | 0 |
| 1989 | 0 | (58,373) | 0 | 0 | 200 | 2,170 | 0 | 0 | 0 |
| 1990 | 0 | (61,200) | 0 | 0 | 0 | 1,827 | 0 | 0 | 0 |
| 1991 | 0 | (18,360) | 0 | 0 | 0 | 849 | 0 | 2,032 | 0 |
| 1992 | 0 | (27,624) | 42 | 0 | 0 | 519 | 0 | 9,334 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 439 | 0 | 10,000 | 0 |
| 1994 | 0 | 0 | 14,634 | 0 | 0 | 785 | 0 | 819 | 0 |
| 1995 | 0 | 0 | 7,495 | 0 | 0 | 409 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 6,111 | 0 | 0 | 485 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 9,038 | 0 | 0 | 651 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 2,580 | 0 | 0 | 187 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 6,705 | 0 | 0 | 1,132 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 10,019 | 0 | 0 | 1,194 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 3,048 | 0 | 0 | 1,057 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 2,976 | 0 | 0 | 2,189 | 0 | 0 | 0 |
| 2003 | 0 | 7,625 | 13,150 | 0 | 0 | 1,563 | 17,249 | 0 | 0 |
| 2004 | 0 | 0 | 11,953 | 0 | 0 | 2,006 | 0 | 0 | 0 |
| 2005 | 0 | 5,942 | 12,169 | 0 | 0 | 807 | 14,058 | 341 | 0 |
| 2006 | 0 | 0 | 32,993 | 0 | 0 | 641 | 0 | 0 | 0 |
| 2007 | 0 | 0 | 27,684 | 0 | 0 | 1,768 | 0 | 17,249 | 710 |
| 2008 | 0 | 0 | 20,479 | 0 | 0 | 848 | 0 | 3,679 | 411 |
| 2009 | 0 | 0 | 20,214 | 0 | 0 | 894 | 0 | 7,488 | 149 |
| 2010 | 0 | 0 | 27,640 | 0 | 0 | 357 | 0 | 9,331 | 26 |
| 2011 | 0 | 30,907 | 2,915 | 0 | 0 | 474 | 14,141 | 0 | 31 |
| 2012 | 0 | 12,025 | 9,938 | 0 | 0 | 624 | 2,994 | 0 | 0 |
| 2013 | 0 | 0 | 5,888 | 0 | 0 | 1,368 | 0 | 500 | 0 |
| 2014 | 0 | 0 | 2,536 | 0 | 0 | 1,233 | 0 | 0 | 202 |
| 2015 | 0 | 0 | 7,807 | 0 | 0 | 1,253 | 0 | 0 | 0 |
| 2016 | 0 | 0 | 12,949 | 1,125 | 0 | 1,084 | 0 | 8,350 | 120 |
| 2017 | 0 | 0 | 23,020 | 0 | 0 | .881 | 0 | 10,866 | 219 |
| 2018 | 0 | 0 | 4,605 | 0 | 0 | 991 | 0 | 0 | 237 |
| 2019 | 35 | 0 | 15,339 | 0 | 0 | 1,832 | 0 | 0 | 190 |
| 2020 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2021 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2022 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2023 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2024 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2025 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2026 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2027 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2028 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2029 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2030 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2031 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2032 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2033 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2034 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| 2035 | 0 | 0 | 30,030 | 0 | 0 | 3,480 | 0 | 0 | 400 |
| TOTAL | 35 | (596,717) | 817,010 | 1,125 | 272 | 107,866 | 48,442 | 79,989 | 8,695 |

^fIn accordance with the exchange agreement between the noted agencies, Metropolitan assumed responsibility for payment of variable OMP&R costs on the exchange water in reaches beyond Reach 22B, and Desert and Coachella for such costs from the Delta through Reach 22B. The adjustment in deliveries in Reach 22B provides for compliance with provisions for the repayment of costs under the agreement. In 1993 and after, the exchange takes place in Reach 26A.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|---------------------------------|---------------------|---------------------------|-----------------------------|----------------|---------------|----------------|---------------|-------------------|---------------|
| | SANTA ANA DIVISION (continued) | | | | | | | | | |
| | Reach 26A | | | | | Reach 28G | | Reach 28H | | Reach 28J |
| | Coachella ^f | Desert ^f | Metropolitan ^f | San Bernardino ^g | San Gabriel | Metropolitan | Coachella | Desert | Metropolitan | Coachella |
| [183] | [184] | [185] | [186] | [187] | [188] | [189] | [190] | [191] | [192] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 1,275 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 444 | 32,426 | 0 | 18,942 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 84,981 | 16,605 | 612 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 169,960 | 13,865 | 5,450 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 215,312 | 12,273 | 6,071 | 0 | 0 | 0 | 55 | 0 |
| 1977 | 0 | 0 | 64,823 | 24,833 | 8,996 | 0 | 0 | 0 | 43 | 0 |
| 1978 | 0 | 0 | 297,708 | 4,055 | 7,771 | 0 | 0 | 0 | 48 | 0 |
| 1979 | 0 | 0 | 260,903 | 18 | 290 | 0 | 0 | 0 | 1,290 | 0 |
| 1980 | 0 | 0 | 300,345 | 0 | 1,085 | 0 | 0 | 0 | 3,013 | 0 |
| 1981 | 0 | 0 | 395,678 | 16,021 | 3,619 | 0 | 0 | 0 | 4,365 | 0 |
| 1982 | 0 | 0 | 214,566 | 8,409 | 12,599 | 0 | 0 | 0 | 3,961 | 0 |
| 1983 | 0 | 0 | 175,288 | 5,994 | 734 | 0 | 0 | 0 | 6,645 | 0 |
| 1984 | 0 | 0 | 122,311 | 5,556 | 7,656 | 0 | 0 | 0 | 109,743 | 0 |
| 1985 | 0 | 0 | 147,599 | 7,390 | 5,028 | 0 | 0 | 0 | 182,781 | 0 |
| 1986 | 0 | 0 | 215,265 | 6,421 | 9,454 | 0 | 0 | 0 | 131,439 | 0 |
| 1987 | 0 | 0 | 175,012 | 18,751 | 10,630 | 0 | 0 | 0 | 144,743 | 0 |
| 1988 | 0 | 0 | 247,101 | 21,386 | 8,948 | 0 | 0 | 0 | 199,641 | 0 |
| 1989 | 0 | 0 | 326,217 | 20,782 | 12,839 | 0 | 0 | 0 | 247,430 | 0 |
| 1990 | 0 | 0 | 399,387 | 18,831 | 16,649 | 0 | 0 | 0 | 257,796 | 0 |
| 1991 | 0 | 0 | 107,182 | 3,661 | 5,399 | 0 | 0 | 0 | 38,832 | 0 |
| 1992 | 0 | 0 | 219,524 | 3,358 | 7,908 | 0 | 0 | 0 | 85,341 | 0 |
| 1993 | 23,100 | 38,100 | 98,291 | 4,361 | 14,397 | 0 | 0 | 0 | 61,841 | 0 |
| 1994 | 14,102 | 23,257 | 192,979 | 9,135 | 15,230 | 0 | 0 | 0 | 134,262 | 0 |
| 1995 | 23,100 | 38,100 | 107,299 | 696 | 12,922 | 0 | 0 | 0 | 117,762 | 0 |
| 1996 | 62,219 | 102,622 | 73,438 | 6,064 | 15,989 | 0 | 0 | 0 | 144,906 | 0 |
| 1997 | 58,100 | 53,100 | 157,215 | 9,654 | 18,175 | 0 | 0 | 0 | 107,853 | 0 |
| 1998 | 78,100 | 58,100 | 36,770 | 1,878 | 9,310 | 0 | 6,582 | 7,708 | 77,473 | 1,027 |
| 1999 | 50,480 | 58,100 | 139,752 | 12,874 | 21,729 | 0 | 0 | 0 | 206,689 | 0 |
| 2000 | 42,323 | 58,234 | 326,647 | 0 | 15,140 | 0 | 0 | 0 | 379,713 | 0 |
| 2001 | 9,100 | 15,010 | 284,007 | 0 | 2,360 | 0 | 0 | 0 | 260,984 | 0 |
| 2002 | 16,755 | 27,640 | 301,700 | 26,399 | 24,851 | 0 | 0 | 0 | 340,635 | 0 |
| 2003 | 14,443 | 23,819 | 464,719 | 5,000 | 21,934 | 0 | 0 | 0 | 246,485 | 0 |
| 2004 | 15,465 | 21,190 | 428,316 | 40,000 | 12,541 | 0 | 0 | 0 | 357,995 | 0 |
| 2005 | 34,356 | 49,089 | 361,976 | 15,834 | 13,984 | 0 | 0 | 0 | 242,245 | 0 |
| 2006 | 121,100 | 50,000 | 404,594 | 20,000 | 16,284 | 0 | 0 | 0 | 342,734 | 0 |
| 2007 | 66,007 | 27,253 | 370,971 | 10,022 | 4,024 | 0 | 7,221 | 2,981 | 271,874 | 0 |
| 2008 | 40,171 | 24,643 | 210,520 | 187 | 7,212 | 0 | 6,620 | 1,785 | 175,460 | 0 |
| 2009 | 45,074 | 17,872 | 138,216 | 0 | 11,520 | 0 | 948 | 391 | 126,265 | 0 |
| 2010 | 53,866 | 18,398 | 463,654 | 20,008 | 19,180 | 0 | 30,415 | 12,257 | 129,145 | 1,311 |
| 2011 | 84,566 | 34,076 | 610,454 | 368 | 23,591 | 0 | 5,713 | 2,303 | 213,215 | 0 |
| 2012 | 98,793 | 33,806 | 362,047 | 50,723 | 22,058 | 0 | 16,575 | 8,266 | 86,266 | 2,219 |
| 2013 | 33,551 | 17,611 | 234,576 | 1,120 | 9,252 | 0 | 28,232 | 3,180 | 45,039 | 4,756 |
| 2014 | 9,966 | 3,049 | 95,402 | 1,345 | 1,200 | 0 | 1,103 | 0 | 0 | 1,801 |
| 2015 | 26,600 | 67 | 110,774 | 2,100 | 5,760 | 0 | 10,996 | 9,611 | 25,883 | 0 |
| 2016 | 59,654 | 21,893 | 427,649 | 3,974 | 16,088 | 0 | 9,768 | 0 | 72,825 | 0 |
| 2017 | 67,648 | 26,819 | 721,554 | 2,560 | 22,056 | 0 | 4,301 | 0 | 285,400 | 11,959 |
| 2018 | 112,282 | 47,746 | 176,825 | 3,654 | 17,055 | 0 | 24,386 | 0 | 135,252 | 2,421 |
| 2019 | 44,087 | 13,937 | 588,121 | 356 | 19,708 | 0 | 0 | 0 | 224,671 | 0 |
| 2020 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2021 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2022 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2023 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2024 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2025 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2026 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2027 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2028 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2029 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2030 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2031 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2032 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2033 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2034 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| 2035 | 83,010 | 33,450 | 260,893 | 0 | 17,280 | 0 | 0 | 0 | 303,009 | 0 |
| TOTAL | 2,633,168 | 1,438,731 | 16,202,360 | 490,222 | 801,768 | 18,942 | 152,860 | 48,482 | 11,078,182 | 25,494 |

^f In accordance with the exchange agreement between the noted agencies, Metropolitan assumed responsibility for payment of variable OMP&R costs on the exchange water in reaches beyond Reach 22B, and Desert and Coachella for such costs from the Delta through Reach 22B. The adjustment in deliveries in Reach 22B provides for compliance with provisions for the repayment of costs under the agreement. In 1993 and after, the exchange takes place in Reach 26A.

^g Includes 1,650 acre-feet recaptured from groundwater storage in 1982, 10,000 acre-feet in 1987, and 8,749 acre-feet in 1988. This water was stored under DWR's Ground Water Demonstration Program.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|----------------------|---------------------------------|------------------|--------------|----------------|------------------|----------------|----------------|---------------|----------------|--|
| | SANTA ANA DIVISION (continued) | | | | | | | | | |
| | Reach 28J | | Reach EBX1 | | REACH EBX2C | Reach EBX3A | Reach EBX4B-G | Reach EBX4B | | |
| | Desert | Metropolitan | Coachella | Metropolitan | San Bernardino | San Bernardino | San Bernardino | San Gorgonio | San Gorgonio | |
| [193] | [194] | [195] | [196] | [197] | [198] | [199] | [200] | [201] | | |
| 1962 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1963 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1964 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1965 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1966 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1967 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1968 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1969 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1970 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1971 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1972 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1973 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1974 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1975 0 | 251 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1976 0 | 2,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1977 0 | 2,442 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1978 0 | 64,054 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1979 0 | 94,353 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1980 0 | 91,532 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1981 0 | 149,405 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1982 0 | 155,629 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1983 0 | 41,616 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1984 0 | 5,672 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1985 0 | 6,538 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1986 0 | 30,071 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1987 0 | 26,315 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1988 0 | 22,209 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1989 0 | 51,462 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1990 0 | 36,060 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1991 0 | 5,958 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1992 0 | 12,223 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1993 0 | 4,588 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1994 0 | 4,725 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1995 0 | 21,099 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1996 0 | 12,418 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1997 0 | 47,777 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1998 4,839 | 50,411 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1999 0 | 8,163 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2000 0 | 7,864 | 0 | 5,466 | 18,399 | 0 | 0 | 0 | 0 | 0 | |
| 2001 0 | 33,414 | 0 | 0 | 26,488 | 0 | 0 | 0 | 0 | 0 | |
| 2002 0 | 41,552 | 0 | 1,427 | 37,069 | 0 | 0 | 0 | 0 | 0 | |
| 2003 0 | 50,776 | 0 | 74,496 | 16,703 | 1,793 | 2,617 | 0 | 116 | | |
| 2004 0 | 20,437 | 0 | 120,338 | 13,229 | 1,430 | 2,371 | 0 | 841 | | |
| 2005 0 | 114,499 | 8,163 | 153,700 | 12,715 | 966 | 2,035 | 0 | 692 | | |
| 2006 0 | 32,242 | 0 | 147,432 | 11,832 | 885 | 2,614 | 3,471 | 807 | | |
| 2007 0 | 48,923 | 0 | 94,208 | 38,151 | 3,130 | 5,103 | 3,758 | 177 | | |
| 2008 0 | 10,432 | 0 | 16,745 | 25,038 | 686 | 8,823 | 3,863 | 1,042 | | |
| 2009 0 | 5,849 | 0 | 18,314 | 25,041 | 4,090 | 10,066 | 4,499 | 1,898 | | |
| 2010 528 | 65,439 | 0 | 0 | 19,190 | 617 | 9,538 | 2,555 | 5,685 | | |
| 2011 0 | 51,638 | 0 | 0 | 19,578 | 699 | 9,384 | 1,213 | 9,290 | | |
| 2012 3,029 | 36,875 | 0 | 0 | 27,534 | 3,177 | 9,604 | 0 | 11,010 | | |
| 2013 0 | 40,494 | 0 | 0 | 19,850 | 3,034 | 8,081 | 0 | 9,445 | | |
| 2014 0 | 998 | 0 | 0 | 4,610 | 375 | 4,424 | 0 | 5,044 | | |
| 2015 1,539 | 977 | 0 | 0 | 15,970 | 382 | 5,928 | 0 | 3,481 | | |
| 2016 0 | 30,785 | 0 | 0 | 46,122 | 3,649 | 8,431 | 0 | 10,816 | | |
| 2017 4,817 | 59,375 | 0 | 0 | 52,218 | 6,682 | 16,817 | 0 | 14,946 | | |
| 2018 0 | 13,336 | 0 | 0 | 26,108 | 4,241 | 9,730 | 0 | 12,622 | | |
| 2019 0 | 26,481 | 0 | 0 | 66,430 | 5,798 | 3,487 | 0 | 9,715 | | |
| 2020 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2021 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2022 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2023 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2024 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2025 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2026 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2027 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2028 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2029 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2030 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2031 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2032 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2033 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2034 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| 2035 0 | 0 | 0 | 0 | 61,160 | 0 | 0 | 0 | 10,380 | | |
| TOTAL | 14,752 | 1,639,357 | 8,163 | 632,126 | 1,500,835 | 41,634 | 119,053 | 19,359 | 263,707 | |

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | |
|------------------------|---------------------------------|------------|----------------------------|---------------|---------------|---------------|---------------------------|
| | WEST BRANCH | | | | | | |
| | Reach 29A | Reach 29F | Reach 29H | | Reach 30 | | |
| | AVEK | AVEK | Santa Clarita ^d | Ventura | Coachella | Desert | Metropolitan ^h |
| [202] | [203] | [204] | [205] | [206] | [207] | [208] | |
| 1962 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 0 | 53 | 0 | 0 | 0 | 0 | 0 | 71,938 |
| 1973 0 | 20 | 0 | 0 | 0 | 0 | 0 | 155,297 |
| 1974 0 | 36 | 0 | 0 | 0 | 0 | 0 | 209,136 |
| 1975 0 | 26 | 0 | 0 | 0 | 0 | 0 | 374,280 |
| 1976 0 | 24 | 0 | 0 | 0 | 0 | 0 | 420,684 |
| 1977 0 | 0 | 0 | 0 | 0 | 0 | 0 | 122,447 |
| 1978 0 | 0 | 0 | 0 | 0 | 0 | 0 | 171,139 |
| 1979 0 | 0 | 0 | 0 | 0 | 0 | 0 | 145,591 |
| 1980 0 | 0 | 0 | 0 | 0 | 0 | 0 | 164,721 |
| 1981 0 | 0 | 0 | 0 | 0 | 0 | 0 | 277,503 |
| 1982 0 | 0 | 0 | 0 | 0 | 0 | 0 | 351,362 |
| 1983 0 | 0 | 0 | 0 | 0 | 0 | 0 | 157,519 |
| 1984 0 | 0 | 0 | 0 | 0 | 0 | 0 | 260,624 |
| 1985 0 | 0 | 0 | 0 | 0 | 0 | 0 | 390,696 |
| 1986 0 | 0 | 0 | 0 | 0 | 0 | 0 | 379,275 |
| 1987 0 | 0 | 0 | 0 | 0 | 0 | 0 | 417,285 |
| 1988 0 | 0 | 0 | 0 | 0 | 0 | 0 | 488,265 |
| 1989 0 | 0 | 0 | 0 | 0 | 0 | 0 | 589,962 |
| 1990 0 | 0 | 0 | 0 | 4,836 | 0 | 0 | 764,380 |
| 1991 0 | 0 | 0 | 988 | 0 | 0 | 0 | 257,835 |
| 1992 0 | 0 | 0 | 0 | 0 | 0 | 0 | 420,849 |
| 1993 0 | 6 | 0 | 0 | 0 | 0 | 0 | 437,470 |
| 1994 0 | 0 | 0 | 0 | 0 | 0 | 0 | 475,900 |
| 1995 0 | 0 | 0 | 0 | 0 | 0 | 0 | 139,882 |
| 1996 0 | 0 | 0 | 0 | 0 | 0 | 0 | 267,618 |
| 1997 0 | 11 | 0 | 0 | 10,240 | 16,890 | 0 | 271,379 |
| 1998 0 | 7 | 0 | 0 | 0 | 0 | 0 | 187,277 |
| 1999 0 | 0 | 0 | 0 | 0 | 0 | 0 | 327,001 |
| 2000 0 | 0 | 0 | 2,200 | 0 | 0 | 0 | 632,991 |
| 2001 0 | 0 | 0 | 0 | 0 | 0 | 0 | 444,764 |
| 2002 0 | 0 | 0 | 3,148 | 0 | 0 | 0 | 723,605 |
| 2003 0 | 0 | 0 | 6,768 | 3,150 | 0 | 0 | 678,964 |
| 2004 0 | 0 | 0 | 0 | 4,047 | 0 | 0 | 797,294 |
| 2005 0 | 0 | 0 | 0 | 0 | 0 | 0 | 538,839 |
| 2006 0 | 0 | 0 | 0 | 0 | 0 | 0 | 574,679 |
| 2007 0 | 0 | 0 | 0 | 1,890 | 0 | 0 | 711,831 |
| 2008 0 | 0 | 0 | 0 | 1,980 | 0 | 0 | 485,156 |
| 2009 0 | 0 | 0 | 0 | 3,150 | 0 | 0 | 589,294 |
| 2010 0 | 0 | 0 | 0 | 3,150 | 0 | 0 | 376,877 |
| 2011 0 | 0 | 0 | 0 | 2,520 | 0 | 0 | 375,921 |
| 2012 0 | 24 | 0 | 0 | 3,150 | 0 | 0 | 553,244 |
| 2013 0 | 47 | 0 | 0 | 2,242 | 0 | 0 | 565,849 |
| 2014 0 | 0 | 0 | 0 | 0 | 0 | 0 | 275,992 |
| 2015 0 | 0 | 0 | 0 | 630 | 0 | 0 | 435,892 |
| 2016 0 | 0 | 0 | 1,890 | 0 | 0 | 0 | 509,583 |
| 2017 510 | 0 | 0 | 2,678 | 0 | 0 | 0 | 354,401 |
| 2018 0 | 0 | 0 | 0 | 0 | 0 | 0 | 326,408 |
| 2019 0 | 0 | 0 | 17,211 | 0 | 0 | 0 | 350,423 |
| 2020 456 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2021 501 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2022 549 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2023 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2024 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2025 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2026 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2027 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2028 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2029 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2030 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2031 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2032 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2033 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2034 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| 2035 606 | 0 | 0 | 1,890 | 0 | 0 | 0 | 482,998 |
| TOTAL | 9,894 | 254 | 6,768 | 89,100 | 10,240 | 16,890 | 26,727,290 |

^d Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.^h Deliveries exclude 6,171 acre-feet of 1982 exchange water.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|---------------------------------|---------------|----------------------------|----------------|----------------|---------------|--------------------------|------------------|--------------|--|
| | WEST BRANCH (continued) | | | | COASTAL BRANCH | | | | | |
| | Reach 30 (continued) | | | Reach 31A | | | Kern | | | |
| Calendar Year | San Bernardino | Santa Barbara | Santa Clarita ^d | Ventura | AVEK | Dudley Ridge | Municipal and Industrial | Agricultural | Kings | |
| 1962 | [209] | [210] | [211] | [212] | [213] | [214] | [215] | [216] | [217] | |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71,657 | 0 | |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52,094 | 0 | |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71,910 | 0 | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 98,481 | 0 | |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 107,850 | 0 | |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69,227 | 0 | |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68,474 | 0 | |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74,516 | 0 | |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78,358 | 0 | |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35,504 | 0 | |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 81,242 | 0 | |
| 1979 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 104,017 | 0 | |
| 1980 | 0 | 0 | 1,210 | 0 | 0 | 0 | 0 | 97,497 | 0 | |
| 1981 | 0 | 0 | 5,761 | 0 | 0 | 0 | 0 | 97,054 | 0 | |
| 1982 | 0 | 0 | 9,516 | 0 | 0 | 0 | 0 | 83,076 | 0 | |
| 1983 | 0 | 0 | 9,476 | 0 | 0 | 0 | 0 | 87,859 | 0 | |
| 1984 | 0 | 0 | 11,477 | 0 | 0 | 0 | 0 | 119,098 | 0 | |
| 1985 | 0 | 0 | 12,401 | 0 | 0 | 0 | 0 | 110,124 | 0 | |
| 1986 | 0 | 0 | 13,928 | 0 | 0 | 0 | 0 | 118,298 | 0 | |
| 1987 | 0 | 0 | 16,167 | 0 | 0 | 0 | 0 | 116,259 | 0 | |
| 1988 | 0 | 0 | 18,904 | 0 | 0 | 0 | 0 | 109,435 | 0 | |
| 1989 | 0 | 0 | 21,719 | 0 | 0 | 0 | 0 | 102,156 | 0 | |
| 1990 | 0 | 0 | 22,139 | 0 | 0 | 0 | 0 | 103,362 | 0 | |
| 1991 | 0 | 1,240 | 3,846 | 0 | 0 | 0 | 0 | 780 | 0 | |
| 1992 | 0 | 0 | 14,812 | 0 | 0 | 0 | 0 | 73,748 | 0 | |
| 1993 | 0 | 0 | 13,787 | 0 | 0 | 0 | 0 | 90,764 | 0 | |
| 1994 | 0 | 0 | 14,919 | 0 | 0 | 0 | 200 | 77,536 | 0 | |
| 1995 | 0 | 0 | 17,747 | 0 | 0 | 0 | 0 | 85,050 | 0 | |
| 1996 | 0 | 0 | 18,448 | 0 | 0 | 0 | 0 | 100,578 | 0 | |
| 1997 | 0 | 0 | 22,842 | 1,850 | 0 | 0 | 0 | 97,020 | 0 | |
| 1998 | 0 | 0 | 19,782 | 1,850 | 0 | 0 | 0 | 86,879 | 0 | |
| 1999 | 0 | 0 | 28,813 | 1,850 | 0 | 0 | 0 | 92,095 | 0 | |
| 2000 | 0 | 0 | 31,085 | 1,850 | 0 | 0 | 0 | 85,215 | 0 | |
| 2001 | 0 | 0 | 30,701 | 1,850 | 0 | 0 | 0 | 63,448 | 0 | |
| 2002 | 8,601 | 0 | 42,080 | 1,850 | 0 | 0 | 0 | 65,055 | 0 | |
| 2003 | 0 | 0 | 44,967 | 1,850 | 0 | 0 | 0 | 65,691 | 0 | |
| 2004 | 0 | 0 | 47,463 | 1,203 | 0 | 0 | 0 | 66,498 | 0 | |
| 2005 | 0 | 0 | 36,747 | 1,665 | 0 | 4,684 | 0 | 68,190 | 0 | |
| 2006 | 0 | 0 | 40,017 | 1,850 | 0 | 0 | 0 | 85,214 | 0 | |
| 2007 | 0 | 0 | 45,919 | 1,110 | 0 | 0 | 0 | 93,954 | 49 | |
| 2008 | 0 | 0 | 42,878 | 1,818 | 0 | 0 | 17,059 | 68,385 | 0 | |
| 2009 | 0 | 0 | 38,784 | 741 | 0 | 0 | 0 | 83,255 | 0 | |
| 2010 | 0 | 0 | 31,288 | 925 | 0 | 2,967 | 0 | 81,047 | 276 | |
| 2011 | 0 | 0 | 31,445 | 1,480 | 0 | 200 | 0 | 86,594 | 238 | |
| 2012 | 0 | 0 | 36,153 | 1,203 | 33,511 | 0 | 0 | 50,050 | 0 | |
| 2013 | 0 | 0 | 44,126 | 648 | 0 | 0 | 0 | 82,887 | 0 | |
| 2014 | 0 | 0 | 29,448 | 93 | 0 | 0 | 0 | 74,406 | 0 | |
| 2015 | 0 | 0 | 29,189 | 370 | 0 | 7,500 | 0 | 71,616 | 0 | |
| 2016 | 0 | 0 | 31,888 | 1,110 | 1,489 | 0 | 0 | 86,363 | 0 | |
| 2017 | 0 | 0 | 47,912 | 11,573 | 0 | 500 | 0 | 94,876 | 1,704 | |
| 2018 | 0 | 0 | 42,835 | 648 | 0 | 2,542 | 0 | 86,401 | 0 | |
| 2019 | 0 | 0 | 53,115 | 11,787 | 0 | 0 | 0 | 96,676 | 561 | |
| 2020 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2021 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2022 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2023 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2024 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2025 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2026 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2027 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2028 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2029 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2030 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2031 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2032 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2033 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2034 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| 2035 | 0 | 0 | 55,120 | 10,110 | 0 | 0 | 0 | 52,810 | 183 | |
| TOTAL | 8,601 | 1,240 | 1,957,661 | 212,934 | 35,000 | 18,393 | 17,259 | 5,162,779 | 5,756 | |

^d Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-5A Annual Water Quantities Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | |
|---------------|---------------------------------|--------------|-----------------|----------------|--------------------|--------------------|--|
| | COASTAL BRANCH (continued) | | | | | | |
| | Reach 31A (continued) | | Reach 33A | | | | |
| | Santa Clarita ^d | Tulare | San Luis Obispo | Santa Barbara | Total | Grand Total | |
| [218] | [219] | [220] | [221] | [222] | [223] | | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 8,906 | |
| 1963 | 0 | 0 | 0 | 0 | 0 | 12,645 | |
| 1964 | 0 | 0 | 0 | 0 | 0 | 20,911 | |
| 1965 | 0 | 0 | 0 | 0 | 0 | 34,026 | |
| 1966 | 0 | 0 | 0 | 0 | 0 | 54,913 | |
| 1967 | 0 | 0 | 0 | 0 | 0 | 56,763 | |
| 1968 | 7,382 | 0 | 0 | 0 | 192,188 | 294,457 | |
| 1969 | 9,970 | 0 | 0 | 0 | 195,705 | 268,104 | |
| 1970 | 11,739 | 0 | 0 | 0 | 276,211 | 369,459 | |
| 1971 | 12,490 | 0 | 0 | 0 | 553,081 | 654,442 | |
| 1972 | 13,905 | 0 | 0 | 0 | 895,006 | 1,037,770 | |
| 1973 | 9,418 | 0 | 0 | 0 | 638,930 | 737,532 | |
| 1974 | 9,700 | 0 | 0 | 0 | 783,984 | 878,947 | |
| 1975 | 10,700 | 0 | 0 | 0 | 1,129,728 | 1,230,830 | |
| 1976 | 11,700 | 0 | 0 | 0 | 1,245,662 | 1,380,124 | |
| 1977 | 5,075 | 0 | 0 | 0 | 465,442 | 582,381 | |
| 1978 | 11,362 | 0 | 0 | 0 | 1,339,268 | 1,458,733 | |
| 1979 | 19,138 | 0 | 0 | 0 | 1,537,075 | 1,666,457 | |
| 1980 | 13,882 | 0 | 0 | 0 | 1,413,363 | 1,536,456 | |
| 1981 | 12,700 | 0 | 0 | 0 | 1,779,479 | 1,918,563 | |
| 1982 | 12,700 | 0 | 0 | 0 | 1,641,571 | 1,750,862 | |
| 1983 | 12,659 | 0 | 0 | 0 | 1,089,626 | 1,187,156 | |
| 1984 | 12,741 | 0 | 0 | 0 | 1,489,814 | 1,591,416 | |
| 1985 | 12,099 | 0 | 0 | 0 | 1,863,544 | 1,990,295 | |
| 1986 | 13,301 | 0 | 0 | 0 | 1,882,290 | 1,999,155 | |
| 1987 | 11,821 | 0 | 0 | 0 | 1,984,570 | 2,131,608 | |
| 1988 | 11,534 | 0 | 0 | 0 | 2,221,538 | 2,385,122 | |
| 1989 | 14,645 | 0 | 0 | 0 | 2,686,838 | 2,853,747 | |
| 1990 | 6,440 | 0 | 0 | 0 | 2,398,121 | 2,582,151 | |
| 1991 | 716 | 0 | 0 | 0 | 489,489 | 549,113 | |
| 1992 | 5,887 | 0 | 0 | 0 | 1,374,775 | 1,471,454 | |
| 1993 | 4,157 | 0 | 0 | 0 | 2,173,352 | 2,315,235 | |
| 1994 | 9,422 | 0 | 0 | 0 | 1,727,504 | 1,861,976 | |
| 1995 | 9,486 | 0 | 0 | 0 | 1,926,835 | 2,031,423 | |
| 1996 | 14,052 | 0 | 0 | 0 | 2,429,928 | 2,543,472 | |
| 1997 | 4,870 | 0 | 1,099 | 7,439 | 2,263,966 | 2,405,444 | |
| 1998 | 311 | 0 | 3,592 | 18,618 | 1,657,381 | 1,764,963 | |
| 1999 | 4,086 | 0 | 3,743 | 20,137 | 2,755,025 | 2,898,961 | |
| 2000 | 8,395 | 0 | 3,962 | 22,741 | 3,390,079 | 3,569,072 | |
| 2001 | 1,238 | 0 | 4,283 | 18,946 | 2,034,350 | 2,175,194 | |
| 2002 | 2,737 | 0 | 4,355 | 27,636 | 2,738,943 | 2,909,555 | |
| 2003 | 4,001 | 0 | 4,453 | 26,968 | 3,151,625 | 3,327,811 | |
| 2004 | 3,776 | 0 | 4,165 | 29,705 | 3,050,652 | 3,230,590 | |
| 2005 | 2,709 | 0 | 4,251 | 23,344 | 3,597,829 | 3,753,874 | |
| 2006 | 2,735 | 0 | 4,209 | 23,275 | 3,526,551 | 3,693,938 | |
| 2007 | 6,071 | 0 | 3,776 | 27,740 | 3,088,763 | 3,284,475 | |
| 2008 | 0 | 0 | 3,402 | 18,393 | 1,978,428 | 2,152,219 | |
| 2009 | 1 | 0 | 3,801 | 15,452 | 2,065,868 | 2,227,564 | |
| 2010 | 768 | 0 | 3,757 | 17,775 | 2,694,511 | 2,836,927 | |
| 2011 | 1,746 | 0 | 3,819 | 21,050 | 3,510,684 | 3,666,432 | |
| 2012 | 2,404 | 0 | 3,944 | 19,474 | 2,726,325 | 2,881,783 | |
| 2013 | 6,128 | 0 | 3,681 | 18,018 | 2,023,225 | 2,224,875 | |
| 2014 | 0 | 0 | 3,206 | 16,757 | 1,111,222 | 1,242,286 | |
| 2015 | 0 | 0 | 3,438 | 11,673 | 1,339,811 | 1,497,970 | |
| 2016 | 0 | 0 | 4,199 | 27,182 | 2,203,916 | 2,359,869 | |
| 2017 | 370 | 2,159 | 2,845 | 29,740 | 3,648,162 | 3,770,268 | |
| 2018 | 62 | 0 | 2,427 | 27,448 | 1,861,621 | 2,048,447 | |
| 2019 | 0 | 0 | 3,337 | 20,656 | 2,786,879 | 2,945,730 | |
| 2020 | 2,000 | 0 | 12,696 | 27,292 | 2,303,545 | 2,479,029 | |
| 2021 | 2,000 | 0 | 12,710 | 27,292 | 2,302,143 | 2,479,043 | |
| 2022 | 2,000 | 0 | 12,810 | 27,292 | 2,301,931 | 2,479,143 | |
| 2023 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2024 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2025 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2026 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2027 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2028 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2029 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2030 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2031 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2032 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2033 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2034 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| 2035 | 2,000 | 0 | 12,858 | 27,292 | 2,301,763 | 2,479,191 | |
| TOTAL | 395,229 | 2,159 | 289,114 | 926,839 | 135,861,271 | 145,981,549 | |

^d Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

Tables B-5A-Adj through B-31

Note: Where applicable, the projected data values shown in this appendix are shaded and the bill year data are in **bold** type.

TABLE B-5A-Adj Annual Water Quantity Adjustments to Water Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 1 of 5

| Calendar Year | CALIFORNIA AQUEDUCT | | | | | | | | | | | |
|---------------|---------------------|----------------|-----------------|----------------|--------------|---------------------|------------------|--------------|------------------|-------------|----------------|-------------|
| | SAN LUIS DIVISION | | | | | | | | | | | |
| | Reach 1 | Reach 3A | | | | | | | | | | |
| Santa Clara | Alameda-Zone 7 | Alameda County | AVEK | Crestline | Dudley Ridge | Kern (Agricultural) | Kings | Metropolitan | Mojave | Palmdale | San Bernardino | San Gabriel |
| [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] | [12] | [13] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | (11,135) | 0 | 0 | 0 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | (11,487) | 0 | 0 | 0 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | (9,332) | 0 | 0 | 0 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | (18,428) | 0 | 0 | 0 | 0 | 0 | 0 |
| 2004 | 0 | 0 | 0 | 0 | 0 | (866) | 0 | 0 | 0 | 0 | 0 | 0 |
| 2005 | 0 | 0 | 0 | 0 | 0 | (576) | (20,082) | 0 | 0 | 0 | 0 | 0 |
| 2006 | 0 | 0 | 0 | 0 | 0 | (20,239) | 0 | 0 | 0 | 0 | 0 | 0 |
| 2007 | 0 | 0 | 0 | 0 | 0 | (9,867) | 0 | 0 | 0 | 0 | 0 | 0 |
| 2008 | (8,885) | 0 | 0 | 0 | 0 | (99,439) | 0 | 0 | 0 | 0 | 0 | 0 |
| 2009 | 0 | 0 | (5,926) | (1) | (28) | (88,699) | 0 | (815) | (5) | (15) | (21) | (4) |
| 2010 | 0 | 0 | 0 | 0 | 0 | (87,370) | 0 | (181,745) | 0 | 0 | 0 | 0 |
| 2011 | 0 | 0 | 0 | 0 | 0 | (56,909) | 0 | (106,423) | 0 | 0 | 0 | 0 |
| 2012 | 0 | 0 | 0 | 0 | 0 | (6,068) | (60,762) | 0 | 0 | 0 | 0 | 0 |
| 2013 | 0 | 0 | 0 | 0 | 0 | 0 | (11,846) | 0 | 0 | 0 | 0 | 0 |
| 2014 | 0 | 0 | (32) | (5) | (36) | (114,007) | (2) | (789) | (6) | (14) | (23) | (6) |
| 2015 | 0 | (6,264) | (8,763) | (6) | (1) | (16,796) | (76,141) | 0 | (159) | (1) | (3) | (5) |
| 2016 | 0 | (1,904) | (4,677) | 0 | 0 | (69,891) | 0 | 0 | 0 | 0 | 0 | 0 |
| 2017 | 0 | 0 | 0 | 0 | 0 | (14,831) | (68,628) | 0 | (70,867) | 0 | 0 | 0 |
| 2018 | 0 | 0 | 0 | 0 | 0 | (7,885) | (55,715) | 0 | 0 | 0 | 0 | 0 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | (31,379) | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | (8,885) | (8,168) | (13,440) | (5,964) | (7) | (46,220) | (922,222) | (2) | (360,798) | (12) | (32) | (49) |
| | | | | | | | | | | | | (11) |

TABLE B-5A-Adj Annual Water Quantity Adjustments to Water Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 2 of 5

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | | | |
|---------------|---------------------------------|-----------------|-----------------|------------------|-----------------|-----------------|------------|---------------------|----------------------------|---------------------|-----------------|-----------------|-----------------|---|
| | SAN LUIS DIVISION (continued) | | | | | | | | SOUTH SAN JOAQUIN DIVISION | | | | | |
| | Reach 3A (continued) | | | | | | | Reach 4 | | Reach 7 | | Reach 10A | | |
| | San Gorgonio | San Luis Obispo | Santa Barbara | Santa Clara | Santa Clarita* | Tulare | Ventura | Kern (Agricultural) | Tulare | Kern (Agricultural) | Tulare | Alameda-Zone 7 | Alameda County | |
| | [14] | [15] | [16] | [17] | [18] | [19] | [20] | [21] | [22] | [23] | [24] | [25] | [26] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | (12,806) | 0 | (24,167) | (2,981) | 0 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (25,164) | (1,807) | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2004 | 0 | 0 | 0 | 0 | 0 | (4,000) | 0 | 0 | (6,020) | 0 | 0 | 0 | 0 | 0 |
| 2005 | 0 | 0 | 0 | (20,000) | 0 | (277) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2006 | 0 | 0 | 0 | (53,573) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2007 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (5,000) | 0 | 0 |
| 2008 | 0 | 0 | 0 | (3,681) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (7,000) | (10,000) | 0 |
| 2009 | (4) | (2) | (19) | (1,000) | (38) | (49) | (1) | 0 | 0 | 0 | 0 | 0 | (3,083) | 0 |
| 2010 | 0 | 0 | 0 | (44,668) | (3,300) | (17,551) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2011 | 0 | 0 | 0 | (51,404) | 0 | (11,096) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2012 | 0 | 0 | 0 | 0 | 0 | (9,366) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2013 | 0 | 0 | 0 | 0 | 0 | (6,054) | 0 | 0 | 0 | 0 | 0 | (4,000) | (4,000) | 0 |
| 2014 | (13) | (134) | (926) | 0 | (34) | (8) | 0 | 0 | 0 | 0 | 0 | (8,074) | (13,652) | 0 |
| 2015 | (3) | (27) | (187) | (21,076) | (7) | (11) | 0 | 0 | 0 | 0 | 0 | (11,185) | (14,115) | 0 |
| 2016 | 0 | 0 | 0 | (6,706) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (324) | 0 | 0 |
| 2017 | 0 | 0 | (11,128) | (83,322) | (17,988) | (4,000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2018 | 0 | 0 | 0 | (32,999) | 0 | (16,950) | 0 | 0 | 0 | 0 | 0 | 0 | (5,000) | 0 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | (20) | (163) | (12,260) | (318,429) | (21,367) | (69,352) | (1) | (12,806) | (6,020) | (24,167) | (28,145) | (32,390) | (54,850) | |

* Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-5A-Adj Annual Water Quantity Adjustments to Water Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 3 of 5

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | | |
|---------------|--|-----------------|-------------------|----------------|-------------------------------|--------------------|-----------------|-----------------|-----------------|-----------------|------------------------|------------------|------------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | | | |
| | Reach 10A (continued) | | | | | | | Reach 12E | | | | | |
| Desert | Kern (Agricultural) | Metropolitan | San Bernardino | Santa Clara | Santa Clarita ^a | Alameda- Zone 7 | AVEK | Coachella | Desert | Dudley Ridge | Kern (Agricultural) | Metropolitan | |
| | [27] | [28] | [29] | [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2001 | 0 | (1,813) | (31,500) | 0 | (30,000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (20,800) |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (14,638) | 0 |
| 2003 | 0 | 0 | (10,000) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (5,170) | (5,073) |
| 2004 | 0 | (3) | (93,555) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (17,765) |
| 2005 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2006 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2007 | 0 | (12,469) | (93,986) | 0 | (20,000) | 0 | 0 | 0 | 0 | 0 | 0 | (16,618) | (5,000) |
| 2008 | (4,864) | 0 | (99,024) | 0 | (10,000) | 0 | 0 | (8,393) | (3,000) | (3,486) | 0 | (103,683) | (8,402) |
| 2009 | 0 | (7,733) | (65,499) | 0 | (27,319) | (4,950) | 0 | (6,393) | (3,000) | 0 | 0 | (105,145) | (14,516) |
| 2010 | 0 | (56) | 0 | 0 | 0 | 0 | 0 | (8,393) | 0 | 0 | (43,833) | (52,413) | 0 |
| 2011 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (14,223) | (23,419) |
| 2012 | 0 | 0 | 0 | 0 | (17,000) | 0 | 0 | 0 | (4,000) | 0 | 0 | (12,815) | 0 |
| 2013 | 0 | (24,626) | (37,544) | 0 | (27,308) | 0 | 0 | 0 | (16,500) | 0 | 0 | (34,355) | (31,478) |
| 2014 | 0 | (7,476) | (30,049) | (694) | (29,134) | (4,951) | (5,901) | 0 | (5,000) | 0 | 0 | (90,996) | (9,882) |
| 2015 | 0 | (20,190) | (32,517) | 0 | (40,572) | 0 | (5,029) | 0 | (9,500) | 0 | 0 | (56,927) | (6,899) |
| 2016 | 0 | (626) | (12,440) | 0 | (1,122) | 0 | 0 | 0 | (16,500) | 0 | 0 | (64,384) | (23,389) |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (5,397) | 0 | 0 | (6,075) | (6,375) |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (20,603) | 0 | (6,379) | (44,565) | (2,618) |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | (4,864) | (74,992) | (506,114) | (694) | (202,455) | (9,901) | (10,930) | (14,786) | (91,893) | (3,486) | (6,379) | (613,427) | (228,029) |

*Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-5A-Adj Annual Water Quantity Adjustments to Water Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 4 of 5

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | |
|----------------|--|----------------|----------------------------|-----------------|----------------|----------------|-------------------|--------------------|-----------------|----------------|----------------|-----------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | | |
| | Reach 12E (continued) | | | | Reach 13B | | | | | | | |
| San Bernardino | San Gorgonio | Santa Clara | Santa Clarita ^a | Alameda-Zone 7 | Alameda County | Dudley Ridge | Kern Agricultural | Metropolitan | Palmdale | San Bernardino | Santa Clara | |
| [40] | [41] | [42] | [43] | [44] | [45] | [46] | [47] | [48] | [49] | [50] | [51] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | (132,228) | 0 | 0 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | (22,161) | 0 | 0 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 0 | (15,316) | (24,523) | 0 | 0 | 0 | 0 |
| 2004 | 0 | 0 | 0 | 0 | 0 | 0 | (43,985) | (4,813) | 0 | 0 | 0 | 0 |
| 2005 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2006 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2007 | 0 | 0 | 0 | (11,000) | 0 | 0 | (257,750) | 0 | (4,926) | 0 | 0 | 0 |
| 2008 | 0 | 0 | 0 | (11,000) | 0 | 0 | (228,579) | (25,721) | 0 | 0 | 0 | 0 |
| 2009 | 0 | 0 | (6,134) | (11,000) | 0 | 0 | (186,044) | 0 | 0 | 0 | 0 | 0 |
| 2010 | 0 | 0 | (2,750) | 0 | 0 | 0 | (59,451) | 0 | 0 | 0 | 0 | 0 |
| 2011 | 0 | 0 | 0 | 0 | 0 | 0 | (29,041) | 0 | 0 | 0 | 0 | 0 |
| 2012 | 0 | 0 | 0 | 0 | 0 | (6,068) | (103,364) | 0 | 0 | 0 | 0 | 0 |
| 2013 | (1,500) | 0 | 0 | 0 | 0 | 0 | (160,286) | (1,033) | 0 | 0 | (17,692) | |
| 2014 | (400) | 0 | 0 | (13,824) | (931) | (1,088) | (16,789) | (161,077) | (17,184) | 0 | (3,906) | (5,253) |
| 2015 | 0 | 0 | (288) | (13,993) | (1,600) | (2,097) | (14,460) | (112,780) | (21,935) | 0 | 0 | (4,625) |
| 2016 | 0 | 0 | 0 | (5,940) | 0 | 0 | (28,033) | 0 | 0 | 0 | 0 | 0 |
| 2017 | 0 | (1,700) | 0 | 0 | 0 | 0 | (60,240) | 0 | 0 | 0 | 0 | 0 |
| 2018 | 0 | (1,700) | 0 | (6,000) | 0 | 0 | (1,506) | (54,934) | 0 | 0 | 0 | 0 |
| 2019 | 0 | 0 | 0 | (1,100) | 0 | 0 | (13,558) | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | (1,900) | (3,400) | (6,422) | (76,607) | (2,531) | (3,185) | (38,823) | (1,668,827) | (95,209) | (4,926) | (3,906) | (27,570) |

^aCastaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-5A-Adj Annual Water Quantity Adjustments to Water Delivered from Each Aqueduct Reach to Each Contractor (acre-feet)

Sheet 5 of 5

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | GRAND TOTAL |
|---------------|--|---------------------|------------------|---------------------|---------------------|-----------------|--------------|-----------------|-----------------|--------------------|--------------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | MOJAVE DIVISION | | | | SANTA ANA DIVISION | |
| | Reach 14B | Reach 14C | | Reach 15A | Reach 16A | Reach 22A | Reach 22B | | Reach 24 | Reach EBX2C | |
| | Kern (Agricultural) | Kern (Agricultural) | Metropolitan | Kern (Agricultural) | Kern (Agricultural) | AKEK | AKEK | Metropolitan | Metropolitan | San Bernardino | |
| [52] | [53] | [54] | [55] | [56] | [57] | [58] | [59] | [60] | [61] | [62] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (51,089) |
| 2001 | (396) | (242) | 0 | 0 | 0 | (152) | 0 | 0 | 0 | 0 | (255,589) |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (46,131) |
| 2003 | 0 | 0 | (12,380) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (90,890) |
| 2004 | 0 | 0 | (25,512) | 0 | 0 | 0 | 0 | 0 | 0 | (844) | (197,363) |
| 2005 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (7) | (40,942) |
| 2006 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (2) | (73,814) |
| 2007 | 0 | 0 | (24,225) | 0 | 0 | 0 | (8,751) | (17,249) | 0 | 0 | (486,841) |
| 2008 | 0 | 0 | (37,602) | 0 | 0 | 0 | (4,816) | (3,679) | (6) | (681,260) | |
| 2009 | (1,706) | (5,168) | (54,948) | (2,788) | (444) | 0 | 0 | 0 | (7,488) | (11) | (609,996) |
| 2010 | (1,867) | (4,761) | (32,758) | (2,913) | 0 | 0 | 0 | 0 | (2,891) | 0 | (546,720) |
| 2011 | 0 | 0 | (16,065) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (308,580) |
| 2012 | (73) | (862) | (10,010) | (405) | 0 | 0 | 0 | 0 | 0 | 0 | (230,793) |
| 2013 | (264) | (4,691) | (33,205) | (406) | 0 | 0 | 0 | 0 | 0 | 0 | (416,788) |
| 2014 | (6,898) | (10,773) | (47,358) | (5,962) | 0 | (1,046) | 0 | 0 | 0 | 0 | (614,333) |
| 2015 | (10,554) | (11,108) | (70,200) | (5,560) | 0 | (1,516) | 0 | 0 | 0 | 0 | (597,091) |
| 2016 | (8,376) | (4,939) | (29,819) | (3,549) | 0 | (1,056) | 0 | 0 | 0 | 0 | (283,675) |
| 2017 | 0 | 0 | (5,863) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (356,414) |
| 2018 | 6,606 | (5,372) | (13,893) | (1,698) | 0 | 0 | 0 | 0 | 0 | 0 | (284,423) |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (46,037) |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | (36,740) | (47,916) | (413,838) | (23,281) | (444) | (3,618) | (152) | (13,567) | (31,307) | (870) | (6,218,769) |

Tables B-5B through B-31

Note: Where applicable, the projected data values shown in this appendix are shaded and the bill year data are in **bold** type.

TABLE B-5B Annual Water Quantities Delivered to Each Contractor (acre-feet)

Sheet 1 of 4

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA ^a | | | | CENTRAL COASTAL AREA | | |
|---------------|-------------------|------------------|------------------|-----------------------------|------------------|------------------|------------------|----------------------|----------------|------------------|
| | Napa ^b | Solano | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| 1962 | 0 | 0 | 0 | 494 | 8,412 | 0 | 8,906 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 1,731 | 10,914 | 0 | 12,645 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 1,673 | 19,238 | 0 | 20,911 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 2,605 | 16,407 | 15,014 | 34,026 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 5,511 | 14,864 | 34,538 | 54,913 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 4,780 | 12,882 | 39,101 | 56,763 | 0 | 0 | 0 |
| 1968 | 1,214 | 0 | 1,214 | 6,133 | 24,817 | 70,105 | 101,055 | 0 | 0 | 0 |
| 1969 | 2,687 | 0 | 2,687 | 6,635 | 813 | 62,264 | 69,712 | 0 | 0 | 0 |
| 1970 | 3,618 | 0 | 3,618 | 9,249 | 0 | 80,311 | 89,560 | 0 | 0 | 0 |
| 1971 | 2,521 | 0 | 2,521 | 5,017 | 5,961 | 87,606 | 98,584 | 0 | 0 | 0 |
| 1972 | 3,647 | 0 | 3,647 | 10,489 | 27,671 | 100,266 | 138,426 | 0 | 0 | 0 |
| 1973 | 3,792 | 0 | 3,792 | 2,975 | 2,521 | 88,582 | 94,078 | 0 | 0 | 0 |
| 1974 | 4,870 | 0 | 4,870 | 1,314 | 4 | 88,000 | 89,318 | 0 | 0 | 0 |
| 1975 | 6,840 | 0 | 6,840 | 4,618 | 986 | 88,000 | 93,604 | 0 | 0 | 0 |
| 1976 | 7,122 | 0 | 7,122 | 17,131 | 21,300 | 88,000 | 126,431 | 0 | 0 | 0 |
| 1977 | 8,226 | 0 | 8,226 | 12,644 | 18,840 | 76,220 | 107,704 | 0 | 0 | 0 |
| 1978 | 6,034 | 0 | 6,034 | 10,984 | 5,863 | 95,727 | 112,574 | 0 | 0 | 0 |
| 1979 | 6,561 | 0 | 6,561 | 19,325 | 10,874 | 91,991 | 122,190 | 0 | 0 | 0 |
| 1980 | 6,707 | 0 | 6,707 | 16,790 | 11,034 | 88,000 | 115,824 | 0 | 0 | 0 |
| 1981 | 9,001 | 0 | 9,001 | 19,590 | 21,917 | 88,000 | 129,507 | 0 | 0 | 0 |
| 1982 | 1,213 | 0 | 1,213 | 13,123 | 6,316 | 88,000 | 107,439 | 0 | 0 | 0 |
| 1983 | 2,287 | 0 | 2,287 | 4,766 | 3,157 | 86,733 | 94,656 | 0 | 0 | 0 |
| 1984 | 2,923 | 0 | 2,923 | 6,784 | 3,338 | 88,000 | 98,122 | 0 | 0 | 0 |
| 1985 | 4,039 | 0 | 4,039 | 15,072 | 19,016 | 88,000 | 122,088 | 0 | 0 | 0 |
| 1986 | 3,519 | 1,400 | 4,919 | 10,609 | 12,379 | 88,000 | 110,988 | 0 | 0 | 0 |
| 1987 | 7,693 | 1,550 | 9,243 | 23,406 | 25,390 | 88,000 | 136,796 | 0 | 0 | 0 |
| 1988 | 5,392 | 9,726 | 15,118 | 25,830 | 33,464 | 87,961 | 147,255 | 0 | 0 | 0 |
| 1989 | 6,195 | 17,256 | 23,451 | 26,227 | 26,042 | 90,000 | 142,269 | 0 | 0 | 0 |
| 1990 | 6,940 | 19,131 | 26,071 | 33,034 | 31,703 | 92,000 | 156,737 | 0 | 0 | 0 |
| 1991 | 1,380 | 6,972 | 8,352 | 9,411 | 12,648 | 28,200 | 50,259 | 0 | 1,240 | 1,240 |
| 1992 | 4,001 | 14,773 | 18,774 | 14,669 | 19,153 | 42,839 | 76,661 | 0 | 0 | 0 |
| 1993 | 5,286 | 29,180 | 34,466 | 33,635 | 10,271 | 62,065 | 105,971 | 0 | 0 | 0 |
| 1994 | 6,792 | 25,256 | 32,048 | 20,542 | 22,911 | 57,115 | 100,568 | 0 | 0 | 0 |
| 1995 | 5,182 | 21,345 | 26,527 | 30,091 | 17,793 | 28,756 | 76,640 | 0 | 0 | 0 |
| 1996 | 4,893 | 29,999 | 34,892 | 18,903 | 19,662 | 89,850 | 128,415 | 100 | 0 | 100 |
| 1997 | 4,341 | 33,530 | 37,871 | 27,522 | 24,063 | 95,601 | 147,186 | 1,199 | 7,439 | 8,638 |
| 1998 | 5,359 | 29,766 | 35,125 | 17,941 | 19,075 | 63,410 | 100,426 | 3,592 | 18,618 | 22,210 |
| 1999 | 5,304 | 34,753 | 40,057 | 50,910 | 37,652 | 82,945 | 171,507 | 3,743 | 20,137 | 23,880 |
| 2000 | 4,958 | 37,015 | 41,973 | 58,617 | 35,978 | 101,988 | 196,583 | 3,962 | 22,741 | 26,703 |
| 2001 | 9,345 | 34,586 | 43,931 | 34,409 | 18,004 | 77,922 | 130,335 | 4,283 | 18,946 | 23,229 |
| 2002 | 6,875 | 38,560 | 45,435 | 53,261 | 27,811 | 62,186 | 143,258 | 4,355 | 27,636 | 31,991 |
| 2003 | 7,646 | 33,951 | 41,597 | 45,450 | 36,590 | 108,981 | 191,021 | 4,453 | 26,968 | 31,421 |
| 2004 | 8,134 | 43,002 | 51,136 | 52,364 | 27,884 | 59,458 | 139,706 | 4,165 | 29,705 | 33,870 |
| 2005 | 7,669 | 37,819 | 45,488 | 47,512 | 44,599 | 128,249 | 220,360 | 4,251 | 23,344 | 27,595 |
| 2006 | 7,789 | 35,516 | 43,305 | 54,527 | 43,079 | 128,210 | 225,816 | 4,209 | 23,275 | 27,484 |
| 2007 | 10,957 | 47,300 | 58,257 | 40,157 | 24,391 | 75,382 | 139,930 | 3,776 | 27,740 | 31,516 |
| 2008 | 13,292 | 41,320 | 54,612 | 41,186 | 22,902 | 59,160 | 123,248 | 3,402 | 18,393 | 21,795 |
| 2009 | 10,904 | 30,950 | 41,854 | 31,087 | 19,496 | 76,363 | 126,946 | 3,801 | 15,452 | 19,253 |
| 2010 | 12,417 | 30,816 | 43,233 | 47,343 | 22,571 | 107,871 | 177,785 | 3,757 | 17,775 | 21,532 |
| 2011 | 11,314 | 27,995 | 39,309 | 52,726 | 36,610 | 129,062 | 218,398 | 3,819 | 32,945 | 36,764 |
| 2012 | 9,907 | 29,347 | 39,254 | 55,239 | 20,831 | 63,794 | 139,864 | 3,944 | 19,474 | 23,418 |
| 2013 | 12,538 | 35,869 | 48,407 | 44,856 | 23,640 | 84,623 | 153,119 | 3,681 | 18,018 | 21,699 |
| 2014 | 14,164 | 19,679 | 33,843 | 34,296 | 30,066 | 67,446 | 131,808 | 3,206 | 16,757 | 19,963 |
| 2015 | 11,199 | 23,836 | 35,035 | 32,432 | 27,259 | 82,888 | 142,579 | 3,438 | 11,673 | 15,111 |
| 2016 | 8,993 | 23,605 | 32,598 | 53,484 | 27,357 | 107,164 | 188,005 | 4,199 | 35,537 | 39,736 |
| 2017 | 8,225 | 28,265 | 36,490 | 56,458 | 29,036 | 127,155 | 212,649 | 2,845 | 51,105 | 53,950 |
| 2018 | 11,682 | 35,072 | 46,754 | 39,523 | 18,161 | 121,736 | 179,420 | 2,427 | 28,348 | 30,775 |
| 2019 | 21,343 | 34,680 | 56,023 | 48,297 | 15,356 | 76,938 | 140,591 | 3,337 | 20,910 | 24,247 |
| 2020 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,696 | 27,292 | 39,988 |
| 2021 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,710 | 27,292 | 40,002 |
| 2022 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,810 | 27,292 | 40,102 |
| 2023 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2024 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2025 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2026 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2027 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2028 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2029 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2030 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2031 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2032 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2033 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2034 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| 2035 | 17,415 | 28,654 | 46,069 | 48,371 | 25,200 | 60,000 | 133,571 | 12,858 | 27,292 | 40,150 |
| TOTAL | 643,570 | 1,402,284 | 2,045,854 | 2,239,323 | 1,534,172 | 5,435,776 | 9,209,271 | 289,314 | 970,848 | 1,260,162 |

^a For the period June 1962 through November 1967, deliveries were supplied by non-project water.^b For the period 1968 through 1987, deliveries are non-project water pumped through an interim facility.

TABLE B-5B Annual Water Quantities Delivered to Each Contractor (acre-feet)

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | | | |
|---------------|-------------------------|----------------|--------------------------|-------------------|-------------------|----------------|----------------|------------------|-------------------|-------|
| | Dudley Ridge | Empire | Kern | | | Total | Kings | Oak Flat | Tulare | Total |
| | | | Municipal and Industrial | Agricultural | [15] | | | | | |
| | [11] | [12] | [13] | [14] | [15] | [16] | [17] | [18] | [19] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 26,360 | 1,978 | 0 | 127,384 | 127,384 | 900 | 3,084 | 25,100 | 184,806 | |
| 1969 | 31,375 | 56 | 0 | 141,265 | 141,265 | 100 | 3,016 | 9,923 | 185,735 | |
| 1970 | 40,407 | 3,942 | 0 | 204,634 | 204,634 | 0 | 5,911 | 9,578 | 264,472 | |
| 1971 | 41,053 | 5,990 | 0 | 360,151 | 360,151 | 3,700 | 7,212 | 122,485 | 540,591 | |
| 1972 | 42,443 | 5,795 | 0 | 490,781 | 490,781 | 1,400 | 8,166 | 258,393 | 806,978 | |
| 1973 | 22,057 | 3,000 | 0 | 341,469 | 341,469 | 1,500 | 3,214 | 50,464 | 421,704 | |
| 1974 | 33,390 | 3,000 | 23,708 | 323,292 | 347,000 | 1,500 | 3,471 | 72,289 | 460,650 | |
| 1975 | 40,555 | 3,000 | 14,529 | 396,291 | 410,820 | 1,600 | 3,576 | 86,258 | 545,809 | |
| 1976 | 41,421 | 3,000 | 46,719 | 392,531 | 439,250 | 1,600 | 4,112 | 58,811 | 548,194 | |
| 1977 | 11,153 | 738 | 27,882 | 163,425 | 191,307 | 1,530 | 1,472 | 18,081 | 224,281 | |
| 1978 | 51,747 | 454 | 76,895 | 590,452 | 667,347 | 2,070 | 3,906 | 12,053 | 737,577 | |
| 1979 | 38,544 | 1,739 | 62,997 | 683,049 | 746,046 | 2,000 | 6,149 | 155,121 | 949,599 | |
| 1980 | 41,000 | 894 | 45,943 | 588,557 | 634,500 | 2,200 | 5,700 | 75,444 | 759,738 | |
| 1981 | 41,000 | 5,859 | 75,758 | 615,642 | 691,400 | 2,300 | 4,300 | 83,438 | 828,297 | |
| 1982 | 41,000 | 361 | 47,477 | 697,823 | 745,300 | 1,750 | 3,838 | 18,551 | 810,800 | |
| 1983 | 42,900 | 0 | 6,854 | 587,653 | 594,507 | 3,550 | 3,822 | 1,006 | 645,785 | |
| 1984 | 45,100 | 0 | 90,904 | 769,696 | 860,600 | 3,100 | 5,700 | 5,743 | 920,243 | |
| 1985 | 46,251 | 5,197 | 88,515 | 800,381 | 888,896 | 3,400 | 5,433 | 109,791 | 1,058,968 | |
| 1986 | 50,249 | 1,170 | 77,240 | 829,101 | 906,341 | 3,700 | 5,107 | 79,355 | 1,045,922 | |
| 1987 | 46,288 | 2,525 | 117,174 | 852,731 | 969,905 | 4,000 | 5,625 | 93,084 | 1,121,427 | |
| 1988 | 47,994 | 3,475 | 122,409 | 887,111 | 1,009,520 | 4,000 | 4,412 | 95,866 | 1,165,267 | |
| 1989 | 57,049 | 3,000 | 123,896 | 1,022,166 | 1,146,062 | 4,000 | 6,091 | 127,950 | 1,344,152 | |
| 1990 | 36,296 | 1,279 | 127,837 | 584,611 | 712,448 | 2,000 | 2,922 | 57,070 | 812,015 | |
| 1991 | 927 | 221 | 33,122 | 8,965 | 42,087 | 0 | 141 | 2,180 | 45,556 | |
| 1992 | 23,770 | 1,354 | 62,326 | 420,894 | 483,220 | 1,806 | 2,239 | 46,728 | 559,117 | |
| 1993 | 50,618 | 2,741 | 128,316 | 1,039,614 | 1,167,930 | 4,000 | 4,858 | 124,468 | 1,354,615 | |
| 1994 | 28,793 | 1,666 | 87,139 | 570,020 | 657,159 | 2,116 | 3,071 | 62,362 | 755,167 | |
| 1995 | 60,686 | 1,631 | 135,415 | 1,016,114 | 1,151,529 | 4,000 | 5,169 | 101,869 | 1,324,884 | |
| 1996 | 56,948 | 1,868 | 135,654 | 1,049,409 | 1,185,063 | 4,000 | 4,904 | 236,875 | 1,489,658 | |
| 1997 | 71,308 | 0 | 120,708 | 987,451 | 1,108,159 | 0 | 5,238 | 22,369 | 1,207,074 | |
| 1998 | 55,650 | 542 | 89,765 | 768,825 | 858,590 | 15 | 4,401 | 20,677 | 939,875 | |
| 1999 | 59,697 | 3,176 | 138,153 | 1,039,985 | 1,178,138 | 4,000 | 4,871 | 289,735 | 1,539,617 | |
| 2000 | 60,539 | 1,799 | 40,697 | 1,183,440 | 1,224,137 | 3,600 | 4,508 | 201,294 | 1,495,877 | |
| 2001 | 41,902 | 1,360 | 3,116 | 651,175 | 654,291 | 1,560 | 3,592 | 84,726 | 787,431 | |
| 2002 | 48,915 | 1,405 | 12,589 | 812,870 | 825,459 | 2,854 | 4,885 | 96,502 | 980,020 | |
| 2003 | 46,082 | 1,436 | 47,070 | 917,160 | 964,230 | 3,692 | 4,266 | 105,841 | 1,125,547 | |
| 2004 | 49,080 | 3,562 | 126,933 | 712,193 | 839,126 | 9,053 | 4,629 | 90,021 | 995,471 | |
| 2005 | 79,005 | 3,834 | 69,594 | 1,328,387 | 1,397,981 | 19,806 | 4,194 | 140,279 | 1,645,099 | |
| 2006 | 72,080 | 3,282 | 98,199 | 1,164,671 | 1,262,870 | 9,530 | 4,242 | 108,207 | 1,460,211 | |
| 2007 | 45,135 | 2,084 | 79,144 | 949,601 | 1,028,745 | 5,746 | 3,567 | 87,083 | 1,172,360 | |
| 2008 | 22,174 | 947 | 24,572 | 702,099 | 726,671 | 3,836 | 1,985 | 33,904 | 789,517 | |
| 2009 | 21,237 | 1,034 | 2,912 | 779,826 | 782,738 | 3,391 | 1,993 | 36,836 | 847,229 | |
| 2010 | 27,967 | 3,259 | 8,183 | 689,917 | 698,100 | 4,679 | 2,906 | 70,238 | 807,149 | |
| 2011 | 60,560 | 1,915 | 37,112 | 1,157,336 | 1,194,448 | 6,556 | 2,715 | 63,141 | 1,329,335 | |
| 2012 | 30,450 | 2,242 | 27,500 | 778,144 | 805,644 | 7,405 | 3,208 | 95,717 | 944,666 | |
| 2013 | 27,046 | 1,567 | 33,501 | 711,840 | 745,341 | 4,645 | 2,820 | 48,361 | 829,780 | |
| 2014 | 40,535 | 516 | 1 | 516,001 | 516,002 | 1,256 | 1,520 | 8,934 | 568,763 | |
| 2015 | 41,733 | 624 | 11,976 | 508,842 | 520,818 | 1,229 | 1,077 | 17,336 | 582,817 | |
| 2016 | 20,908 | 1,822 | 9,633 | 634,649 | 644,282 | 3,660 | 1,855 | 42,387 | 714,914 | |
| 2017 | 64,245 | 1,698 | 35,965 | 1,159,922 | 1,195,887 | 6,645 | 2,893 | 61,920 | 1,333,288 | |
| 2018 | 41,006 | 1,591 | 4,204 | 609,408 | 613,612 | 3,713 | 2,289 | 51,451 | 713,662 | |
| 2019 | 34,641 | 2,446 | 59,811 | 858,992 | 918,803 | 7,112 | 1,725 | 91,891 | 1,056,618 | |
| 2020 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2021 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2022 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2023 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2024 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2025 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2026 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2027 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2028 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2029 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2030 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2031 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2032 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2033 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2034 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| 2035 | 28,568 | 1,800 | 74,580 | 523,168 | 597,748 | 5,583 | 3,420 | 52,483 | 689,602 | |
| TOTAL | 2,656,357 | 136,874 | 4,033,327 | 44,548,634 | 48,581,961 | 271,133 | 256,720 | 4,908,914 | 56,811,959 | |

TABLE B-5B Annual Water Quantities Delivered to Each Contractor (acre-feet)

Sheet 3 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|------------------|----------------|------------------|---------------|----------------|----------------|------------------|----------------|----------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 53 | 0 | 464 | 0 | 338 | 55 | 0 | 1,275 | 0 | 0 |
| 1973 | 20 | 5,800 | 389 | 9,000 | 290 | 0 | 0 | 32,426 | 0 | 0 |
| 1974 | 1,259 | 6,400 | 627 | 10,000 | 400 | 14 | 0 | 16,605 | 612 | 0 |
| 1975 | 8,068 | 7,000 | 825 | 11,000 | 520 | 0 | 0 | 13,865 | 5,450 | 0 |
| 1976 | 27,782 | 7,600 | 1,002 | 12,000 | 589 | 0 | 0 | 12,273 | 6,071 | 0 |
| 1977 | 11,202 | 0 | 1,109 | 0 | 111 | 80 | 0 | 24,833 | 8,996 | 0 |
| 1978 | 44,137 | 10,084 | 1,209 | 15,300 | 208 | 0 | 0 | 4,055 | 7,771 | 0 |
| 1979 | 60,493 | 10,063 | 1,260 | 15,000 | 133 | 4,000 | 0 | 18 | 290 | 0 |
| 1980 | 72,407 | 10,884 | 1,239 | 17,000 | 191 | 4,000 | 0 | 0 | 1,085 | 0 |
| 1981 | 79,375 | 12,105 | 1,485 | 19,000 | 1,270 | 4,000 | 0 | 16,021 | 3,619 | 0 |
| 1982 | 50,291 | 13,326 | 1,238 | 21,000 | 0 | 10,500 | 0 | 8,409 | 12,599 | 0 |
| 1983 | 32,961 | 14,547 | 911 | 23,000 | 38 | 0 | 0 | 5,994 | 734 | 0 |
| 1984 | 32,662 | 15,768 | 1,128 | 25,000 | 1 | 0 | 0 | 5,556 | 7,656 | 0 |
| 1985 | 37,064 | 16,989 | 1,422 | 27,000 | 0 | 0 | 1,558 | 7,390 | 5,028 | 0 |
| 1986 | 32,449 | 18,210 | 1,506 | 29,000 | 163 | 0 | 3,096 | 6,421 | 9,454 | 0 |
| 1987 | 34,089 | 19,431 | 1,849 | 31,500 | 1,085 | 17 | 5,379 | 18,751 | 10,630 | 0 |
| 1988 | 34,079 | 20,652 | 2,006 | 34,000 | 419 | 9 | 1,770 | 21,386 | 8,948 | 0 |
| 1989 | 45,280 | 21,873 | 2,170 | 36,500 | 971 | 200 | 9,009 | 20,782 | 12,839 | 0 |
| 1990 | 47,206 | 23,100 | 1,827 | 38,100 | 1,747 | 0 | 8,608 | 18,831 | 16,649 | 0 |
| 1991 | 9,568 | 6,930 | 849 | 11,430 | 522 | 3,423 | 3,914 | 3,661 | 5,399 | 0 |
| 1992 | 30,265 | 10,427 | 519 | 17,197 | 251 | 10,686 | 4,035 | 3,358 | 7,908 | 0 |
| 1993 | 43,102 | 23,100 | 439 | 38,100 | 734 | 11,514 | 7,761 | 4,361 | 14,397 | 0 |
| 1994 | 49,153 | 14,102 | 785 | 23,257 | 1,098 | 16,852 | 8,418 | 9,135 | 15,230 | 0 |
| 1995 | 47,286 | 23,100 | 409 | 38,100 | 480 | 8,722 | 6,961 | 696 | 12,922 | 0 |
| 1996 | 56,356 | 62,219 | 485 | 102,622 | 494 | 7,427 | 11,434 | 6,064 | 15,989 | 0 |
| 1997 | 62,393 | 68,340 | 651 | 69,990 | 444 | 10,374 | 11,861 | 9,654 | 18,175 | 0 |
| 1998 | 52,926 | 85,709 | 187 | 70,647 | 404 | 3,925 | 8,752 | 1,878 | 9,310 | 0 |
| 1999 | 69,073 | 50,480 | 1,132 | 58,100 | 342 | 8,144 | 13,278 | 12,874 | 21,729 | 0 |
| 2000 | 83,577 | 42,323 | 1,194 | 58,234 | 0 | 11,380 | 9,060 | 18,399 | 15,140 | 0 |
| 2001 | 62,857 | 9,100 | 1,057 | 15,010 | 0 | 4,433 | 10,427 | 26,488 | 2,360 | 0 |
| 2002 | 58,171 | 16,755 | 2,189 | 27,640 | 0 | 4,346 | 18,496 | 72,069 | 24,851 | 0 |
| 2003 | 60,029 | 14,443 | 1,563 | 23,819 | 0 | 14,435 | 11,547 | 26,113 | 21,934 | 116 |
| 2004 | 59,731 | 15,465 | 2,006 | 21,190 | 0 | 13,176 | 12,162 | 57,030 | 12,541 | 841 |
| 2005 | 59,831 | 42,519 | 807 | 49,089 | 0 | 13,561 | 11,712 | 31,550 | 13,984 | 692 |
| 2006 | 80,384 | 121,100 | 641 | 50,000 | 0 | 34,014 | 12,492 | 35,331 | 16,284 | 4,278 |
| 2007 | 80,203 | 73,228 | 1,768 | 30,234 | 0 | 46,109 | 19,634 | 57,116 | 4,024 | 3,935 |
| 2008 | 54,436 | 46,791 | 848 | 26,428 | 25 | 25,396 | 14,255 | 35,145 | 7,212 | 4,905 |
| 2009 | 45,670 | 46,022 | 894 | 18,263 | 42 | 29,047 | 15,339 | 39,346 | 11,520 | 6,397 |
| 2010 | 58,489 | 85,592 | 357 | 31,183 | 0 | 38,152 | 10,969 | 49,379 | 19,180 | 8,240 |
| 2011 | 94,046 | 90,279 | 474 | 36,379 | 0 | 5,099 | 16,881 | 38,126 | 23,591 | 10,503 |
| 2012 | 111,207 | 117,587 | 624 | 45,101 | 0 | 11,244 | 18,897 | 112,972 | 22,058 | 11,010 |
| 2013 | 51,022 | 66,539 | 1,368 | 20,791 | 0 | 7,483 | 10,567 | 32,085 | 9,252 | 9,445 |
| 2014 | 18,532 | 12,870 | 1,233 | 3,049 | 0 | 3,581 | 8,406 | 10,956 | 1,200 | 5,044 |
| 2015 | 14,308 | 37,596 | 1,253 | 11,217 | 0 | 8,830 | 5,836 | 24,380 | 5,760 | 3,481 |
| 2016 | 41,356 | 69,422 | 1,084 | 21,893 | 0 | 22,283 | 10,516 | 62,296 | 16,088 | 10,816 |
| 2017 | 124,284 | 83,908 | 881 | 31,636 | 0 | 34,815 | 14,210 | 78,496 | 22,056 | 14,946 |
| 2018 | 72,341 | 139,089 | 991 | 47,746 | 0 | 5,471 | 10,210 | 43,970 | 17,055 | 12,622 |
| 2019 | 61,189 | 44,087 | 1,832 | 13,937 | 35 | 16,100 | 16,584 | 76,261 | 19,708 | 9,715 |
| 2020 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2021 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2022 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2023 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2024 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2025 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2026 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2027 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2028 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2029 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2030 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2031 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2032 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2033 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2034 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| 2035 | 88,286 | 83,010 | 3,480 | 33,450 | 0 | 30,030 | 19,543 | 61,560 | 17,280 | 10,380 |
| TOTAL | 3,775,238 | 3,081,114 | 107,866 | 1,920,882 | 13,345 | 933,377 | 676,722 | 2,199,040 | 801,768 | 283,066 |

TABLE B-5B Annual Water Quantities Delivered to Each Contractor (acre-feet)

Sheet 4 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | South Bay Area Future Contractor | GRAND TOTAL |
|---------------|--------------------------------------|-------------------|----------------|-------------------|--------------------|---------------|---------------|----------------|----------------------------------|--------------------|
| | Santa Clarita ^{c,d} | Metropolitan | Ventura | Total | Yuba City | Butte | Plumas | Total | | |
| [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,906 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,645 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20,911 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34,026 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54,913 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56,763 |
| 1968 | 7,382 | 0 | 0 | 7,382 | 0 | 0 | 0 | 0 | 0 | 294,457 |
| 1969 | 9,970 | 0 | 0 | 9,970 | 0 | 0 | 0 | 0 | 0 | 268,104 |
| 1970 | 11,739 | 0 | 0 | 11,739 | 0 | 0 | 70 | 70 | 0 | 369,459 |
| 1971 | 12,490 | 0 | 0 | 12,490 | 0 | 192 | 64 | 256 | 0 | 654,442 |
| 1972 | 13,905 | 71,938 | 0 | 88,028 | 0 | 186 | 505 | 691 | 0 | 1,037,770 |
| 1973 | 9,418 | 159,883 | 0 | 217,226 | 0 | 53 | 679 | 732 | 0 | 737,532 |
| 1974 | 9,700 | 277,717 | 0 | 323,334 | 0 | 127 | 648 | 775 | 0 | 878,947 |
| 1975 | 10,700 | 526,491 | 0 | 583,919 | 0 | 253 | 405 | 658 | 0 | 1,230,830 |
| 1976 | 11,700 | 618,451 | 0 | 697,468 | 0 | 527 | 382 | 909 | 0 | 1,380,124 |
| 1977 | 5,075 | 189,755 | 0 | 241,161 | 0 | 706 | 303 | 1,009 | 0 | 582,381 |
| 1978 | 11,362 | 507,565 | 0 | 601,691 | 0 | 579 | 278 | 857 | 0 | 1,458,733 |
| 1979 | 19,145 | 477,074 | 0 | 587,476 | 0 | 302 | 329 | 631 | 0 | 1,666,457 |
| 1980 | 15,092 | 531,727 | 0 | 653,625 | 0 | 267 | 295 | 562 | 0 | 1,536,456 |
| 1981 | 18,461 | 795,846 | 0 | 951,182 | 0 | 221 | 355 | 576 | 0 | 1,918,563 |
| 1982 | 22,216 | 691,192 | 0 | 830,771 | 0 | 334 | 305 | 639 | 0 | 1,750,862 |
| 1983 | 22,135 | 343,521 | 0 | 443,841 | 0 | 325 | 262 | 587 | 0 | 1,187,156 |
| 1984 | 24,218 | 457,582 | 0 | 569,571 | 108 | 177 | 272 | 557 | 0 | 1,591,416 |
| 1985 | 24,500 | 683,625 | 0 | 804,576 | 62 | 308 | 254 | 624 | 0 | 1,990,295 |
| 1986 | 27,229 | 708,840 | 0 | 836,368 | 328 | 313 | 317 | 958 | 0 | 1,999,155 |
| 1987 | 27,988 | 712,424 | 0 | 863,143 | 88 | 459 | 452 | 999 | 0 | 2,131,608 |
| 1988 | 30,438 | 902,564 | 0 | 1,056,271 | 303 | 385 | 523 | 1,211 | 0 | 2,385,122 |
| 1989 | 36,364 | 1,156,698 | 0 | 1,342,686 | 403 | 300 | 486 | 1,189 | 0 | 2,853,747 |
| 1990 | 28,579 | 1,396,423 | 4,836 | 1,585,906 | 494 | 380 | 548 | 1,422 | 0 | 2,582,151 |
| 1991 | 4,562 | 391,447 | 988 | 442,693 | 265 | 328 | 420 | 1,013 | 0 | 549,113 |
| 1992 | 20,699 | 710,313 | 0 | 815,658 | 642 | 117 | 485 | 1,244 | 0 | 1,471,454 |
| 1993 | 23,039 | 652,190 | 0 | 818,737 | 746 | 256 | 444 | 1,446 | 0 | 2,315,235 |
| 1994 | 26,441 | 807,866 | 0 | 972,337 | 1,035 | 329 | 492 | 1,856 | 0 | 1,861,976 |
| 1995 | 27,233 | 436,042 | 0 | 601,951 | 910 | 203 | 308 | 1,421 | 0 | 2,031,423 |
| 1996 | 32,500 | 593,380 | 0 | 888,970 | 820 | 257 | 360 | 1,437 | 0 | 2,543,472 |
| 1997 | 27,712 | 721,810 | 1,850 | 1,003,254 | 1,005 | 185 | 231 | 1,421 | 0 | 2,405,444 |
| 1998 | 20,093 | 410,065 | 1,850 | 665,746 | 1,054 | 527 | 0 | 1,581 | 0 | 1,764,963 |
| 1999 | 32,899 | 852,617 | 1,850 | 1,122,518 | 1,096 | 286 | 0 | 1,382 | 0 | 2,898,961 |
| 2000 | 40,680 | 1,522,412 | 4,050 | 1,806,449 | 901 | 586 | 0 | 1,487 | 0 | 3,569,072 |
| 2001 | 31,939 | 1,023,169 | 1,850 | 1,188,690 | 1,065 | 513 | 0 | 1,578 | 0 | 2,175,194 |
| 2002 | 68,817 | 1,408,919 | 4,998 | 1,707,251 | 1,181 | 419 | 0 | 1,600 | 0 | 2,909,555 |
| 2003 | 55,736 | 1,701,615 | 5,000 | 1,936,350 | 1,324 | 551 | 0 | 1,875 | 0 | 3,327,811 |
| 2004 | 83,761 | 1,724,380 | 5,250 | 2,007,533 | 1,434 | 1,440 | 0 | 2,874 | 0 | 3,230,590 |
| 2005 | 59,456 | 1,528,045 | 1,665 | 1,812,911 | 1,894 | 527 | 0 | 2,421 | 0 | 3,753,874 |
| 2006 | 62,752 | 1,512,186 | 1,850 | 1,931,312 | 5,342 | 468 | 0 | 5,810 | 0 | 3,693,938 |
| 2007 | 60,190 | 1,499,688 | 3,000 | 1,879,129 | 2,327 | 956 | 0 | 3,283 | 0 | 3,284,475 |
| 2008 | 42,878 | 898,313 | 3,798 | 1,160,430 | 1,923 | 451 | 243 | 2,617 | 0 | 2,152,219 |
| 2009 | 42,085 | 930,871 | 3,891 | 1,189,387 | 2,114 | 581 | 200 | 2,895 | 0 | 2,227,564 |
| 2010 | 57,900 | 1,420,331 | 4,075 | 1,783,847 | 2,331 | 807 | 243 | 3,381 | 0 | 2,836,927 |
| 2011 | 33,191 | 1,686,570 | 4,000 | 2,039,139 | 2,297 | 1,092 | 98 | 3,487 | 0 | 3,666,432 |
| 2012 | 50,473 | 1,224,907 | 4,353 | 1,730,433 | 2,695 | 1,374 | 79 | 4,148 | 0 | 2,881,783 |
| 2013 | 61,754 | 892,550 | 2,890 | 1,165,746 | 4,850 | 908 | 366 | 6,124 | 0 | 2,224,875 |
| 2014 | 29,448 | 387,392 | 93 | 481,804 | 4,237 | 1,617 | 251 | 6,105 | 0 | 1,242,286 |
| 2015 | 29,189 | 573,526 | 1,000 | 716,376 | 3,004 | 2,763 | 285 | 6,052 | 0 | 1,497,970 |
| 2016 | 37,828 | 1,083,900 | 3,000 | 1,380,482 | 1,229 | 2,518 | 387 | 4,134 | 0 | 2,359,869 |
| 2017 | 83,622 | 1,626,357 | 14,251 | 2,129,462 | 1,746 | 2,320 | 363 | 4,429 | 0 | 3,770,268 |
| 2018 | 42,897 | 679,544 | 648 | 1,072,584 | 1,715 | 3,029 | 508 | 5,252 | 0 | 2,048,447 |
| 2019 | 53,115 | 1,316,711 | 28,998 | 1,658,272 | 3,159 | 6,003 | 817 | 9,979 | 0 | 2,945,730 |
| 2020 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,029 |
| 2021 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,043 |
| 2022 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,143 |
| 2023 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2024 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2025 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2026 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2027 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2028 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2029 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2030 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2031 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2032 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2033 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2034 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| 2035 | 57,120 | 1,146,900 | 12,000 | 1,563,039 | 5,760 | 270 | 730 | 6,760 | 0 | 2,479,191 |
| TOTAL | 2,566,615 | 59,776,832 | 302,034 | 76,437,899 | 148,287 | 42,125 | 25,992 | 216,404 | 0 | 145,981,549 |

^c Devil's Den Water District merged with Castaic Lake Water Agency effective January 1, 1992.^d Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-6 Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (acre-feet)

Sheet 1 of 10

| Calendar Year | NORTH BAY AQUEDUCT | | | | | | | | | | | |
|---------------|-----------------------------|--------------------|-----------------------|---------------|-------------------------------|--------------------|-----------------------|----------|-----------------------------|--------------------|------------------------------------|---------------|
| | Barker Slough Pumping Plant | | | | Cordelia Pumping Plant Solano | | | | Cordelia Pumping Plant Napa | | | |
| | Initial Fill Water | Operational Losses | Water Supply Delivery | Total | Initial Fill Water | Operational Losses | Water Supply Delivery | Total | Initial Fill Water | Operational Losses | Water Supply Delivery ^a | Total |
| 1961 | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] | [12] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | (10) | 1,214 | 1,228 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2,687 | 2,689 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 3,618 | 3,636 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2,521 | 2,525 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (10) | 3,647 | 3,637 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3,792 | 3,793 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 4,870 | 4,880 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 6,840 | 6,850 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7,122 | 7,126 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8,226 | 8,228 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (6) | 6,034 | 6,028 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6,561 | 6,562 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (3) | 6,707 | 6,704 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 9,001 | 9,009 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (8) | 1,213 | 1,205 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (12) | 2,287 | 2,275 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (15) | 2,923 | 2,908 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 4,039 | 4,052 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (4) | 3,519 | 3,515 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,693 | 7,693 |
| 1988 | 1 | 283 | 15,118 | 15,402 | 0 | 0 | 9,725 | 9,725 | 1 | (1) | 5,392 | 5,392 |
| 1989 | 0 | 758 | 23,451 | 24,209 | 0 | 0 | 17,246 | 17,246 | 0 | (4) | 6,195 | 6,191 |
| 1990 | 0 | 3 | 26,071 | 26,074 | 0 | (634) | 15,856 | 15,222 | 0 | 3 | 6,940 | 6,943 |
| 1991 | 0 | 667 | 8,352 | 9,019 | 0 | 124 | 3,855 | 3,979 | 0 | 198 | 1,380 | 1,578 |
| 1992 | 0 | 1,643 | 18,774 | 20,417 | 0 | 0 | 9,220 | 9,220 | 0 | 0 | 4,001 | 4,001 |
| 1993 | 0 | 1,153 | 34,466 | 35,619 | 0 | 0 | 14,471 | 14,471 | 0 | 0 | 5,286 | 5,286 |
| 1994 | 0 | 780 | 32,048 | 32,828 | 0 | (6) | 14,913 | 14,907 | 0 | 0 | 6,792 | 6,792 |
| 1995 | 0 | 908 | 26,527 | 27,435 | 0 | 0 | 15,893 | 15,893 | 0 | 0 | 5,182 | 5,182 |
| 1996 | 0 | 1,354 | 34,892 | 36,246 | 0 | 0 | 17,069 | 17,069 | 0 | 0 | 4,893 | 4,893 |
| 1997 | 0 | 1,422 | 37,871 | 39,293 | 0 | 0 | 17,501 | 17,501 | 0 | 0 | 4,341 | 4,341 |
| 1998 | 0 | 1,343 | 35,125 | 36,468 | 0 | 0 | 18,204 | 18,204 | 0 | 0 | 5,359 | 5,359 |
| 1999 | 0 | 2,522 | 40,057 | 42,579 | 0 | 0 | 19,562 | 19,562 | 0 | 0 | 5,304 | 5,304 |
| 2000 | 0 | 1,853 | 41,973 | 43,826 | 0 | 4 | 21,525 | 21,529 | 0 | 180 | 4,958 | 5,138 |
| 2001 | 0 | 1,760 | 43,931 | 45,691 | 0 | 0 | 19,737 | 19,737 | 0 | 0 | 9,345 | 9,345 |
| 2002 | 0 | 496 | 45,435 | 45,931 | 0 | 0 | 19,719 | 19,719 | 0 | 0 | 6,875 | 6,875 |
| 2003 | 0 | 3,991 | 41,597 | 45,588 | 0 | 0 | 16,700 | 16,700 | 0 | 0 | 7,637 | 7,637 |
| 2004 | 0 | 2,181 | 51,136 | 53,317 | 0 | 0 | 21,686 | 21,686 | 0 | 0 | 8,499 | 8,499 |
| 2005 | 0 | 935 | 45,488 | 46,423 | 0 | 0 | 19,189 | 19,189 | 0 | 0 | 8,009 | 8,009 |
| 2006 | 0 | 1,005 | 43,305 | 44,310 | 0 | 0 | 18,651 | 18,651 | 0 | 0 | 8,081 | 8,081 |
| 2007 | 0 | 1,189 | 58,257 | 59,446 | 0 | 0 | 27,793 | 27,793 | 0 | 0 | 11,277 | 11,277 |
| 2008 | 0 | 845 | 54,612 | 55,457 | 0 | 0 | 19,436 | 19,436 | 0 | 255 | 13,740 | 13,995 |
| 2009 | 0 | 537 | 41,854 | 42,391 | 0 | 0 | 15,473 | 15,473 | 0 | 130 | 11,377 | 11,507 |
| 2010 | 0 | 809 | 43,233 | 44,042 | 0 | 0 | 12,788 | 12,788 | 0 | 254 | 12,847 | 13,101 |
| 2011 | 0 | 803 | 39,309 | 40,112 | 0 | 0 | 12,832 | 12,832 | 0 | 213 | 11,275 | 11,488 |
| 2012 | 0 | 686 | 39,254 | 39,940 | 0 | 0 | 12,886 | 12,886 | 0 | 196 | 9,860 | 10,056 |
| 2013 | 0 | 1,150 | 48,407 | 49,557 | 0 | 0 | 19,404 | 19,404 | 0 | 350 | 12,478 | 12,828 |
| 2014 | 0 | 2,597 | 33,843 | 36,440 | 0 | 0 | 12,366 | 12,366 | 0 | 970 | 14,123 | 15,093 |
| 2015 | 0 | 144 | 35,035 | 35,179 | 0 | 0 | 15,321 | 15,321 | 0 | 76 | 11,133 | 11,209 |
| 2016 | 0 | 552 | 32,598 | 33,150 | 0 | 0 | 12,849 | 12,849 | 0 | 278 | 8,947 | 9,225 |
| 2017 | 0 | 1,639 | 36,490 | 38,129 | 0 | 0 | 14,525 | 14,525 | 0 | 646 | 8,201 | 8,847 |
| 2018 | 0 | 3,330 | 46,754 | 50,084 | 0 | 0 | 19,607 | 19,607 | 0 | 899 | 11,660 | 12,559 |
| 2019 | 0 | 51 | 56,023 | 56,074 | 0 | 0 | 14,507 | 14,507 | 0 | 5 | 21,338 | 21,343 |
| 2020 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2021 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2022 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2023 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2024 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2025 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2026 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2027 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2028 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2029 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2030 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2031 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2032 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2033 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2034 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |
| 2035 | 0 | 51 | 46,069 | 46,120 | 0 | 0 | 0 | 0 | 0 | 5 | 17,415 | 17,420 |

^a For the period 1968 through 1987, deliveries are non-SWP water pumped through an interim facility.

TABLE B-6 Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (acre-feet)

Sheet 2 of 10

| Calendar Year | SOUTH BAY AQUEDUCT | | | | | | CALIFORNIA AQUEDUCT | | | | | | | | |
|---------------|-------------------------|--------------------|--------------------|---------------------------|---------------------------|------------|----------------------------|--------------------|--------------------|---------------------------|----------------------|------------|--------------------|-----------|------|
| | South Bay Pumping Plant | | | | | | NORTH SAN JOAQUIN DIVISION | | | | | | | | |
| | | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Transportation Water | | Conservation Water | Total | |
| | | | | | Water Supply ^b | Recreation | | | | | Water Supply | Recreation | | | |
| 1961 | [13] | [14] | 0 | [15] | [16] | [17] | [18] | [19] | [20] | [21] | [22] | [23] | [24] | [25] | [26] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 9 | 272 | 0 | 8,906 | 0 | 9,187 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 71 | 185 | 0 | 12,645 | 0 | 12,901 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 171 | 152 | 0 | 20,911 | 0 | 21,234 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 93 | 729 | 0 | 34,026 | 0 | 34,848 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 1,746 | 0 | 54,913 | 0 | 56,659 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 1,677 | 0 | 56,763 | 0 | 58,440 | 5,746 | 1,183 | 0 | 11,538 | 0 | 18,467 | 2,957 | 21,424 | |
| 1969 | 0 | 1,847 | 0 | 101,055 | 0 | 102,902 | 11,079 | 74,464 | 0 | 293,243 | 0 | 378,786 | 531,275 | 910,061 | |
| 1970 | 3,449 | 2,668 | 0 | 69,712 | 0 | 75,829 | 7,336 | 44,287 | 0 | 265,417 | 0 | 317,040 | 531,185 | 848,225 | |
| 1971 | 16,279 | 1,086 | (5,355) | 89,560 | 0 | 101,570 | 23,947 | 20,767 | (5,355) | 365,771 | 0 | 405,130 | (12,995) | 392,135 | |
| 1972 | 0 | 1,815 | 8,854 | 98,584 | 0 | 109,253 | 23,207 | (10,754) | 8,854 | 651,665 | 8 | 672,980 | 7,708 | 680,688 | |
| 1973 | 0 | 3,557 | 2,273 | 138,426 | 0 | 144,256 | 145,066 | 9,057 | (4,285) | 1,033,432 | 6,489 | 1,189,759 | 48,300 | 1,238,059 | |
| 1974 | 0 | (33) | (1,510) | 94,078 | 0 | 92,535 | 214,941 | (4,951) | 2,902 | 733,008 | 1,155 | 947,055 | 55,846 | 1,002,901 | |
| 1975 | 0 | 1,287 | (10,056) | 89,318 | 0 | 80,549 | 247,894 | (11,526) | (32,510) | 873,302 | 2,118 | 1,079,278 | 54,683 | 1,133,961 | |
| 1976 | 0 | 320 | 8,550 | 93,604 | 0 | 102,474 | 110,149 | (8,092) | 16,101 | 1,223,332 | 3,377 | 1,344,867 | (102,625) | 1,242,242 | |
| 1977 | 0 | 2,431 | 1,391 | 126,431 | 141 | 130,394 | 67,834 | 5,443 | (244,124) | 1,372,093 | 1,745 | 1,202,991 | (442,348) | 760,643 | |
| 1978 | 0 | 2,866 | 2,685 | 107,704 | 112 | 113,367 | 0 | 39,897 | (157,543) | 573,146 | 1,111 | 456,611 | (13,507) | 443,104 | |
| 1979 | 0 | 2,165 | (11,249) | 112,574 | 126 | 103,616 | 67,457 | (36,898) | 35,129 | 1,451,842 | 1,177 | 1,518,707 | 752,075 | 2,270,782 | |
| 1980 | 0 | 2,401 | 1,069 | 122,190 | 89 | 125,749 | 17,397 | 60,958 | (32,307) | 1,659,265 | 1,398 | 1,706,711 | (112,053) | 1,594,658 | |
| 1981 | 0 | 2,627 | 13,742 | 129,507 | 121 | 145,997 | 46,060 | 85,350 | 40,536 | 1,908,986 | 4,974 | 2,085,906 | (931,878) | 1,154,028 | |
| 1982 | 0 | 2,344 | (23,928) | 107,439 | 129 | 85,984 | 5,979 | 61,556 | 99,897 | 1,743,145 | 4,646 | 1,915,223 | 347,983 | 2,263,206 | |
| 1983 | 0 | 2,151 | (22,886) | 94,656 | 132 | 74,053 | 6,071 | 47,022 | (310,477) | 1,184,282 | 7,853 | 934,751 | 835,771 | 1,770,522 | |
| 1984 | 0 | 2,088 | 8,442 | 98,122 | 158 | 108,810 | 38,649 | 97,143 | (108,548) | 1,587,936 | 5,874 | 1,621,054 | 21,875 | 1,642,929 | |
| 1985 | 0 | 2,817 | (1,607) | 122,088 | 152 | 123,450 | 0 | 110,469 | 137,783 | 1,985,632 | 5,452 | 2,239,336 | (110,569) | 2,128,767 | |
| 1986 | 0 | 2,299 | (1,850) | 110,988 | 130 | 111,567 | 0 | 90,799 | 20,177 | 1,993,278 | 3,865 | 2,108,119 | 200,298 | 2,308,417 | |
| 1987 | 0 | 2,625 | (584) | 136,796 | 137 | 138,974 | 0 | 91,427 | (23,116) | 2,121,366 | 7,672 | 2,197,349 | (458,725) | 1,738,624 | |
| 1988 | 0 | 2,884 | (698) | 147,255 | 142 | 149,583 | 0 | 107,249 | (35,484) | 2,368,793 | 4,889 | 2,445,447 | (303,583) | 2,141,864 | |
| 1989 | 0 | 2,673 | 3,296 | 142,269 | 152 | 148,390 | 0 | 117,603 | (38,058) | 2,829,107 | 8,135 | 2,916,787 | 421,131 | 3,337,918 | |
| 1990 | 0 | 894 | 1,982 | 156,537 | 168 | 159,581 | 0 | 99,059 | (290,965) | 2,554,658 | 9,262 | 2,372,014 | (374,027) | 1,997,987 | |
| 1991 | 0 | 2,637 | (4,532) | 50,259 | 150 | 48,514 | 0 | 80,106 | (79,038) | 539,748 | 4,879 | 545,695 | 554,904 | 1,100,599 | |
| 1992 | 0 | 2,881 | 756 | 76,661 | 147 | 80,445 | 0 | 91,391 | (28,170) | 1,451,436 | 2,605 | 1,327,262 | 61,343 | 1,388,605 | |
| 1993 | 0 | 1,940 | (20,051) | 105,971 | 143 | 88,003 | 0 | 149,372 | (273,789) | 2,279,323 | 2,609 | 2,157,515 | 849,249 | 3,006,764 | |
| 1994 | 0 | 1,981 | 1,714 | 100,568 | 168 | 104,431 | 0 | 148,712 | (120,985) | 1,828,072 | 3,803 | 1,859,602 | (324,640) | 1,534,962 | |
| 1995 | 0 | 1,188 | (12,333) | 76,640 | 146 | 65,641 | 0 | 173,074 | (397,605) | 2,003,475 | 2,575 | 1,781,519 | 293,159 | 2,074,678 | |
| 1996 | 0 | 981 | (1,990) | 77,215 | 150 | 76,356 | 0 | 123,502 | 78,123 | 2,507,143 | 3,902 | 2,712,670 | 288,576 | 3,001,246 | |
| 1997 | 0 | 1,575 | 5,016 | 102,186 | 155 | 108,932 | 527 | 135,106 | (98,334) | 2,366,152 | 2,594 | 2,406,045 | (50,000) | 2,356,045 | |
| 1998 | 0 | 1,551 | 3,595 | 70,876 | 114 | 76,136 | 0 | 91,319 | (346,039) | 1,728,257 | 2,107 | 1,475,644 | 120,886 | 1,596,530 | |
| 1999 | 0 | 2,166 | 12,313 | 100,497 | 139 | 115,115 | 0 | 135,809 | (17,569) | 2,855,522 | 4,301 | 2,978,063 | (307,839) | 2,670,224 | |
| 2000 | 0 | 2,346 | (20,958) | 135,533 | 145 | 117,066 | 0 | 115,895 | (13,232) | 3,474,523 | 5,182 | 3,582,368 | (15,487) | 3,566,881 | |
| 2001 | 0 | 2,784 | 1,301 | 95,335 | 196 | 99,616 | 0 | 222,144 | (17,529) | 1,874,096 | 1,978 | 2,080,689 | 86,928 | 2,167,617 | |
| 2002 | 0 | 2,534 | (13,938) | 123,577 | 146 | 112,319 | 0 | 225,032 | 36,404 | 2,816,389 | 4,672 | 3,082,497 | (151,719) | 2,930,778 | |
| 2003 | 0 | 2,920 | (1,399) | 132,714 | 131 | 134,366 | 0 | 329,699 | (49,580) | 3,193,449 | 11,362 | 3,484,930 | 225,348 | 3,710,278 | |
| 2004 | 0 | 2,982 | (7,240) | 125,928 | 150 | 121,820 | 0 | 83,788 | (4,079) | 2,979,217 | 1,337 | 3,060,263 | 103,811 | 3,164,074 | |
| 2005 | 0 | 2,823 | (3,565) | 108,136 | 154 | 107,548 | 0 | 151,931 | (163,243) | 3,665,023 | 1,270 | 3,654,981 | 535,754 | 4,190,735 | |
| 2006 | 0 | 2,989 | (9,645) | 118,272 | 169 | 111,785 | 0 | 67,040 | (129,767) | 3,571,009 | 1,208 | 3,509,490 | 43,481 | 3,552,971 | |
| 2007 | 0 | 2,840 | 14,928 | 134,172 | 146 | 152,086 | 0 | 73,956 | 133,124 | 2,736,094 | 830 | 2,944,004 | (398,297) | 2,545,707 | |
| 2008 | 0 | 2,215 | 880 | 116,562 | 166 | 119,823 | 0 | 130,066 | (3,350) | 1,413,730 | 1,082 | 1,541,528 | (397,949) | 1,143,579 | |
| 2009 | 0 | 1,999 | (1,134) | 116,947 | 108 | 117,920 | 0 | 111,805 | (1,860) | 1,572,819 | 2,023 | 1,684,787 | 928,666 | 2,613,453 | |
| 2010 | 0 | 1,727 | 3,436 | 95,802 | 117 | 101,082 | 0 | 224,076 | 51,667 | 2,243,593 | 1,163 | 2,520,499 | 454,585 | 2,975,084 | |
| 2011 | 0 | 1,534 | (2,332) | 112,952 | 122 | 112,276 | 0 | 314,282 | (21,148) | 3,315,056 | 1,588 | 3,609,778 | 165,312 | 3,775,090 | |
| 2012 | 0 | 2,025 | 5,931 | 112,056 | 150 | 120,162 | 0 | 143,580 | 20,504 | 2,607,588 | 1,606 | 2,773,278 | (473,745) | 2,299,533 | |
| 2013 | 0 | 2,753 | (5,596) | 147,119 | 137 | 144,413 | 0 | 173,145 | (6,654) | 1,753,556 | 1,641 | 1,921,688 | (123,957) | 1,797,731 | |
| 2014 | 0 | 3,285 | 4,951 | 91,116 | 46 | 99,398 | 0 | 114,127 | 36,033 | 588,005 | 650 | 738,815 | 301,102 | 1,039,917 | |
| 2015 | 0 | 2,727 | (8,482) | 117,072 | 43 | 111,360 | 0 | 109,951 | (41,424) | 859,792 | 690 | 929,009 | (140,538) | 788,471 | |
| 2016 | 0 | 2,031 | 5,558 | 119,221 | 69 | 126,879 | 0 | 106,956 | (57,641) | 2,039,462 | 1,399 | 2,090,176 | 503,353 | 2,593,529 | |
| 2017 | 0 | 2,409 | (6,363) | 81,187 | 46 | 77,279 | 0 | 118,158 | 12,421 | 3,372,935 | 775 | 3,504,289 | (3,969) | 3,500,320 | |
| 2018 | 0 | 2,778 | (391) | 134,820 | 100 | 137,307 | 0 | 104,012 | 45,050 | 1,712,018 | 879 | 1,861,959 | 167,385 | 2,029,344 | |
| 2019 | 0 | 3,350 | 0 | 92,849 | 400 | 96,599 | 0 | 124,044 | 11,614 | 2,833,691 | 8,660 | 2,978,009 | (53,830) | 2,924,179 | |
| 2020 | 0 | 2,065 | (165) | 122,655 | 400 | 124,955 | 0 | 105,017 | (5,722) | 2,426,200 | 8,660 | 2,534,155 | (243,653) | 2,290,502 | |
| 2021 | 0 | 3,351 | 15 | 124,071 | 400 | 127,837 | 0 | 128,630 | (5,542) | 2,426,214 | 8,660 | 2,557,962 | 118,089 | 2,676,051 | |
| 2022 | 0 | 3,351 | 0 | 124,383 | 400 | 128,134 | 0 | 128,707 | (3,483) | 2,426,314 | 8,660 | 2,560,198 | (185,907) | 2,374,291 | |
| 2023 | 0 | 3,351 | 0 | 124,599 | 400 | 128,350 | 0 | 128,679 | (18,971) | 2,426,362 | 8,660 | 2,544,730 | 115,791 | 2,660,521 | |
| 2024 | 0 | 3,351 | 0 | 124,599 | 400 | 128,350 | 0 | 128,486 | 11,289 | 2,426,362 | 8,660 | 2,574,797 | 79,858 | 2,654,655 | |
| 2025 | 0 | 3,351 | 0 | 124,599 | 400 | 128,350 | 0 | 130,241 | (12,518) | 2,426,362 | 8,660 | 2,552,745 | (247,205) | 2,305,540 | |
| 2026 | 0 | 3,351 | 0 | | | | | | | | | | | | |

TABLE B-6 Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | |
|---------------|---------------------------------|--------------------|---------------------------|------------|--------|-----------|----------------------------|--------------------|---------------------------|------------|--------|-----------|
| | SAN LUIS DIVISION | | | | | | SOUTH SAN JOAQUIN DIVISION | | | | | |
| | Dos Amigos Pumping Plant | | | | | | Buena Vista Pumping Plant | | | | | |
| | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total |
| 1961 | [27] | [28] | [29] | [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 11,079 | 25,126 | 0 | 189,104 | 0 | 225,309 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 3,887 | 9,922 | 0 | 192,689 | 0 | 206,498 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 7,668 | 1,901 | 0 | 270,300 | 0 | 279,869 | 4,779 | 1,012 | 0 | 3 | 0 | 5,794 |
| 1971 | 23,207 | (12,030) | 0 | 545,869 | 0 | 557,046 | 7,853 | 8,399 | 0 | 101,512 | 0 | 117,764 |
| 1972 | 145,066 | (6,635) | (6,558) | 886,840 | 6,481 | 1,025,194 | 100,274 | 20,044 | (6,558) | 223,626 | 6,481 | 343,867 |
| 1973 | 214,941 | (6,778) | 1,329 | 635,716 | 1,147 | 846,355 | 204,638 | 35,695 | 1,329 | 311,096 | 1,147 | 553,905 |
| 1974 | 247,894 | (16,765) | (15,295) | 780,513 | 2,108 | 998,455 | 237,554 | 19,672 | (15,295) | 388,949 | 2,108 | 632,988 |
| 1975 | 110,149 | (12,144) | (693) | 1,126,152 | 3,358 | 1,226,822 | 103,352 | 26,342 | (693) | 672,531 | 3,358 | 804,890 |
| 1976 | 67,834 | (456) | (152,171) | 1,241,550 | 1,581 | 1,158,338 | 61,122 | 29,428 | (152,171) | 785,055 | 1,581 | 725,015 |
| 1977 | 0 | 26,359 | (116,219) | 463,970 | 737 | 374,847 | 0 | 25,173 | (116,219) | 271,944 | 560 | 181,458 |
| 1978 | 67,457 | 1,905 | 79,308 | 1,335,362 | 680 | 1,484,712 | 65,027 | 17,751 | 121,904 | 762,043 | 674 | 967,399 |
| 1979 | 17,397 | 33,884 | (51,299) | 1,530,926 | 685 | 1,531,593 | 12,302 | 46,157 | (51,299) | 737,714 | 502 | 745,376 |
| 1980 | 3,159 | 34,391 | (272,825) | 1,407,663 | 1,514 | 1,173,902 | 0 | 49,025 | (134,009) | 778,059 | 1,262 | 694,337 |
| 1981 | 46,060 | 36,962 | 23,359 | 1,775,179 | 4,348 | 1,885,908 | 0 | 38,942 | 23,359 | 1,077,322 | 4,112 | 1,143,735 |
| 1982 | 5,979 | 57,146 | 116,086 | 1,631,868 | 4,205 | 1,815,284 | 0 | 29,059 | 117,174 | 990,863 | 4,045 | 1,141,141 |
| 1983 | 6,071 | 63,583 | (101,155) | 1,085,804 | 7,475 | 1,061,778 | 0 | 40,205 | (101,155) | 593,920 | 7,291 | 540,261 |
| 1984 | 38,649 | 109,263 | (112,744) | 1,484,114 | 5,391 | 1,524,673 | 0 | 38,487 | (114,984) | 781,955 | 5,244 | 710,702 |
| 1985 | 0 | 86,772 | 138,898 | 1,858,111 | 4,936 | 2,088,717 | 0 | 42,838 | 139,689 | 992,606 | 4,804 | 1,179,937 |
| 1986 | 0 | 51,963 | 19,989 | 1,877,183 | 3,426 | 1,952,561 | 0 | 36,751 | 37,546 | 1,014,294 | 3,285 | 1,091,876 |
| 1987 | 0 | 64,827 | (25,707) | 1,978,945 | 7,121 | 2,025,186 | 0 | 30,495 | (25,522) | 1,027,361 | 6,937 | 1,039,271 |
| 1988 | 0 | 72,679 | (34,592) | 2,217,126 | 4,490 | 2,259,703 | 0 | 38,804 | (29,747) | 1,244,196 | 4,360 | 1,257,613 |
| 1989 | 0 | 90,090 | (29,411) | 2,679,845 | 7,652 | 2,748,176 | 0 | 29,594 | (60,826) | 1,532,625 | 7,490 | 1,508,883 |
| 1990 | 0 | 115,074 | (11,323) | 2,394,999 | 8,922 | 2,507,672 | 0 | 46,865 | (15,092) | 1,769,991 | 8,879 | 1,810,643 |
| 1991 | 0 | 92,227 | 9,325 | 489,348 | 4,605 | 595,505 | 0 | 39,274 | 96,506 | 446,916 | 4,560 | 587,256 |
| 1992 | 0 | 118,796 | (225,603) | 1,372,536 | 2,079 | 1,267,808 | 0 | 28,138 | (98,271) | 920,978 | 1,995 | 852,840 |
| 1993 | 0 | 136,432 | (220,537) | 2,170,494 | 1,864 | 2,088,253 | 0 | 14,186 | (128,363) | 908,200 | 1,676 | 795,699 |
| 1994 | 0 | 152,414 | (78,957) | 1,724,433 | 3,098 | 1,800,988 | 0 | 35,083 | (88,211) | 1,107,122 | 2,918 | 1,056,912 |
| 1995 | 0 | 137,937 | (12,473) | 1,921,666 | 1,711 | 2,048,841 | 0 | 33,963 | (16,431) | 706,742 | 1,669 | 725,943 |
| 1996 | 0 | 45,591 | 14,927 | 2,425,024 | 2,998 | 2,488,540 | 0 | 31,304 | 15,438 | 988,612 | 2,928 | 1,038,282 |
| 1997 | 527 | 107,033 | (66,814) | 2,247,628 | 2,090 | 2,290,464 | 0 | 42,670 | 40,852 | 1,054,461 | 2,076 | 1,140,059 |
| 1998 | 0 | 95,185 | (338,076) | 1,664,080 | 1,589 | 1,422,778 | 0 | 41,910 | (106,487) | 753,731 | 1,585 | 690,739 |
| 1999 | 0 | 95,262 | (2,778) | 2,750,154 | 3,285 | 2,845,923 | 0 | 48,502 | (2,807) | 1,131,826 | 3,279 | 1,180,800 |
| 2000 | 0 | 134,231 | 7,726 | 3,273,337 | 4,222 | 3,419,516 | 0 | 37,514 | 7,726 | 1,814,685 | 4,216 | 1,864,141 |
| 2001 | 0 | 150,830 | (18,830) | 1,615,776 | 1,218 | 1,748,994 | 0 | 31,361 | (18,830) | 1,318,835 | 1,211 | 1,332,577 |
| 2002 | 0 | 92,905 | 50,342 | 2,628,462 | 3,968 | 2,775,677 | 0 | 41,565 | 50,342 | 1,831,874 | 3,961 | 1,927,742 |
| 2003 | 0 | 85,360 | (48,181) | 2,893,333 | 10,656 | 2,941,168 | 0 | 43,352 | (48,181) | 1,909,192 | 10,645 | 1,915,008 |
| 2004 | 0 | 25,865 | 3,161 | 2,807,825 | 652 | 2,837,503 | 0 | 41,551 | 3,161 | 2,102,371 | 649 | 2,147,732 |
| 2005 | 0 | 62,569 | (159,678) | 3,423,490 | 581 | 3,326,962 | 0 | 35,019 | (159,678) | 1,846,180 | 559 | 1,722,080 |
| 2006 | 0 | (12,341) | (120,122) | 3,501,308 | 504 | 3,369,349 | 0 | 30,271 | (120,122) | 2,077,130 | 504 | 1,987,783 |
| 2007 | 0 | 47,736 | 118,196 | 2,419,032 | 312 | 2,585,276 | 0 | 43,400 | 118,196 | 2,002,793 | 305 | 2,164,694 |
| 2008 | 0 | 103,375 | (4,230) | 1,296,068 | 361 | 1,395,574 | 0 | 39,056 | (4,230) | 1,275,174 | 327 | 1,310,327 |
| 2009 | 0 | 76,206 | (726) | 1,318,452 | 1,367 | 1,395,299 | 0 | 32,900 | (726) | 1,217,847 | 1,295 | 1,251,316 |
| 2010 | 0 | 75,028 | 48,231 | 2,307,963 | 636 | 2,431,858 | 0 | 41,741 | 48,231 | 1,505,105 | 603 | 1,595,680 |
| 2011 | 0 | 66,937 | (18,816) | 3,343,960 | 870 | 3,392,951 | 0 | 39,914 | (18,816) | 1,820,268 | 742 | 1,842,108 |
| 2012 | 0 | 113,586 | 14,573 | 2,537,793 | 942 | 2,666,894 | 0 | 95,029 | 14,573 | 1,672,197 | 938 | 1,782,737 |
| 2013 | 0 | 174,857 | (1,058) | 1,549,837 | 836 | 1,724,472 | 0 | 105,771 | (1,058) | 1,275,717 | 795 | 1,381,225 |
| 2014 | 0 | 105,741 | 31,082 | 433,625 | 214 | 570,662 | 0 | 72,181 | 31,082 | 523,726 | 172 | 627,161 |
| 2015 | 0 | 103,380 | (32,942) | 724,850 | 155 | 795,443 | 0 | 46,903 | (32,942) | 738,410 | 151 | 752,522 |
| 2016 | 0 | 100,424 | (63,199) | 1,867,309 | 981 | 1,905,515 | 0 | 63,781 | (63,199) | 1,428,801 | 981 | 1,430,364 |
| 2017 | 0 | 116,906 | 18,784 | 3,493,854 | 351 | 3,629,895 | 0 | 103,689 | 18,784 | 2,084,736 | 300 | 2,207,509 |
| 2018 | 0 | 105,704 | 45,441 | 1,654,231 | 275 | 1,805,651 | 0 | 70,151 | 45,441 | 1,178,758 | 225 | 1,294,575 |
| 2019 | 0 | 74,472 | 11,614 | 2,751,893 | 7,210 | 2,845,189 | 0 | 45,149 | 11,614 | 1,590,347 | 7,010 | 1,654,120 |
| 2020 | 0 | 64,498 | (5,557) | 2,298,825 | 7,210 | 2,364,976 | 0 | 35,175 | (5,557) | 1,600,249 | 7,010 | 1,636,877 |
| 2021 | 0 | 70,572 | (5,557) | 2,297,423 | 7,210 | 2,369,648 | 0 | 41,249 | (5,557) | 1,600,249 | 7,010 | 1,642,951 |
| 2022 | 0 | 70,566 | (3,483) | 2,297,211 | 7,210 | 2,371,504 | 0 | 41,243 | (3,483) | 1,600,249 | 7,010 | 1,645,019 |
| 2023 | 0 | 70,557 | (18,971) | 2,297,043 | 7,210 | 2,355,839 | 0 | 41,234 | (18,971) | 1,600,249 | 7,010 | 1,629,522 |
| 2024 | 0 | 70,436 | 11,289 | 2,297,043 | 7,210 | 2,385,978 | 0 | 41,113 | 11,289 | 1,600,249 | 7,010 | 1,659,661 |
| 2025 | 0 | 70,499 | (12,518) | 2,297,043 | 7,210 | 2,362,234 | 0 | 41,176 | (12,518) | 1,600,249 | 7,010 | 1,635,917 |
| 2026 | 0 | 70,511 | 24,308 | 2,297,043 | 7,210 | 2,399,072 | 0 | 41,188 | 24,308 | 1,600,249 | 7,010 | 1,672,755 |
| 2027 | 0 | 70,424 | (17,799) | 2,297,043 | 7,210 | 2,356,878 | 0 | 41,101 | (17,799) | 1,600,249 | 7,010 | 1,630,561 |
| 2028 | 0 | 70,564 | 12,291 | 2,297,043 | 7,210 | 2,387,108 | 0 | 41,241 | 12,291 | 1,600,249 | 7,010 | 1,660,791 |
| 2029 | 0 | 70,491 | (9,046) | 2,297,043 | 7,210 | 2,365,698 | 0 | 41,168 | (9,046) | 1,600,249 | 7,010 | 1,639,381 |
| 2030 | 0 | 70,555 | 20,756 | 2,297,043 | 7,210 | 2,395,564 | 0 | 41,232 | 20,756 | 1,600,249 | 7,010 | 1,669,247 |
| 2031 | 0 | 70,427 | (97,726) | 2,297,043 | 7,210 | 2,276,954 | 0 | 41,104 | (97,726) | 1,600,249 | 7,010 | 1,550,637 |
| 2032 | 0 | 70,029 | 84,999 | 2,297,043 | 7,210 | 2,459,281 | 0 | 40,706 | 84,999 | 1,600,249 | 7,010 | 1,732,964 |
| 2033 | 0 | 70,234 | (94,652) | 2,297,043 | 7,210 | 2,279,835 | 0 | 40,911 | (94,652) | 1,600,249 | 7,010 | 1,553,518 |
| 2034 | 0 | 69,726 | 69,593 | 2,297,043 | 7,210 | 2,443,572 | 0 | 40,403 | 69,593 | 1,600,249 | 7,010 | 1,717,255 |
| 2035 | 0 | 69,066 | (242,659) | 2,297,043 | 7,210 | 2,130,660 | 0 | 39,743 | (242,659) | 1,600,249 | 7,010 | 1,404,343 |

TABLE B-6 Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (acre-feet)

Sheet 4 of 10

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | | |
|---------------|--|--------------------|---------------------------|------------------|--------------|------------------|------------------------|--------------------|---------------------------|------------------|--------------|------------------|--|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | | | | |
| | Teerink Pumping Plant | | | | | | Chrisman Pumping Plant | | | | | | |
| | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total | |
| | [39] | [40] | [41] | Water Supply | Recreation | [44] | [45] | [46] | [47] | Water Supply | Recreation | [50] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1970 | 198 | 2 | 0 | 0 | 0 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1971 | 7,533 | (112) | 0 | 3,552 | 0 | 10,973 | 7,366 | (159) | 0 | 0 | 0 | 7,207 | |
| 1972 | 100,274 | 12,765 | (6,558) | 84,955 | 6,481 | 197,917 | 100,274 | 13,160 | (6,558) | 78,891 | 6,481 | 192,248 | |
| 1973 | 204,638 | 21,543 | 1,329 | 229,685 | 1,147 | 458,342 | 204,638 | 32,414 | 1,329 | 209,769 | 1,147 | 449,297 | |
| 1974 | 237,554 | 11,843 | (15,295) | 336,198 | 2,108 | 572,408 | 237,554 | 17,655 | (15,295) | 318,198 | 2,108 | 560,220 | |
| 1975 | 103,352 | 19,763 | (693) | 621,706 | 3,358 | 747,486 | 103,352 | 25,326 | (693) | 586,286 | 3,358 | 717,629 | |
| 1976 | 61,122 | 18,552 | (152,171) | 740,486 | 1,581 | 669,570 | 61,122 | 21,468 | (152,171) | 700,935 | 1,581 | 632,935 | |
| 1977 | 0 | 16,415 | (116,219) | 246,349 | 560 | 147,105 | 0 | 15,698 | (116,219) | 240,191 | 560 | 140,230 | |
| 1978 | 65,027 | 28,820 | 121,904 | 631,121 | 674 | 847,546 | 65,027 | 26,705 | 121,904 | 599,973 | 674 | 814,283 | |
| 1979 | 12,302 | 50,663 | (51,299) | 625,561 | 502 | 637,729 | 12,302 | 50,580 | (51,299) | 586,959 | 502 | 599,044 | |
| 1980 | 0 | 48,825 | (134,009) | 696,405 | 1,262 | 612,483 | 0 | 58,085 | (134,009) | 658,588 | 1,262 | 583,926 | |
| 1981 | 0 | 51,600 | 23,359 | 998,307 | 4,112 | 1,077,378 | 0 | 48,844 | 23,359 | 959,274 | 4,112 | 1,035,589 | |
| 1982 | 0 | 44,353 | 117,332 | 878,486 | 4,045 | 1,044,216 | 0 | 33,541 | 117,277 | 830,704 | 4,045 | 985,567 | |
| 1983 | 0 | 43,961 | (101,155) | 487,915 | 7,291 | 438,012 | 0 | 34,698 | (101,155) | 450,489 | 7,291 | 391,323 | |
| 1984 | 0 | 45,999 | (115,088) | 632,262 | 5,244 | 568,417 | 0 | 33,132 | (115,092) | 582,414 | 5,244 | 505,698 | |
| 1985 | 0 | 50,106 | 139,973 | 854,684 | 4,804 | 1,049,567 | 0 | 54,831 | 139,954 | 810,606 | 4,804 | 1,010,195 | |
| 1986 | 0 | 38,747 | 37,546 | 882,300 | 3,285 | 961,878 | 0 | 41,421 | 37,546 | 839,839 | 3,285 | 922,091 | |
| 1987 | 0 | 47,815 | (25,522) | 897,905 | 6,937 | 927,135 | 0 | 33,195 | (25,522) | 863,157 | 6,937 | 877,767 | |
| 1988 | 0 | 53,815 | (29,747) | 1,097,643 | 4,360 | 1,126,071 | 0 | 39,775 | (29,747) | 1,055,649 | 4,360 | 1,070,037 | |
| 1989 | 0 | 49,088 | (60,826) | 1,382,599 | 7,490 | 1,378,351 | 0 | 42,307 | (60,826) | 1,339,358 | 7,490 | 1,328,329 | |
| 1990 | 0 | 66,868 | (15,092) | 1,627,246 | 8,879 | 1,687,901 | 0 | 56,663 | (15,092) | 1,590,893 | 8,879 | 1,641,343 | |
| 1991 | 0 | 40,564 | 105,176 | 446,148 | 4,560 | 596,448 | 0 | 34,016 | 105,176 | 446,148 | 4,560 | 589,900 | |
| 1992 | 0 | 31,820 | (92,123) | 844,376 | 1,995 | 786,068 | 0 | 34,477 | (92,123) | 820,133 | 1,995 | 764,482 | |
| 1993 | 0 | 27,158 | (127,738) | 799,143 | 1,676 | 700,239 | 0 | 28,614 | (127,738) | 771,146 | 1,676 | 673,698 | |
| 1994 | 0 | 50,802 | (88,211) | 1,007,214 | 2,918 | 972,723 | 0 | 57,203 | (88,211) | 977,703 | 2,918 | 949,613 | |
| 1995 | 0 | 48,705 | (16,431) | 586,829 | 1,669 | 620,772 | 0 | 36,309 | (16,431) | 560,695 | 1,669 | 582,242 | |
| 1996 | 0 | 58,437 | 15,438 | 836,819 | 2,928 | 913,622 | 0 | 43,710 | 15,438 | 800,633 | 2,928 | 862,709 | |
| 1997 | 0 | 73,656 | 40,852 | 918,124 | 2,076 | 1,034,708 | 0 | 62,275 | 40,852 | 881,843 | 2,076 | 987,046 | |
| 1998 | 0 | 61,137 | (106,487) | 656,796 | 1,585 | 613,031 | 0 | 47,523 | (106,487) | 628,084 | 1,585 | 570,705 | |
| 1999 | 0 | 77,334 | (2,807) | 1,011,608 | 3,279 | 1,089,414 | 0 | 55,514 | (2,807) | 974,807 | 3,279 | 1,030,793 | |
| 2000 | 0 | 87,084 | 7,726 | 1,691,120 | 4,216 | 1,790,146 | 0 | 49,690 | 7,726 | 1,651,057 | 4,216 | 1,712,689 | |
| 2001 | 0 | 71,588 | (18,830) | 1,233,862 | 1,211 | 1,287,831 | 0 | 54,742 | (18,830) | 1,202,670 | 1,211 | 1,239,793 | |
| 2002 | 0 | 108,309 | 50,342 | 1,740,813 | 3,961 | 1,903,425 | 0 | 69,443 | 50,342 | 1,699,261 | 3,961 | 1,823,007 | |
| 2003 | 0 | 106,973 | (48,181) | 1,825,617 | 10,645 | 1,895,054 | 0 | 57,291 | (48,181) | 1,789,015 | 10,645 | 1,808,770 | |
| 2004 | 0 | 122,559 | 3,161 | 2,032,528 | 649 | 2,158,897 | 0 | 60,847 | 3,161 | 1,992,344 | 649 | 2,057,001 | |
| 2005 | 0 | 99,523 | (159,678) | 1,751,799 | 559 | 1,692,203 | 0 | 53,502 | (159,678) | 1,711,929 | 559 | 1,606,312 | |
| 2006 | 0 | 128,022 | (120,122) | 1,967,163 | 504 | 1,975,567 | 0 | 46,463 | (120,122) | 1,920,919 | 504 | 1,847,764 | |
| 2007 | 0 | 139,502 | 118,196 | 1,910,800 | 305 | 2,168,803 | 0 | 59,454 | 118,196 | 1,863,410 | 305 | 2,041,365 | |
| 2008 | 0 | 97,209 | (4,230) | 1,201,345 | 327 | 1,294,651 | 0 | 51,709 | (4,230) | 1,168,316 | 327 | 1,216,122 | |
| 2009 | 0 | 88,574 | (726) | 1,169,477 | 1,295 | 1,258,620 | 0 | 43,229 | (726) | 1,146,258 | 1,295 | 1,190,056 | |
| 2010 | 0 | 90,711 | 48,231 | 1,409,122 | 603 | 1,548,667 | 0 | 58,174 | 48,231 | 1,389,990 | 603 | 1,496,998 | |
| 2011 | 0 | 114,286 | (18,816) | 1,695,956 | 742 | 1,792,168 | 0 | 67,210 | (18,816) | 1,653,798 | 742 | 1,702,934 | |
| 2012 | 0 | 114,502 | 14,573 | 1,537,522 | 938 | 1,667,535 | 0 | 70,999 | 14,573 | 1,510,007 | 938 | 1,596,517 | |
| 2013 | 0 | 116,975 | (1,058) | 1,190,730 | 795 | 1,307,442 | 0 | 69,572 | (1,058) | 1,162,989 | 795 | 1,232,298 | |
| 2014 | 0 | 70,655 | 31,082 | 489,254 | 172 | 591,163 | 0 | 52,458 | 31,082 | 484,432 | 172 | 568,144 | |
| 2015 | 0 | 67,819 | (32,942) | 738,123 | 151 | 773,151 | 0 | 56,466 | (32,942) | 733,481 | 151 | 757,156 | |
| 2016 | 0 | 106,907 | (63,199) | 1,365,032 | 981 | 1,409,721 | 0 | 83,653 | (63,199) | 1,352,680 | 981 | 1,374,115 | |
| 2017 | 0 | 127,631 | 18,784 | 1,948,816 | 300 | 2,095,531 | 0 | 114,305 | 18,784 | 1,903,244 | 300 | 2,036,633 | |
| 2018 | 0 | 86,871 | 45,441 | 1,072,913 | 225 | 1,205,450 | 0 | 76,849 | 45,441 | 1,055,958 | 225 | 1,178,473 | |
| 2019 | 0 | 41,519 | 11,614 | 1,561,108 | 7,010 | 1,621,251 | 0 | 41,269 | 11,614 | 1,545,897 | 7,010 | 1,605,790 | |
| 2020 | 0 | 31,545 | (5,557) | 1,520,196 | 7,010 | 1,553,194 | 0 | 31,295 | (5,557) | 1,493,796 | 7,010 | 1,526,544 | |
| 2021 | 0 | 37,619 | (5,557) | 1,520,196 | 7,010 | 1,559,268 | 0 | 37,369 | (5,557) | 1,493,796 | 7,010 | 1,532,618 | |
| 2022 | 0 | 37,613 | (3,483) | 1,520,196 | 7,010 | 1,561,336 | 0 | 37,363 | (3,483) | 1,493,796 | 7,010 | 1,534,686 | |
| 2023 | 0 | 37,604 | (18,971) | 1,520,196 | 7,010 | 1,545,839 | 0 | 37,354 | (18,971) | 1,493,796 | 7,010 | 1,519,189 | |
| 2024 | 0 | 37,483 | 11,289 | 1,520,196 | 7,010 | 1,575,978 | 0 | 37,233 | 11,289 | 1,493,796 | 7,010 | 1,549,328 | |
| 2025 | 0 | 37,546 | (12,518) | 1,520,196 | 7,010 | 1,552,234 | 0 | 37,296 | (12,518) | 1,493,796 | 7,010 | 1,525,584 | |
| 2026 | 0 | 37,558 | 24,308 | 1,520,196 | 7,010 | 1,589,072 | 0 | 37,308 | 24,308 | 1,493,796 | 7,010 | 1,562,422 | |
| 2027 | 0 | 37,471 | (17,799) | 1,520,196 | 7,010 | 1,546,878 | 0 | 37,221 | (17,799) | 1,493,796 | 7,010 | 1,520,228 | |
| 2028 | 0 | 37,611 | 12,291 | 1,520,196 | 7,010 | 1,577,108 | 0 | 37,361 | 12,291 | 1,493,796 | 7,010 | 1,550,458 | |
| 2029 | 0 | 37,538 | (9,046) | 1,520,196 | 7,010 | 1,555,698 | 0 | 37,288 | (9,046) | 1,493,796 | 7,010 | 1,529,048 | |
| 2030 | 0 | 37,602 | 20,756 | 1,520,196 | 7,010 | 1,585,564 | 0 | 37,352 | 20,756 | 1,493,796 | 7,010 | 1,558,914 | |
| 2031 | 0 | 37,474 | (97,726) | 1,520,196 | 7,010 | 1,466,954 | 0 | 37,224 | (97,726) | 1,493,796 | 7,010 | 1,440,304 | |
| 2032 | 0 | 37,076 | 84,999 | 1,520,196 | 7,010 | 1,649,281 | 0 | 36,826 | 84,999 | 1,493,796 | 7,010 | 1,622,631 | |
| 2033 | 0 | 37,281 | (94,652) | 1,520,196 | 7,010 | 1,469,835 | 0 | 37,031 | (94,652) | 1,493,796 | 7,010 | 1,443,185 | |
| 2034 | 0 | 36,773 | 69,593 | 1,520,196 | 7,010 | 1,633,572 | 0 | 36,523 | 69,593 | 1,493,796 | 7,010 | 1,606,922 | |
| 2035 | 0 | 36,113 | (242,659) | 1,520,196 | 7,010 | 1,320,660 | 0 | 35,863 | (242,659) | 1,493,796 | 7,010 | 1,294,010 | |

TABLE B-6 Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (acre-feet)

Sheet 5 of 10

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | |
|---------------|---------------------------------|--------------------|---------------------------|------------|--------|-----------|---------------------|--------------------|---------------------------|------------|-------|-----------|
| | TEHACHAPI DIVISION | | | | | | MOJAVE DIVISION | | | | | |
| | Edmonston Pumping Plant | | | | | | Alamo Pumping Plant | | | | | |
| | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total |
| 1961 | [51] | [52] | [53] | [54] | [55] | [56] | [57] | [58] | [59] | [60] | [61] | [62] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 5,446 | 8 | 0 | 0 | 0 | 5,454 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 100,274 | 16,067 | (6,558) | 74,123 | 6,481 | 190,387 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 204,638 | 34,051 | 1,329 | 207,808 | 1,147 | 448,973 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 237,554 | 18,181 | (15,295) | 313,634 | 2,108 | 556,182 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 103,352 | 20,183 | (693) | 573,219 | 3,358 | 699,419 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 61,122 | 21,096 | (152,171) | 685,768 | 1,581 | 617,396 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 18,424 | (116,219) | 236,086 | 560 | 138,851 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 65,027 | 20,887 | 121,904 | 590,329 | 674 | 798,821 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 12,302 | 46,332 | (51,299) | 568,338 | 502 | 576,175 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 52,967 | (134,009) | 639,743 | 1,262 | 559,963 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 40,602 | 23,359 | 938,482 | 4,112 | 1,006,555 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 37,244 | 117,296 | 812,206 | 4,045 | 970,791 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 40,690 | (101,155) | 431,182 | 7,291 | 378,008 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 42,112 | (115,214) | 556,830 | 5,244 | 488,972 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 45,265 | 139,988 | 792,477 | 4,804 | 982,534 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 36,918 | 37,546 | 823,067 | 3,285 | 900,816 | 0 | 14,735 | 12,258 | 429,864 | 1,508 | 458,365 |
| 1987 | 0 | 29,580 | (25,522) | 851,322 | 6,937 | 862,317 | 0 | 11,665 | (15,270) | 417,870 | 1,239 | 415,504 |
| 1988 | 0 | 42,017 | (29,747) | 1,044,737 | 4,360 | 1,061,367 | 0 | 21,696 | 1,101 | 537,568 | 971 | 561,336 |
| 1989 | 0 | 32,270 | (60,826) | 1,328,041 | 7,490 | 1,306,975 | 0 | 4,686 | (20,363) | 716,360 | 1,407 | 702,090 |
| 1990 | 0 | 42,198 | (15,092) | 1,579,466 | 8,879 | 1,615,451 | 0 | 8,898 | (5,916) | 788,111 | 1,388 | 792,481 |
| 1991 | 0 | 33,999 | 105,176 | 441,217 | 4,560 | 584,952 | 0 | 17,908 | 34,422 | 177,308 | 394 | 230,032 |
| 1992 | 0 | 23,121 | (92,123) | 809,771 | 1,995 | 742,764 | 0 | 14,873 | (17,115) | 374,110 | 423 | 372,291 |
| 1993 | 0 | 11,946 | (127,738) | 759,485 | 1,676 | 645,369 | 0 | 9,304 | (3,455) | 308,222 | 443 | 314,514 |
| 1994 | 0 | 40,808 | (88,211) | 960,815 | 2,918 | 916,330 | 0 | 21,837 | 3,395 | 469,996 | 430 | 495,658 |
| 1995 | 0 | 36,001 | (16,431) | 542,465 | 1,669 | 563,704 | 0 | 14,139 | (30,761) | 384,836 | 427 | 368,641 |
| 1996 | 0 | 37,357 | 15,438 | 779,918 | 2,928 | 835,641 | 0 | 7,247 | (11,410) | 493,852 | 565 | 490,254 |
| 1997 | 0 | 51,475 | 40,852 | 860,798 | 2,076 | 955,201 | 0 | 20,725 | 38,960 | 537,586 | 507 | 597,778 |
| 1998 | 0 | 48,601 | (106,487) | 607,301 | 1,585 | 551,000 | 0 | 21,456 | 16,361 | 398,385 | 363 | 436,565 |
| 1999 | 0 | 52,726 | (2,807) | 947,420 | 3,279 | 1,000,618 | 0 | 26,644 | (8,486) | 589,756 | 396 | 608,310 |
| 2000 | 0 | 43,072 | 7,726 | 1,627,123 | 4,216 | 1,682,137 | 0 | 8,983 | (10,472) | 958,997 | 449 | 957,957 |
| 2001 | 0 | 39,544 | (18,830) | 1,187,300 | 1,211 | 1,209,225 | 0 | 14,526 | 3,478 | 709,985 | 452 | 728,441 |
| 2002 | 0 | 60,037 | 50,342 | 1,680,514 | 3,961 | 1,794,854 | 0 | 15,190 | 8,398 | 901,230 | 490 | 925,308 |
| 2003 | 0 | 53,320 | (48,181) | 1,771,048 | 10,645 | 1,786,832 | 0 | 13,676 | (20,787) | 1,035,349 | 355 | 1,028,593 |
| 2004 | 0 | 57,962 | 3,161 | 1,970,391 | 649 | 2,032,163 | 0 | 15,581 | 17,207 | 1,120,384 | 171 | 1,153,343 |
| 2005 | 0 | 40,949 | (159,678) | 1,693,409 | 559 | 1,575,239 | 0 | 2,561 | (50,014) | 1,116,158 | 84 | 1,068,789 |
| 2006 | 0 | 52,291 | (120,122) | 1,898,070 | 504 | 1,830,743 | 0 | 13,170 | 8,653 | 1,281,524 | 98 | 1,303,445 |
| 2007 | 0 | 65,423 | 118,196 | 1,836,977 | 305 | 2,020,901 | 0 | 17,957 | (5,091) | 1,076,227 | 103 | 1,089,196 |
| 2008 | 0 | 50,959 | (4,230) | 1,146,056 | 327 | 1,193,112 | 0 | 14,592 | 5,383 | 614,224 | 80 | 634,279 |
| 2009 | 0 | 59,186 | (726) | 1,125,654 | 1,295 | 1,185,409 | 0 | 25,599 | (5,619) | 493,685 | 1,100 | 514,765 |
| 2010 | 0 | 60,181 | 48,231 | 1,369,128 | 603 | 1,478,143 | 0 | 32,025 | 6,964 | 956,888 | 363 | 996,240 |
| 2011 | 0 | 64,370 | (18,816) | 1,632,033 | 742 | 1,678,329 | 0 | 34,783 | (1,405) | 1,220,667 | 500 | 1,254,545 |
| 2012 | 0 | 65,684 | 14,573 | 1,486,712 | 938 | 1,567,907 | 0 | 22,523 | (229) | 892,938 | 550 | 915,782 |
| 2013 | 0 | 69,789 | (1,058) | 1,141,530 | 795 | 1,211,056 | 0 | 20,563 | 3,278 | 528,614 | 501 | 552,956 |
| 2014 | 0 | 43,179 | 31,082 | 465,759 | 172 | 540,192 | 0 | 16,120 | 41,923 | 160,225 | 81 | 218,349 |
| 2015 | 0 | 43,312 | (32,942) | 714,860 | 151 | 725,381 | 0 | 10,834 | (7,059) | 248,779 | 71 | 252,625 |
| 2016 | 0 | 41,071 | (63,199) | 1,330,078 | 981 | 1,308,931 | 0 | 6,898 | 7,625 | 785,607 | 163 | 800,293 |
| 2017 | 0 | 66,781 | 18,784 | 1,876,437 | 300 | 1,962,302 | 0 | 27,722 | (56,730) | 1,459,363 | 235 | 1,430,590 |
| 2018 | 0 | 41,613 | 45,441 | 1,029,370 | 225 | 1,116,649 | 0 | 6,170 | 56,121 | 659,479 | 155 | 721,925 |
| 2019 | 0 | 39,719 | 11,614 | 1,531,257 | 7,010 | 1,589,600 | 0 | 22,755 | 11,614 | 1,098,721 | 1,630 | 1,134,720 |
| 2020 | 0 | 29,745 | (5,557) | 1,471,039 | 7,010 | 1,502,237 | 0 | 18,091 | (5,205) | 920,465 | 1,630 | 934,981 |
| 2021 | 0 | 35,819 | (5,557) | 1,471,039 | 7,010 | 1,508,311 | 0 | 20,946 | (5,205) | 920,420 | 1,630 | 937,791 |
| 2022 | 0 | 35,813 | (3,483) | 1,471,039 | 7,010 | 1,510,379 | 0 | 20,940 | (3,434) | 920,372 | 1,630 | 939,508 |
| 2023 | 0 | 35,804 | (18,971) | 1,471,039 | 7,010 | 1,494,882 | 0 | 20,939 | (18,638) | 920,315 | 1,630 | 924,246 |
| 2024 | 0 | 35,683 | 11,289 | 1,471,039 | 7,010 | 1,525,021 | 0 | 20,881 | 21,309 | 920,315 | 1,630 | 964,135 |
| 2025 | 0 | 35,746 | (12,518) | 1,471,039 | 7,010 | 1,501,277 | 0 | 20,965 | (11,624) | 920,315 | 1,630 | 931,286 |
| 2026 | 0 | 35,758 | 24,308 | 1,471,039 | 7,010 | 1,538,115 | 0 | 20,930 | 13,030 | 920,315 | 1,630 | 955,905 |
| 2027 | 0 | 35,671 | (17,799) | 1,471,039 | 7,010 | 1,495,921 | 0 | 20,861 | (6,161) | 920,315 | 1,630 | 936,645 |
| 2028 | 0 | 35,811 | 12,291 | 1,471,039 | 7,010 | 1,526,151 | 0 | 20,961 | 4,006 | 920,315 | 1,630 | 946,912 |
| 2029 | 0 | 35,738 | (9,046) | 1,471,039 | 7,010 | 1,504,741 | 0 | 20,955 | (913) | 920,315 | 1,630 | 941,987 |
| 2030 | 0 | 35,802 | 20,756 | 1,471,039 | 7,010 | 1,534,607 | 0 | 20,930 | 8,528 | 920,315 | 1,630 | 951,403 |
| 2031 | 0 | 35,674 | (97,726) | 1,471,039 | 7,010 | 1,415,997 | 0 | 20,956 | (31,057) | 920,315 | 1,630 | 911,844 |
| 2032 | 0 | 35,276 | 84,999 | 1,471,039 | 7,010 | 1,598,324 | 0 | 20,865 | 43,953 | 920,315 | 1,630 | 986,763 |
| 2033 | 0 | 35,481 | (94,652) | 1,471,039 | 7,010 | 1,418,878 | 0 | 20,854 | (37,929) | 920,315 | 1,630 | 904,870 |
| 2034 | 0 | 34,973 | 69,593 | 1,471,039 | 7,010 | 1,582,615 | 0 | 20,769 | 28,588 | 920,315 | 1,630 | 971,302 |
| 2035 | 0 | 34,313 | (242,659) | 1,471,039 | 7,010 | 1,269,703 | 0 | 20,892 | (49,219) | 920,315 | 1,630 | 893,618 |

TABLE B-6 Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (acre-feet)

Sheet 6 of 10

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | |
|---------------|---------------------------------|--------------------|---------------------------|------------|-------|-----------|--------------------------|--------------------|---------------------------|------------|-------|-----------|
| | MOJAVE DIVISION (continued) | | | | | | | | | | | |
| | Pearblossom Pumping Plant | | | | | | Mojave Siphon Powerplant | | | | | |
| | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total |
| 1961 | [63] | [64] | [65] | [66] | [67] | [68] | [69] | [70] | [71] | [72] | [73] | [74] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 21 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 35,243 | 5,282 | (153) | 1,794 | 0 | 42,166 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 80,177 | 21,522 | (2,700) | 52,201 | 72 | 151,272 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 76,694 | 10,847 | (11,149) | 102,839 | 44 | 179,275 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 10,000 | 2,364 | (8,397) | 190,351 | 70 | 194,388 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 4,168 | 7,040 | (16,055) | 236,713 | 152 | 232,018 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 11,398 | (17,534) | 102,326 | 580 | 96,770 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 19,922 | 5,696 | 69,130 | 374,845 | 498 | 470,091 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 12,302 | 6,836 | (32,518) | 362,114 | 502 | 349,236 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 16,200 | 6,159 | 401,214 | 781 | 424,354 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 4,992 | (36,278) | 574,573 | 933 | 544,220 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 5,251 | 55,232 | 401,037 | 1,919 | 463,439 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 11,745 | (26,847) | 231,188 | 1,180 | 217,266 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 18,228 | 23,230 | 252,066 | 1,494 | 295,018 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 25,292 | (2,815) | 350,758 | 1,076 | 374,311 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 30,876 | 12,258 | 394,156 | 1,508 | 438,798 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 27,552 | (15,270) | 377,531 | 1,239 | 391,052 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 32,209 | 1,101 | 501,300 | 971 | 535,581 | 0 | 1,977 | 1,101 | 501,291 | 971 | 505,340 |
| 1989 | 0 | 31,500 | (20,363) | 661,189 | 1,407 | 673,733 | 0 | 29,110 | (20,363) | 661,100 | 1,407 | 671,254 |
| 1990 | 0 | 32,672 | (5,916) | 730,560 | 1,388 | 758,704 | 0 | 23,692 | (5,916) | 730,550 | 1,388 | 749,714 |
| 1991 | 0 | 15,209 | 34,774 | 163,913 | 394 | 214,290 | 0 | (543) | 34,774 | 163,913 | 394 | 198,538 |
| 1992 | 0 | 13,989 | (17,451) | 338,249 | 423 | 335,210 | 0 | (13,193) | (17,451) | 338,207 | 423 | 307,986 |
| 1993 | 0 | 9,779 | (3,455) | 255,117 | 443 | 261,884 | 0 | (11,922) | (3,455) | 255,117 | 443 | 240,183 |
| 1994 | 0 | 150 | 3,395 | 409,928 | 430 | 413,903 | 0 | 1,601 | 3,395 | 395,294 | 430 | 400,720 |
| 1995 | 0 | 6,820 | (29,282) | 328,882 | 427 | 306,847 | 0 | 10,458 | (29,282) | 321,387 | 427 | 302,990 |
| 1996 | 0 | 9,514 | (11,410) | 424,252 | 565 | 422,921 | 0 | (5,577) | (11,410) | 418,141 | 565 | 401,719 |
| 1997 | 0 | (1,124) | 38,960 | 461,563 | 507 | 499,906 | 0 | 5,171 | 38,960 | 452,525 | 507 | 497,163 |
| 1998 | 0 | (2,087) | 16,361 | 334,965 | 363 | 349,602 | 0 | 11,496 | 16,361 | 332,385 | 363 | 360,605 |
| 1999 | 0 | (1,154) | (8,486) | 505,624 | 396 | 496,380 | 0 | 11,065 | (8,486) | 498,919 | 396 | 501,894 |
| 2000 | 0 | (23,296) | (10,472) | 864,999 | 449 | 831,680 | 0 | 4,896 | (10,472) | 854,980 | 449 | 849,853 |
| 2001 | 0 | (9,304) | 3,478 | 635,316 | 452 | 629,942 | 0 | 7,403 | 3,478 | 632,420 | 452 | 643,753 |
| 2002 | 0 | 3,810 | 8,398 | 823,690 | 490 | 836,388 | 0 | 9,300 | 8,398 | 820,217 | 490 | 838,405 |
| 2003 | 0 | 2,814 | (20,787) | 962,488 | 355 | 944,870 | 0 | (6,586) | (20,787) | 941,713 | 355 | 914,695 |
| 2004 | 0 | (15,558) | 17,207 | 1,047,521 | 171 | 1,049,341 | 0 | 5,034 | 17,207 | 1,035,315 | 171 | 1,057,727 |
| 2005 | 0 | (18,967) | (50,014) | 1,043,564 | 84 | 974,667 | 0 | 827 | (50,014) | 1,025,453 | 84 | 976,350 |
| 2006 | 0 | (21,986) | 8,653 | 1,187,627 | 98 | 1,174,392 | 0 | (845) | 8,653 | 1,154,634 | 98 | 1,162,540 |
| 2007 | 0 | (13,055) | (5,091) | 975,802 | 103 | 957,759 | 0 | 3,060 | (5,091) | 956,281 | 103 | 954,353 |
| 2008 | 0 | 723 | 5,383 | 550,143 | 80 | 556,329 | 0 | 8,380 | 5,383 | 534,480 | 80 | 548,323 |
| 2009 | 0 | 3,807 | (5,619) | 431,289 | 1,100 | 430,577 | 0 | 10,520 | (5,619) | 411,075 | 1,100 | 417,076 |
| 2010 | 0 | 1,854 | 6,964 | 886,249 | 363 | 895,430 | 0 | 9,649 | 6,964 | 858,609 | 363 | 875,585 |
| 2011 | 0 | 7,953 | (1,405) | 1,114,556 | 500 | 1,121,604 | 0 | 13,506 | (1,405) | 1,080,734 | 500 | 1,093,335 |
| 2012 | 0 | 3,499 | (229) | 797,563 | 550 | 801,383 | 0 | 3,492 | (229) | 775,600 | 550 | 779,413 |
| 2013 | 0 | 6,273 | 3,278 | 466,095 | 501 | 476,147 | 0 | 12,172 | 3,278 | 460,089 | 501 | 476,040 |
| 2014 | 0 | 11,143 | 41,923 | 133,376 | 81 | 186,523 | 0 | 13,671 | 41,923 | 130,752 | 81 | 186,427 |
| 2015 | 0 | 7,067 | (7,059) | 229,244 | 71 | 229,323 | 0 | 9,953 | (7,059) | 221,321 | 71 | 224,286 |
| 2016 | 0 | 8,750 | 7,625 | 735,426 | 163 | 751,964 | 0 | 5,792 | 7,625 | 721,208 | 163 | 734,788 |
| 2017 | 0 | 22,451 | (56,730) | 1,332,138 | 235 | 1,298,094 | 0 | 7,679 | (56,730) | 1,309,118 | 235 | 1,260,302 |
| 2018 | 0 | 4,197 | 56,121 | 591,491 | 155 | 651,964 | 0 | 4,206 | 56,121 | 586,886 | 155 | 647,368 |
| 2019 | 0 | 17,405 | 11,614 | 1,022,187 | 1,430 | 1,052,636 | 0 | 13,935 | 11,614 | 1,004,813 | 1,430 | 1,031,792 |
| 2020 | 0 | 12,741 | (5,205) | 803,144 | 1,430 | 812,110 | 0 | 9,271 | (5,205) | 773,062 | 1,430 | 778,558 |
| 2021 | 0 | 15,596 | (5,205) | 803,152 | 1,430 | 814,973 | 0 | 12,126 | (5,205) | 773,062 | 1,430 | 781,413 |
| 2022 | 0 | 15,590 | (3,434) | 803,156 | 1,430 | 816,742 | 0 | 12,120 | (3,434) | 773,062 | 1,430 | 783,178 |
| 2023 | 0 | 15,589 | (18,638) | 803,168 | 1,430 | 801,549 | 0 | 12,119 | (18,638) | 773,062 | 1,430 | 767,973 |
| 2024 | 0 | 15,531 | 21,309 | 803,168 | 1,430 | 841,438 | 0 | 12,061 | 21,309 | 773,062 | 1,430 | 807,862 |
| 2025 | 0 | 15,615 | (11,624) | 803,168 | 1,430 | 808,589 | 0 | 12,145 | (11,624) | 773,062 | 1,430 | 775,013 |
| 2026 | 0 | 15,580 | 13,030 | 803,168 | 1,430 | 833,208 | 0 | 12,110 | 13,030 | 773,062 | 1,430 | 799,632 |
| 2027 | 0 | 15,511 | (6,161) | 803,168 | 1,430 | 813,948 | 0 | 12,041 | (6,161) | 773,062 | 1,430 | 780,372 |
| 2028 | 0 | 15,611 | 4,006 | 803,168 | 1,430 | 824,215 | 0 | 12,141 | 4,006 | 773,062 | 1,430 | 790,639 |
| 2029 | 0 | 15,605 | (913) | 803,168 | 1,430 | 819,290 | 0 | 12,135 | (913) | 773,062 | 1,430 | 785,714 |
| 2030 | 0 | 15,580 | 8,528 | 803,168 | 1,430 | 828,706 | 0 | 12,110 | 8,528 | 773,062 | 1,430 | 795,130 |
| 2031 | 0 | 15,606 | (31,057) | 803,168 | 1,430 | 789,147 | 0 | 12,136 | (31,057) | 773,062 | 1,430 | 755,571 |
| 2032 | 0 | 15,515 | 43,953 | 803,168 | 1,430 | 864,066 | 0 | 12,045 | 43,953 | 773,062 | 1,430 | 830,490 |
| 2033 | 0 | 15,504 | (37,929) | 803,168 | 1,430 | 782,173 | 0 | 12,034 | (37,929) | 773,062 | 1,430 | 748,597 |
| 2034 | 0 | 15,419 | 28,588 | 803,168 | 1,430 | 848,605 | 0 | 11,949 | 28,588 | 773,062 | 1,430 | 815,029 |
| 2035 | 0 | 15,542 | (49,219) | 803,168 | 1,430 | 770,921 | 0 | 12,072 | (49,219) | 773,062 | 1,430 | 737,345 |

TABLE B-6 Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|---------------------------------|--------------------|---------------------------|--------------|----------------|------------------------|--------------------|--------------------|-----------------------|-------|
| | SANTA ANA DIVISION | | | | | | | | | |
| | Devil Canyon Powerplant | | | | | Greenspot Pump Station | | | | |
| | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Water Supply | Recreation | Total | Initial Fill Water | Operational Losses | Water Supply Delivery | Total |
| [75] | [76] | [77] | [78] | [79] | [80] | [81] | [82] | [83] | [84] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 37 | 0 | 0 | 1,275 | 0 | 1,312 | 0 | 0 | 0 | 0 |
| 1973 | 40,848 | 14,745 | 0 | 51,812 | 0 | 107,405 | 0 | 0 | 0 | 0 |
| 1974 | 74,666 | 8,367 | (4,925) | 102,198 | 0 | 180,306 | 0 | 0 | 0 | 0 |
| 1975 | 10,000 | 1,995 | (6,719) | 189,526 | 0 | 194,802 | 0 | 0 | 0 | 0 |
| 1976 | 4,168 | 5,180 | (9,182) | 235,711 | 23 | 235,900 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 8,082 | (5,235) | 101,137 | 469 | 104,453 | 0 | 0 | 0 | 0 |
| 1978 | 14,820 | 3,754 | 21,686 | 373,636 | 481 | 414,377 | 0 | 0 | 0 | 0 |
| 1979 | 12,302 | 5,620 | (27,107) | 356,854 | 485 | 348,154 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 9,468 | 12,714 | 395,975 | 742 | 418,899 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 8,401 | (23,448) | 569,088 | 807 | 554,848 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 6,012 | 44,469 | 399,799 | 1,798 | 452,078 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 8,597 | 5,188 | 230,277 | 1,078 | 245,140 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 12,861 | (850) | 250,938 | 1,414 | 264,363 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 14,325 | (8,791) | 349,336 | 956 | 355,826 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 9,486 | 8,339 | 392,650 | 1,378 | 411,853 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 7,923 | (11,335) | 375,451 | 1,118 | 373,157 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 11,090 | 2,238 | 499,285 | 861 | 513,474 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 13,116 | (5,487) | 658,730 | 1,301 | 667,660 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 13,439 | (4,622) | 728,723 | 1,281 | 738,821 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 10,836 | 18,308 | 161,032 | 340 | 190,516 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 9,157 | (9,084) | 328,354 | 371 | 328,798 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 5,602 | 5,593 | 244,678 | 364 | 256,237 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 10,915 | (11,045) | 393,690 | 357 | 393,917 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 11,268 | 2,331 | 320,978 | 358 | 334,935 | 0 | 0 | 0 | 0 |
| 1996 | 0 | 9,496 | 13,015 | 417,656 | 494 | 440,661 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 8,087 | (19,685) | 451,874 | 416 | 440,692 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 6,700 | 16,643 | 332,198 | 310 | 355,851 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 9,784 | (4,177) | 497,787 | 341 | 503,735 | 0 | 0 | 0 | 0 |
| 2000 | 7,407 | (11,040) | 853,786 | 375 | 850,528 | 0 | 0 | 0 | 0 | 0 |
| 2001 | 9,324 | 8,183 | 631,363 | 374 | 649,244 | 0 | 0 | 0 | 0 | 0 |
| 2002 | 10,315 | 9,682 | 818,028 | 413 | 838,438 | 0 | 0 | 0 | 0 | 0 |
| 2003 | 9,198 | (18,298) | 922,901 | 260 | 914,061 | 0 | 0 | 4,526 | 4,526 | |
| 2004 | 11,166 | 15,150 | 1,033,309 | 85 | 1,059,710 | 0 | 0 | 3,798 | 3,798 | |
| 2005 | 4,500 | (63,441) | 1,010,247 | 0 | 951,306 | 0 | 0 | 3,686 | 3,686 | |
| 2006 | 8,208 | 7,571 | 1,153,993 | 0 | 1,169,772 | 0 | 0 | 7,775 | 7,775 | |
| 2007 | 8,216 | (5,872) | 953,803 | 0 | 956,147 | 0 | 0 | 12,168 | 12,168 | |
| 2008 | 10,599 | 7,759 | 533,221 | 0 | 551,579 | 0 | 0 | 14,408 | 14,408 | |
| 2009 | 10,035 | (5,600) | 410,032 | 1,025 | 415,492 | 0 | 0 | 20,542 | 20,542 | |
| 2010 | 6,275 | 5,344 | 851,786 | 307 | 863,712 | 0 | 0 | 18,395 | 18,395 | |
| 2011 | 7,359 | 2,371 | 1,066,088 | 417 | 1,076,235 | 0 | 0 | 20,586 | 20,586 | |
| 2012 | (1,942) | (2,225) | 771,982 | 459 | 768,274 | 0 | 0 | 23,791 | 23,791 | |
| 2013 | 3,306 | 3,042 | 458,221 | 416 | 464,985 | 0 | 0 | 20,560 | 20,560 | |
| 2014 | 9,919 | 42,495 | 129,317 | 27 | 181,758 | 0 | 0 | 9,843 | 9,843 | |
| 2015 | 8,923 | (3,561) | 220,068 | 35 | 225,465 | 0 | 0 | 9,791 | 9,791 | |
| 2016 | (2,942) | 3,074 | 711,654 | 107 | 711,893 | 0 | 0 | 22,896 | 22,896 | |
| 2017 | (8,690) | (53,233) | 1,297,152 | 150 | 1,235,379 | 0 | 0 | 6,682 | 6,682 | |
| 2018 | 3,164 | 53,152 | 585,658 | 95 | 642,069 | 0 | 0 | 4,241 | 4,241 | |
| 2019 | 9,812 | 11,614 | 1,002,791 | 1,250 | 1,025,467 | 0 | 0 | 5,798 | 5,798 | |
| 2020 | 6,576 | 0 | 769,182 | 1,250 | 777,008 | 0 | 0 | 0 | 0 | |
| 2021 | 8,486 | 0 | 769,182 | 1,250 | 778,918 | 0 | 0 | 0 | 0 | |
| 2022 | 8,486 | 13,735 | 769,182 | 1,250 | 792,653 | 0 | 0 | 0 | 0 | |
| 2023 | 8,482 | (8,417) | 769,182 | 1,250 | 770,497 | 0 | 0 | 0 | 0 | |
| 2024 | 8,462 | 689 | 769,182 | 1,250 | 779,583 | 0 | 0 | 0 | 0 | |
| 2025 | 8,489 | 4,591 | 769,182 | 1,250 | 783,512 | 0 | 0 | 0 | 0 | |
| 2026 | 8,475 | (3,819) | 769,182 | 1,250 | 775,088 | 0 | 0 | 0 | 0 | |
| 2027 | 8,479 | 745 | 769,182 | 1,250 | 779,656 | 0 | 0 | 0 | 0 | |
| 2028 | 8,481 | (5,355) | 769,182 | 1,250 | 773,558 | 0 | 0 | 0 | 0 | |
| 2029 | 8,481 | 2,909 | 769,182 | 1,250 | 781,822 | 0 | 0 | 0 | 0 | |
| 2030 | 8,480 | 296 | 769,182 | 1,250 | 779,208 | 0 | 0 | 0 | 0 | |
| 2031 | 8,475 | (1,976) | 769,182 | 1,250 | 776,931 | 0 | 0 | 0 | 0 | |
| 2032 | 8,449 | 18,821 | 769,182 | 1,250 | 797,702 | 0 | 0 | 0 | 0 | |
| 2033 | 8,449 | (23,419) | 769,182 | 1,250 | 755,462 | 0 | 0 | 0 | 0 | |
| 2034 | 8,443 | 21,651 | 769,182 | 1,250 | 800,526 | 0 | 0 | 0 | 0 | |
| 2035 | 8,451 | (31,434) | 769,182 | 1,250 | 747,449 | 0 | 0 | 0 | 0 | |

TABLE B-6 Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | |
|---------------|----------------------------------|--------------------|-----------------------|---------------|----------------------------|--------------------|-----------------------|---------------|----------------------------|--------------------|-----------------------|---------------|
| | SANTA ANA DIVISION (continued) | | | | | | | | | | | |
| | Citrus Pump Station ^c | | | | Crafton Hills Pump Station | | | | Cherry Valley Pump Station | | | |
| | Initial Fill Water | Operational Losses | Water Supply Delivery | Total | Initial Fill Water | Operational Losses | Water Supply Delivery | Total | Initial Fill Water | Operational Losses | Water Supply Delivery | Total |
| [85] | [86] | [87] | [88] | [88] | [89] | [90] | [91] | [92] | [93] | [94] | [95] | [96] |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 0 | 2,733 | 2,733 | 0 | 0 | 116 | 116 |
| 2004 | 0 | 0 | 0 | 0 | 0 | 0 | 3,212 | 3,212 | 0 | 0 | 841 | 841 |
| 2005 | 0 | 0 | 0 | 0 | 0 | 0 | 2,727 | 2,727 | 0 | 0 | 692 | 692 |
| 2006 | 0 | 0 | 0 | 0 | 0 | 0 | 6,892 | 6,892 | 0 | 0 | 807 | 807 |
| 2007 | 0 | 0 | 0 | 0 | 0 | 0 | 9,038 | 9,038 | 0 | 0 | 177 | 177 |
| 2008 | 0 | 0 | 0 | 0 | 0 | 0 | 13,728 | 13,728 | 0 | 0 | 1,042 | 1,042 |
| 2009 | 0 | 0 | 0 | 0 | 0 | 0 | 16,463 | 16,463 | 0 | 0 | 1,898 | 1,898 |
| 2010 | 0 | 0 | 0 | 0 | 0 | 0 | 17,778 | 17,778 | 0 | 0 | 5,685 | 5,685 |
| 2011 | 0 | 0 | 0 | 0 | 0 | 0 | 19,887 | 19,887 | 0 | 0 | 9,290 | 9,290 |
| 2012 | 0 | 0 | 0 | 0 | 0 | 0 | 20,614 | 20,614 | 0 | 0 | 11,010 | 11,010 |
| 2013 | 0 | 0 | 0 | 0 | 0 | 0 | 17,526 | 17,526 | 0 | 0 | 9,445 | 9,445 |
| 2014 | 0 | 0 | 0 | 0 | 0 | 0 | 9,468 | 9,468 | 0 | 0 | 5,044 | 5,044 |
| 2015 | 0 | 0 | 0 | 0 | 0 | 0 | 9,409 | 9,409 | 0 | 0 | 3,481 | 3,481 |
| 2016 | 0 | 0 | 0 | 0 | 0 | 0 | 19,247 | 19,247 | 0 | 0 | 10,816 | 10,816 |
| 2017 | 0 | 0 | 31,763 | 31,763 | 0 | 0 | 31,763 | 31,763 | 0 | 0 | 14,946 | 14,946 |
| 2018 | 0 | 0 | 22,352 | 22,352 | 0 | 0 | 22,352 | 22,352 | 0 | 0 | 12,622 | 12,622 |
| 2019 | 0 | 0 | 13,202 | 13,202 | 0 | 0 | 13,202 | 13,202 | 0 | 0 | 9,715 | 9,715 |
| 2020 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2021 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2022 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2023 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2024 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2025 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2026 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2027 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2028 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2029 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2030 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2031 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2032 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2033 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2034 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |
| 2035 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 | 0 | 0 | 10,380 | 10,380 |

^c Citrus Pump Station began operation during calendar year 2017. For projected deliveries south of Greenspot Pump Station, flow is assumed to be through Citrus Pump Station.

TABLE B-6 Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | |
|---------------|---------------------------------|--------------------|---------------------------|----------------|--------------|----------------|--------------------|--------------------|---------------------------|----------------|--------------|----------------|
| | WEST BRANCH | | | | | | | | | | | |
| | Oso Pumping Plant | | | | | | Warne Powerplant | | | | | |
| | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Deliveries | | Total |
| | [97] | [98] | [99] | [100] | [101] | [102] | [103] | [104] | [105] | [106] | [107] | [108] |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 2,444 | 133 | 0 | 0 | 0 | 2,577 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 63,883 | 6,557 | (6,405) | 71,991 | 6,481 | 142,507 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 124,461 | 16,995 | 4,029 | 155,317 | 1,075 | 301,877 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 160,860 | 12,702 | (4,146) | 209,172 | 2,064 | 380,652 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 93,352 | 23,008 | 7,704 | 374,306 | 3,288 | 501,658 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 56,954 | 15,845 | (136,116) | 420,708 | 1,429 | 358,820 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 4,407 | (98,685) | 122,447 | (20) | 28,149 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 45,105 | 9,061 | 52,774 | 171,139 | 176 | 278,255 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 25,355 | (18,781) | 145,598 | 0 | 152,172 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 24,576 | (140,168) | 165,931 | 481 | 50,820 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 15,254 | 59,637 | 283,264 | 3,179 | 361,334 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 23,824 | 61,685 | 360,878 | 2,126 | 448,513 | 0 | 24,468 | 61,169 | 360,878 | 2,126 | 448,641 |
| 1983 | 0 | 23,601 | (74,308) | 166,995 | 6,111 | 122,399 | 0 | 20,780 | (74,308) | 166,995 | 6,111 | 119,578 |
| 1984 | 0 | 12,461 | (138,146) | 272,101 | 3,750 | 150,166 | 0 | 13,572 | (139,219) | 275,212 | 2,208 | 151,773 |
| 1985 | 0 | 28,257 | 142,219 | 403,097 | 3,728 | 577,301 | 0 | 29,286 | 141,492 | 403,097 | 874 | 574,749 |
| 1986 | 0 | 22,387 | 25,288 | 393,203 | 1,777 | 442,655 | 0 | 21,579 | 25,288 | 393,203 | 1,777 | 441,847 |
| 1987 | 0 | 18,164 | (10,252) | 433,452 | 5,698 | 447,062 | 0 | 20,885 | (10,252) | 433,452 | 5,698 | 449,783 |
| 1988 | 0 | 20,461 | (30,848) | 507,169 | 3,389 | 500,171 | 0 | 23,253 | (31,453) | 507,169 | 3,389 | 502,358 |
| 1989 | 0 | 27,914 | (40,463) | 611,681 | 6,083 | 605,215 | 0 | 27,131 | (40,463) | 611,681 | 6,083 | 604,432 |
| 1990 | 0 | 33,666 | (9,176) | 791,355 | 7,491 | 823,336 | 0 | 34,208 | (9,176) | 791,355 | 7,491 | 823,878 |
| 1991 | 0 | 16,460 | 70,754 | 263,909 | 4,166 | 355,289 | 0 | 16,908 | 70,754 | 263,909 | 4,166 | 355,737 |
| 1992 | 0 | 8,238 | (75,008) | 435,661 | 1,572 | 370,463 | 0 | 9,638 | (75,008) | 435,661 | 1,572 | 371,863 |
| 1993 | 0 | 2,674 | (124,283) | 451,263 | 1,233 | 330,887 | 0 | 1,922 | (124,283) | 451,257 | 1,233 | 330,129 |
| 1994 | 0 | 18,688 | (91,606) | 490,819 | 2,488 | 420,389 | 0 | 23,151 | (91,606) | 490,819 | 2,488 | 424,852 |
| 1995 | 0 | 21,775 | 14,330 | 157,629 | 1,242 | 194,976 | 0 | 15,860 | 14,330 | 157,629 | 1,242 | 189,061 |
| 1996 | 0 | 30,121 | 26,848 | 286,066 | 2,363 | 345,398 | 0 | 21,191 | 26,848 | 286,066 | 2,363 | 336,468 |
| 1997 | 0 | 30,468 | 1,892 | 323,212 | 1,569 | 357,141 | 0 | 23,437 | 1,892 | 323,201 | 1,569 | 350,099 |
| 1998 | 0 | 26,851 | (122,848) | 208,916 | 1,222 | 114,141 | 0 | 26,864 | (122,848) | 208,909 | 1,222 | 114,147 |
| 1999 | 0 | 25,690 | 5,679 | 357,664 | 2,883 | 391,916 | 0 | 21,822 | 8,120 | 357,664 | 2,883 | 390,489 |
| 2000 | 0 | 33,658 | 18,198 | 668,126 | 3,767 | 723,749 | 0 | 27,237 | 18,198 | 668,126 | 3,767 | 717,328 |
| 2001 | 0 | 24,551 | (22,308) | 477,315 | 759 | 480,317 | 0 | 17,404 | (22,308) | 477,315 | 759 | 473,170 |
| 2002 | 0 | 44,692 | 41,944 | 779,284 | 3,471 | 869,391 | 0 | 35,058 | 41,944 | 779,284 | 3,471 | 859,757 |
| 2003 | 0 | 39,495 | (27,394) | 735,699 | 10,290 | 758,090 | 0 | 28,167 | (27,394) | 735,699 | 10,290 | 746,762 |
| 2004 | 0 | 41,947 | (14,046) | 850,007 | 478 | 878,386 | 0 | 31,034 | (14,046) | 850,007 | 478 | 867,473 |
| 2005 | 0 | 38,154 | (109,664) | 577,251 | 475 | 506,216 | 0 | 29,111 | (109,664) | 577,251 | 475 | 497,173 |
| 2006 | 0 | 38,534 | (128,775) | 616,546 | 406 | 526,711 | 0 | 23,453 | (128,775) | 616,546 | 406 | 511,630 |
| 2007 | 0 | 46,921 | 123,287 | 760,750 | 202 | 931,160 | 0 | 29,978 | 123,287 | 760,750 | 202 | 914,217 |
| 2008 | 0 | 36,204 | (9,613) | 531,832 | 247 | 558,670 | 0 | 36,744 | (9,613) | 531,832 | 247 | 559,210 |
| 2009 | 0 | 33,295 | 4,893 | 631,969 | 195 | 670,352 | 0 | 30,564 | 4,893 | 631,969 | 195 | 667,621 |
| 2010 | 0 | 27,788 | 41,267 | 412,240 | 240 | 481,535 | 0 | 26,930 | 41,267 | 412,240 | 240 | 480,677 |
| 2011 | 0 | 29,227 | (17,411) | 411,366 | 242 | 423,424 | 0 | 29,363 | (17,411) | 411,366 | 242 | 423,560 |
| 2012 | 0 | 42,913 | 14,802 | 593,774 | 388 | 651,877 | 0 | 28,769 | 14,802 | 593,750 | 388 | 637,709 |
| 2013 | 0 | 49,029 | (4,336) | 612,912 | 294 | 657,899 | 0 | 30,918 | (4,336) | 612,865 | 294 | 639,741 |
| 2014 | 0 | 27,005 | (10,841) | 305,533 | 91 | 321,788 | 0 | 17,555 | (10,841) | 305,533 | 91 | 312,338 |
| 2015 | 0 | 32,430 | (25,883) | 466,081 | 80 | 472,708 | 0 | 22,165 | (25,883) | 466,081 | 80 | 462,443 |
| 2016 | 0 | 34,186 | (70,824) | 544,471 | 818 | 508,651 | 0 | 28,991 | (70,824) | 544,471 | 818 | 503,456 |
| 2017 | 0 | 38,989 | 75,514 | 417,074 | 65 | 531,642 | 0 | 37,047 | 75,514 | 416,564 | 65 | 529,190 |
| 2018 | 0 | 35,425 | (10,680) | 369,891 | 70 | 394,706 | 0 | 16,442 | (10,680) | 369,891 | 70 | 375,723 |
| 2019 | 0 | 16,914 | 0 | 432,536 | 5,380 | 454,830 | 0 | 15,004 | 0 | 432,536 | 5,380 | 452,920 |
| 2020 | 0 | 11,604 | (352) | 550,574 | 5,380 | 567,206 | 0 | 9,694 | (352) | 550,118 | 5,380 | 564,840 |
| 2021 | 0 | 14,823 | (352) | 550,619 | 5,380 | 570,470 | 0 | 12,913 | (352) | 550,118 | 5,380 | 568,059 |
| 2022 | 0 | 14,823 | (49) | 550,667 | 5,380 | 570,821 | 0 | 12,913 | (49) | 550,118 | 5,380 | 568,362 |
| 2023 | 0 | 14,815 | (333) | 550,724 | 5,380 | 570,586 | 0 | 12,905 | (333) | 550,118 | 5,380 | 568,070 |
| 2024 | 0 | 14,752 | (10,020) | 550,724 | 5,380 | 560,836 | 0 | 12,842 | (10,020) | 550,118 | 5,380 | 558,320 |
| 2025 | 0 | 14,731 | (894) | 550,724 | 5,380 | 569,941 | 0 | 12,821 | (894) | 550,118 | 5,380 | 567,425 |
| 2026 | 0 | 14,778 | 11,278 | 550,724 | 5,380 | 582,160 | 0 | 12,868 | 11,278 | 550,118 | 5,380 | 579,644 |
| 2027 | 0 | 14,760 | (11,638) | 550,724 | 5,380 | 559,226 | 0 | 12,850 | (11,638) | 550,118 | 5,380 | 556,710 |
| 2028 | 0 | 14,800 | 8,285 | 550,724 | 5,380 | 579,189 | 0 | 12,890 | 8,285 | 550,118 | 5,380 | 576,673 |
| 2029 | 0 | 14,733 | (8,133) | 550,724 | 5,380 | 562,704 | 0 | 12,823 | (8,133) | 550,118 | 5,380 | 560,188 |
| 2030 | 0 | 14,822 | 12,228 | 550,724 | 5,380 | 583,154 | 0 | 12,912 | 12,228 | 550,118 | 5,380 | 580,638 |
| 2031 | 0 | 14,668 | (66,669) | 550,724 | 5,380 | 504,103 | 0 | 12,758 | (66,669) | 550,118 | 5,380 | 501,587 |
| 2032 | 0 | 14,361 | 41,046 | 550,724 | 5,380 | 611,511 | 0 | 12,451 | 41,046 | 550,118 | 5,380 | 608,995 |
| 2033 | 0 | 14,577 | (56,723) | 550,724 | 5,380 | 513,958 | 0 | 12,667 | (56,723) | 550,118 | 5,380 | 511,442 |
| 2034 | 0 | 14,154 | 41,005 | 550,724 | 5,380 | 611,263 | 0 | 12,244 | 41,005 | 550,118 | 5,380 | 608,747 |
| 2035 | 0 | 13,371 | (193,440) | 550,724 | 5,380 | 376,035 | 0 | 11,461 | (193,440) | 550,118 | 5,380 | 373,519 |

TABLE B-6 Annual Water Quantities Conveyed through Each Pumping and Power Recovery Plant of Project Transportation Facilities (acre-feet)

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| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | | | | |
|---------------|---------------------------------|--------------------|---------------------------|--------------|------------|---------|---|--------------------|-----------------------|---------|---|--------------------|-----------------------|--------|
| | WEST BRANCH (continued) | | | | | | | COASTAL BRANCH | | | | | | |
| | Castaic Powerplant | | | | | | Las Perillas and Badger Hill Pumping Plants | | | | Devil's Den, Bluestone, and Polonio Pass Pumping Plants | | | |
| | Initial Fill Water | Operational Losses | Reservoir Storage Changes | Water Supply | Recreation | Total | Initial Fill Water | Operational Losses | Water Supply Delivery | Total | Initial Fill Water | Operational Losses | Water Supply Delivery | Total |
| 1961 | [109] | [110] | [111] | [112] | [113] | [114] | [115] | [116] | [117] | [118] | [119] | [120] | [121] | [122] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 210 | 873 | 79,039 | 80,122 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,042 | 62,064 | 63,106 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 638 | 83,649 | 84,287 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,455 | 110,971 | 114,426 | 0 | 0 | 0 | 0 |
| 1972 | 57,364 | 1,788 | (6,162) | 71,938 | 6,481 | 131,409 | 0 | 1,745 | 121,755 | 123,500 | 0 | 0 | 0 | 0 |
| 1973 | 37,198 | 6,430 | 4,542 | 155,297 | 1,075 | 204,542 | 0 | 5,479 | 78,645 | 84,124 | 0 | 0 | 0 | 0 |
| 1974 | 82,364 | 1,772 | (950) | 209,136 | 541 | 292,863 | 0 | 7,344 | 78,174 | 85,518 | 0 | 0 | 0 | 0 |
| 1975 | 90,460 | 5,002 | (1,534) | 374,280 | 1,563 | 469,771 | 0 | 5,819 | 85,216 | 91,035 | 0 | 0 | 0 | 0 |
| 1976 | 55,990 | (7,695) | (132,036) | 420,684 | 1,429 | 338,372 | 0 | 6,562 | 90,058 | 96,620 | 0 | 0 | 0 | 0 |
| 1977 | 0 | (1,485) | (102,532) | 122,447 | (20) | 18,410 | 0 | 5,777 | 40,579 | 46,356 | 0 | 0 | 0 | 0 |
| 1978 | 45,105 | (2,264) | 129,523 | 171,139 | 176 | 343,679 | 0 | 9,085 | 92,604 | 101,689 | 0 | 0 | 0 | 0 |
| 1979 | 0 | (2,339) | (20,400) | 145,598 | 0 | 122,859 | 0 | 10,896 | 123,155 | 134,051 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 991 | (118,026) | 165,931 | 481 | 49,377 | 0 | 9,449 | 111,379 | 120,828 | 0 | 0 | 0 | 0 |
| 1981 | 0 | (44,416) | 47,244 | 283,264 | 2,704 | 288,796 | 0 | 13,232 | 109,754 | 122,986 | 0 | 0 | 0 | 0 |
| 1982 | 0 | (60,135) | 59,069 | 360,878 | 1,187 | 360,999 | 0 | 7,984 | 95,776 | 103,760 | 0 | 0 | 0 | 0 |
| 1983 | 0 | (33,418) | (46,904) | 166,995 | 2,618 | 89,291 | 0 | 5,710 | 100,518 | 106,228 | 0 | 0 | 0 | 0 |
| 1984 | 0 | (29,618) | (139,545) | 275,212 | 2,201 | 108,250 | 0 | 5,740 | 126,387 | 132,127 | 0 | 0 | 0 | 0 |
| 1985 | 0 | (4,622) | 135,007 | 403,097 | 844 | 534,326 | 0 | 7,563 | 120,823 | 128,386 | 0 | 0 | 0 | 0 |
| 1986 | 0 | (6,664) | 21,520 | 393,203 | 623 | 408,682 | 0 | 8,719 | 131,599 | 140,318 | 0 | 0 | 0 | 0 |
| 1987 | 0 | (519) | (6,241) | 433,452 | 2,734 | 429,426 | 0 | 11,363 | 128,080 | 139,443 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 12,650 | (28,498) | 507,169 | 1,359 | 492,680 | 0 | 12,831 | 120,969 | 133,800 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 634 | (40,154) | 611,681 | 3,161 | 575,322 | 0 | 11,454 | 116,801 | 128,255 | 0 | 0 | 0 | 0 |
| 1990 | 0 | (14,012) | (15,101) | 786,519 | 3,419 | 760,825 | 0 | 13,022 | 109,802 | 122,824 | 0 | 0 | 0 | 0 |
| 1991 | 0 | (871) | 89,637 | 262,921 | 2,283 | 353,970 | 0 | 5,802 | 1,496 | 7,298 | 0 | 0 | 0 | 0 |
| 1992 | 0 | (609) | (71,795) | 435,661 | 1,543 | 364,800 | 0 | 7,893 | 79,635 | 87,528 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 21,959 | (77,424) | 451,257 | 1,211 | 396,999 | 0 | 9,282 | 94,921 | 104,203 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 5,205 | (95,738) | 490,819 | 2,465 | 402,751 | 0 | 8,515 | 87,158 | 95,673 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 20,400 | 75,863 | 157,629 | 1,223 | 255,115 | 0 | 6,986 | 94,536 | 101,522 | 0 | 0 | 0 | 0 |
| 1996 | 0 | (5,621) | 19,088 | 286,066 | 2,362 | 301,895 | 0 | 9,663 | 114,630 | 124,293 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 11,119 | (1,802) | 323,201 | 1,566 | 334,084 | 527 | 8,343 | 110,428 | 119,298 | 527 | 0 | 8,538 | 9,065 |
| 1998 | 0 | 24,544 | (57,726) | 208,909 | 1,222 | 176,949 | 0 | 8,415 | 109,400 | 117,815 | 0 | 0 | 22,210 | 22,210 |
| 1999 | 0 | (3,670) | 6,280 | 357,664 | 2,865 | 363,139 | 0 | 2,453 | 120,061 | 122,514 | 0 | 303 | 23,880 | 24,183 |
| 2000 | 0 | (19,645) | 9,320 | 665,926 | 1,556 | 657,157 | 0 | (429) | 120,313 | 119,884 | 0 | 0 | 26,703 | 26,703 |
| 2001 | 0 | (5,949) | (16,588) | 477,315 | 746 | 455,524 | 0 | (742) | 87,915 | 87,173 | 0 | 0 | 23,229 | 23,229 |
| 2002 | 0 | 10,071 | 35,623 | 776,136 | 305 | 822,135 | 0 | 638 | 99,783 | 100,421 | 0 | (151) | 31,991 | 31,840 |
| 2003 | 0 | 9,075 | (17,034) | 725,781 | 356 | 718,178 | 0 | 161 | 101,113 | 101,274 | 0 | 284 | 31,421 | 31,705 |
| 2004 | 0 | 9,120 | (11,440) | 845,960 | 456 | 844,096 | 0 | 492 | 104,144 | 104,636 | 0 | 480 | 33,870 | 34,350 |
| 2005 | 0 | 21,155 | (61,490) | 577,251 | 472 | 537,388 | 0 | 1,484 | 103,178 | 104,662 | 0 | 573 | 27,595 | 28,168 |
| 2006 | 0 | 4,173 | (121,607) | 616,546 | 396 | 499,508 | 0 | 1,994 | 115,433 | 117,427 | 0 | 2,034 | 27,484 | 29,518 |
| 2007 | 0 | (1,664) | 117,880 | 758,860 | 196 | 875,272 | 0 | 3,355 | 131,590 | 134,945 | 0 | 293 | 31,516 | 31,809 |
| 2008 | 0 | 498 | (14,279) | 529,852 | 211 | 516,282 | 0 | 3,696 | 107,239 | 110,935 | 0 | (30) | 21,795 | 21,765 |
| 2009 | 0 | (2,825) | 9,194 | 628,819 | 164 | 635,352 | 0 | 2,242 | 102,509 | 104,751 | 0 | (3,078) | 19,253 | 16,175 |
| 2010 | 0 | (4,135) | 40,284 | 409,090 | 207 | 445,446 | 0 | 4,265 | 106,590 | 110,855 | 0 | 272 | 21,532 | 21,804 |
| 2011 | 0 | (9,084) | (22,531) | 408,846 | 221 | 377,452 | 0 | 3,994 | 113,647 | 117,641 | 0 | 533 | 24,869 | 25,402 |
| 2012 | 0 | 10,210 | 16,335 | 590,600 | 375 | 617,520 | 0 | 7,411 | 109,383 | 116,794 | 0 | 589 | 23,418 | 24,007 |
| 2013 | 0 | 13,114 | (3,811) | 610,623 | 196 | 620,122 | 0 | 7,637 | 110,714 | 118,351 | 0 | 295 | 21,699 | 21,994 |
| 2014 | 0 | 4,742 | (11,327) | 305,533 | 47 | 298,995 | 0 | 6,636 | 94,369 | 101,005 | 0 | 4,018 | 19,963 | 23,981 |
| 2015 | 0 | 4,268 | (25,001) | 465,451 | 63 | 444,781 | 0 | 5,458 | 94,227 | 99,685 | 0 | 378 | 15,111 | 15,489 |
| 2016 | 0 | 5,995 | (68,486) | 542,581 | 795 | 480,885 | 0 | 6,851 | 119,233 | 126,084 | 0 | 827 | 31,381 | 32,208 |
| 2017 | 0 | 17,918 | 75,020 | 413,886 | 34 | 506,858 | 0 | 7,192 | 132,194 | 139,386 | 0 | 7,332 | 32,585 | 39,917 |
| 2018 | 0 | 11,319 | (745) | 369,891 | 19 | 380,484 | 0 | 6,521 | 118,880 | 125,401 | 0 | 952 | 29,875 | 30,827 |
| 2019 | 0 | 9,626 | 0 | 415,325 | 2,330 | 427,281 | 0 | 663 | 121,230 | 121,893 | 0 | 73 | 23,993 | 24,066 |
| 2020 | 0 | 6,151 | (352) | 548,228 | 2,330 | 556,357 | 0 | 663 | 94,981 | 95,644 | 0 | 73 | 39,988 | 40,061 |
| 2021 | 0 | 6,628 | (352) | 548,228 | 2,330 | 556,834 | 0 | 663 | 94,995 | 95,658 | 0 | 73 | 40,002 | 40,075 |
| 2022 | 0 | 6,628 | (49) | 548,228 | 2,330 | 557,137 | 0 | 663 | 95,095 | 95,758 | 0 | 73 | 40,102 | 40,175 |
| 2023 | 0 | 6,620 | (333) | 548,228 | 2,330 | 556,845 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2024 | 0 | 6,557 | (10,020) | 548,228 | 2,330 | 547,095 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2025 | 0 | 6,536 | (894) | 548,228 | 2,330 | 556,200 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2026 | 0 | 6,583 | 11,278 | 548,228 | 2,330 | 568,419 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2027 | 0 | 6,565 | (11,638) | 548,228 | 2,330 | 545,485 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2028 | 0 | 6,605 | 8,285 | 548,228 | 2,330 | 565,448 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2029 | 0 | 6,538 | (8,133) | 548,228 | 2,330 | 548,963 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2030 | 0 | 6,627 | 12,228 | 548,228 | 2,330 | 569,413 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2031 | 0 | 6,473 | (66,669) | 548,228 | 2,330 | 490,362 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2032 | 0 | 6,166 | 41,046 | 548,228 | 2,330 | 597,770 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2033 | 0 | 6,382 | (56,723) | 548,228 | 2,330 | 500,217 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2034 | 0 | 5,959 | 41,005 | 548,228 | 2,330 | 597,522 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |
| 2035 | 0 | 5,176 | (193,440) | 548,228 | 2,330 | 362,294 | 0 | 663 | 95,143 | 95,806 | 0 | 73 | 40,150 | 40,223 |

TABLE B-7 Reconciliation of Capital Costs Allocated to Water Supply and Power Generation (in thousands of dollars)

| Item | Project Costs Allocated to Water Supply and Power Generation | | | | | | | Capital Costs Allocated to Other Purposes | Total State Water Project Capital Cost |
|--|--|--|---|--|---|--|------------------------------|---|--|
| | Miscellaneous Income Credited to Construction ¹ | Allowance for Future Price Escalation ² | Costs of Construction of Delivery Structures ³ | Costs of Requested Excess Capacity and Future Enlargement ⁴ | Capital Cost Component of Delta Water Charge ⁵ | Capital Cost Component of Transportation Water Charge ⁶ | Water Supply and Power Total | | |
| [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | |
| CONSERVATION FACILITIES | | | | | | | | | |
| Upper Feather Division | | | | | | | | | |
| Frenchman Dam and Lake | 180 | 0 | 0 | 0 | 606 | 0 | 786 | 2,892 | 10,098 |
| Grizzly Valley Dam and Lake Davis | 65 | 0 | 0 | 0 | 55 | 0 | 120 | 8,957 | 11,106 |
| Antelope Dam and Lake | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5,881 | 14,904 |
| Abbey Bridge Dam and Reservoir | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 520 | 520 |
| Dixie Refuge Dam and Reservoir | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 236 |
| Total, Upper Feather Division | 246 | 0 | 0 | 0 | 661 | 0 | 907 | 18,485 | 36,865 |
| Oroville Division | | | | | | | | | |
| Multipurpose Facilities | 3,152 | 0 | 0 | 0 | 1,240,250 | 0 | 1,243,402 | 134,244 | 1,389,941 |
| Specific Power Facilities | 230 | 0 | 0 | 0 | 363,865 | 0 | 364,095 | 1,178 | 365,273 |
| Total, Oroville Division | 3,382 | 0 | 0 | 0 | 1,604,115 | 0 | 1,607,497 | 135,422 | 1,755,214 |
| California Aqueduct | | | | | | | | | |
| North San Joaquin Division (R1–2B) | 1,210 | 0 | 0 | 0 | 105,263 | 0 | 106,473 | 3,816 | 111,219 |
| San Luis Division (R3A–7) | 13,152 | 0 | 0 | 0 | 464,685 | 0 | 477,836 | 6,785 | 484,753 |
| Total, California Aqueduct | 14,362 | 0 | 0 | 0 | 569,947 | 0 | 584,309 | 10,602 | 595,973 |
| Delta Facilities | | | | | | | | | |
| Planning and Preoperation | 37,311 | 0 | 0 | 0 | 928,731 | 0 | 966,042 | 17,502 | 1,029,498 |
| TOTAL, CONSERVATION FACILITIES | 60,603 | 0 | 0 | 0 | 3,215,507 | 0 | 3,276,110 | 182,010 | 3,534,905 |
| TRANSPORTATION FACILITIES | | | | | | | | | |
| Upper Feather Division | | | | | | | | | |
| Grizzly Valley Pipeline | 0 | 0 | 320 | 0 | 0 | 2,115 | 2,435 | 0 | 2,435 |
| North Bay Aqueduct | 266 | 0 | 676 | 0 | 0 | 125,996 | 126,938 | 0 | 126,938 |
| South Bay Aqueduct | 1,791 | 0 | 3,642 | 0 | 0 | 387,515 | 392,948 | 23,758 | 425,030 |
| California Aqueduct | | | | | | | | | |
| North San Joaquin Division | 2,462 | 0 | 139 | 0 | 0 | 423,832 | 426,433 | 8,494 | 436,997 |
| San Luis Division | 9,201 | 0 | 0 | 0 | 0 | 216,543 | 225,745 | 8,767 | 234,682 |
| South San Joaquin Division | 386 | 0 | 4,860 | 2,065 | 0 | 481,219 | 488,529 | 17,813 | 506,937 |
| Tehachapi Division | 27 | 0 | 0 | 5,230 | 0 | 480,654 | 485,911 | 20,833 | 507,196 |
| Mojave Division | 918 | 0 | 2,479 | 0 | 0 | 427,395 | 430,792 | 40,052 | 472,383 |
| Santa Ana Division | 1,184 | 0 | 6,164 | 5,331 | 0 | 530,727 | 543,406 | 80,858 | 662,939 |
| West Branch | 37,592 | 0 | 455 | 37 | 0 | 757,076 | 795,160 | 33,566 | 845,549 |
| Coastal Branch | (279) | 0 | 213 | 0 | 0 | 552,433 | 552,367 | 0 | 552,367 |
| Total, California Aqueduct | 51,491 | 0 | 14,310 | 12,663 | 0 | 3,869,879 | 3,948,343 | 210,382 | 4,219,050 |
| TOTAL, TRANSPORTATION FACILITIES | 53,548 | 0 | 18,947 | 12,663 | 0 | 4,385,505 | 4,470,663 | 234,140 | 4,773,452 |
| East Branch Enlargement | 0 | 0 | 0 | 0 | 0 | 462,031 | 462,031 | 0 | 462,031 |
| East Branch Extension | 0 | 0 | 0 | 0 | 0 | 421,039 | 421,039 | 0 | 421,039 |
| Coastal Power Allocation | 0 | 0 | 0 | 0 | 0 | 30,708 | 30,708 | 0 | 30,708 |
| Agricultural Drainage Facilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90,086 | 107,746 |
| Off-Aqueduct Power Generation Facilities | 0 | 0 | 0 | 0 | 0 | 491,574 | 491,574 | 0 | 491,574 |
| Small Hydro Power Generation Facilities | 0 | 0 | 0 | 0 | 14,095 | 105,554 | 119,649 | 0 | 119,649 |
| Land Purchase—Kern Water Bank | 0 | 0 | 0 | 0 | 34,686 | 0 | 34,686 | 0 | 34,686 |
| Unassigned/Miscellaneous | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85,654 | 85,654 |
| Davis-Grunsky | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130,000 | 130,000 |
| TOTAL THROUGH 2035 | 114,151 | 0 | 18,947 | 12,663 | 3,264,288 | 5,896,411 | 9,306,461 | 721,890 | 10,191,445 |

¹ Miscellaneous project receipts that are applied for accounting purposes to reduce the capital costs of the particular facilities.² These allowances are included for planning the future financial program, but not for determining current water charges.³ See Table B-8.⁴ See Table B-9.⁵ See Table B-13.⁶ See Table B-10. Mojave Division total reduced by \$87,033,179 for costs included in Small Hydro Power Generation Facilities line.

TABLE B-8 SWP Capital Costs of Requested Delivery Structures (in dollars)

| Project Service Area and State Water Project Water Contractors | Calendar Year Capital Costs ^a | | | | | | |
|--|--|---------------|----------------|----------------|-------------|-------------|-------------------|
| | 1952-2016 [1] | 2017 [2] | 2018 [3] | 2019 [4] | 2020 [5] | 2021 [6] | Total [7] |
| FEATHER RIVER AREA | | | | | | | |
| County of Butte | 261,979 | 0 | 0 | 0 | 0 | 0 | 261,979 |
| Plumas County Flood Control and Water Conservation District | 8,723 | 0 | 0 | 5,000 | 0 | 0 | 13,723 |
| Thermalito Irrigation District ^b | 43,939 | 0 | 0 | 0 | 0 | 0 | 43,939 |
| Subtotal | 314,641 | 0 | 0 | 5,000 | 0 | 0 | 319,641 |
| NORTH BAY AREA | | | | | | | |
| Napa County Flood Control and Water Conservation District | 13,590 | 0 | 0 | 0 | 0 | 0 | 13,590 |
| Solano County Water Agency | 662,113 | 0 | 0 | 0 | 0 | 0 | 662,113 |
| Subtotal | 675,703 | 0 | 0 | 0 | 0 | 0 | 675,703 |
| SOUTH BAY AREA | | | | | | | |
| Alameda County Flood Control and Water Conservation District, Zone 7 | 1,911,350 | 0 | 0 | 0 | 0 | 0 | 1,911,350 |
| Alameda County Water District | 630,576 | 0 | 0 | 0 | 0 | 0 | 630,576 |
| Santa Clara Valley Water District | 33,531 | 0 | 0 | 0 | 0 | 0 | 33,531 |
| San Francisco Water Department ^b | 1,066,680 | 0 | 0 | 0 | 0 | 0 | 1,066,680 |
| Subtotal | 3,642,137 | 0 | 0 | 0 | 0 | 0 | 3,642,137 |
| CENTRAL COASTAL AREA | | | | | | | |
| San Luis Obispo County Flood Control and Water Conservation District | 54,741 | 3,267 | 0 | 0 | 0 | 0 | 58,008 |
| Santa Barbara County Flood Control and Water Conservation District | 67,058 | 0 | 0 | 0 | 0 | 0 | 67,058 |
| Subtotal | 121,799 | 3,267 | 0 | 0 | 0 | 0 | 125,066 |
| SAN JOAQUIN VALLEY AREA | | | | | | | |
| County of Kings | 36,014 | 19,267 | 70,736 | 40,000 | 0 | 0 | 166,017 |
| Dudley Ridge Water District | 336,899 | 8,271 | 0 | 0 | 0 | 0 | 345,170 |
| Empire West Side Irrigation District | 6,358 | 0 | 0 | 0 | 0 | 0 | 6,358 |
| Green Valley Water District ^b | 5,292 | 0 | 0 | 0 | 0 | 0 | 5,292 |
| Kern County Water Agency | 4,029,503 | 0 | 0 | 35,000 | 0 | 0 | 4,064,503 |
| Oak Flat Water District | 97,643 | 0 | 0 | 0 | 0 | 0 | 97,643 |
| Santa Clarita Valley Water Agency ^c | 82,567 | 0 | 0 | 0 | 0 | 0 | 82,567 |
| Tracy Golf and Country Club ^b | 6,932 | 0 | 0 | 0 | 0 | 0 | 6,932 |
| Tulare Lake Basin Water Storage District | 277,483 | 0 | 0 | 0 | 0 | 0 | 277,483 |
| Veterans Administration Cemetery ^b | 3,342 | 0 | 0 | 0 | 0 | 0 | 3,342 |
| Del Puerto Water District ^b | 0 | 0 | 10,885 | 20,000 | 0 | 0 | 30,885 |
| Subtotal | 4,882,033 | 27,538 | 81,621 | 95,000 | 0 | 0 | 5,086,192 |
| SOUTHERN CALIFORNIA AREA | | | | | | | |
| Antelope Valley-East Kern Water Agency | 1,586,293 | 28,490 | 99,319 | 300,000 | 0 | 0 | 2,014,102 |
| Coachella Valley Water District | 14,206 | 0 | 0 | 0 | 0 | 0 | 14,206 |
| Crestline-Lake Arrowhead Water Agency | 25,298 | 0 | 0 | 0 | 0 | 0 | 25,298 |
| Desert Water Agency | 23,438 | 0 | 0 | 0 | 0 | 0 | 23,438 |
| Little Rock Creek Irrigation District | 23,732 | 0 | 0 | 35,000 | 0 | 0 | 58,732 |
| Mojave Water Agency | 309,054 | 0 | 0 | 0 | 0 | 0 | 309,054 |
| Palmdale Water District | 34,173 | 0 | 0 | 0 | 0 | 0 | 34,173 |
| San Bernardino Valley Municipal Water District | 960,685 | 0 | 0 | 0 | 0 | 0 | 960,685 |
| San Gabriel Valley Municipal Water District | 131,052 | 0 | 0 | 10,000 | 0 | 0 | 141,052 |
| San Gorgonio Pass Water Agency | 139,123 | 0 | 35,496 | 60,000 | 0 | 0 | 234,619 |
| Santa Clarita Valley Water Agency ^c | 375,593 | 0 | 0 | 0 | 0 | 0 | 375,593 |
| The Metropolitan Water District of Southern California | 4,817,610 | 0 | 0 | 10,000 | 0 | 0 | 4,827,610 |
| Ventura County Watershed Protection District | 79,699 | 0 | 0 | 0 | 0 | 0 | 79,699 |
| Subtotal | 8,519,956 | 28,490 | 134,815 | 415,000 | 0 | 0 | 9,098,261 |
| TOTAL | 18,156,269 | 59,295 | 216,436 | 515,000 | 0 | 0 | 18,947,000 |

^aApproximate only, not to be construed as invoice amounts.^bNot an SWP water contractor.^cCastaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

Table B-9 Capital Costs of Requested Excess Peaking Capacity (in dollars unless otherwise indicated)

Sheet 1 of 2

| Calendar Year | Total Advance Payments and Credits for Excess Capacity | Total Incremental Costs for Excess Capacity | Overpayment (+) or Underpayment (-) ^a | Annual Surplus Money Investment Fund Interest Rate ^b | | Net Over- or Underpayment With Interest ^c |
|---|--|---|--|---|---------------|--|
| | | | | January-June | July-December | |
| THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA | | | | | | |
| 1965 | 0 | 158,000 | (158,000) | 3.968% | 4.184% | (163,412) |
| 1966 | 8,056,000 | 435,800 | 7,620,200 | 4.540% | 5.057% | 7,701,103 |
| 1967 | 9,094,963 | 1,878,270 | 7,216,693 | 4.815% | 4.744% | 15,524,533 |
| 1968 | 1,523,252 | 2,887,351 | (1,364,099) | 5.330% | 5.540% | 14,959,187 |
| 1969 | 8,310,651 | 3,059,310 | 5,251,341 | 5.946% | 6.389% | 21,369,973 |
| 1970 | 3,426,736 | 2,397,102 | 1,029,634 | 7.071% | 7.125% | 23,986,083 |
| 1971 | 1,086,045 | 1,146,648 | (60,603) | 5.154% | 5.580% | 25,238,017 |
| 1972 | (4,244,807) | 487,394 | (4,732,201) | 4.477% | 4.977% | 21,532,965 |
| 1973 | (15,913,829) | 25,041 | (15,938,870) | 6.023% | 8.717% | 6,014,116 |
| 1974 | 0 | 37,775 | (37,775) | 9.222% | 10.351% | 6,576,393 |
| 1975 | 0 | 2,085 | (2,085) | 7.089% | 6.791% | 7,038,515 |
| 1976 | 0 | 0 | 0 | 6.048% | 6.021% | 7,469,662 |
| 1977 | 0 | 0 | 0 | 5.788% | 6.182% | 7,923,403 |
| 1978 | 0 | 0 | 0 | 7.171% | 8.096% | 8,539,736 |
| 1979 | 0 | 0 | 0 | 8.979% | 9.671% | 9,354,605 |
| 1980 | 0 | 0 | 0 | 11.500% | 11.500% | 10,461,314 |
| Total | 11,339,011 | 12,514,776 | (1,175,765) | — | — | 10,461,314 |
| SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT | | | | | | |
| 1967 | 0 | 25,730 | (25,730) | 4.815% | 4.744% | (26,611) |
| 1968 | 184,422 | 44,053 | 140,369 | 5.330% | 5.540% | 117,587 |
| 1969 | 49,052 | 38,075 | 10,977 | 5.946% | 6.389% | 136,751 |
| 1970 | 44,911 | 17,959 | 26,952 | 7.071% | 7.125% | 175,186 |
| 1971 | 61,588 | 5,900 | 55,688 | 5.154% | 5.580% | 242,927 |
| 1972 | (20,263) | 6,835 | (27,098) | 4.477% | 4.977% | 226,230 |
| 1973 | (180,465) | 0 | (180,465) | 6.023% | 8.717% | 49,198 |
| 1974 | 0 | 0 | 0 | 9.222% | 10.351% | 54,130 |
| 1975 | 0 | 0 | 0 | 7.089% | 6.791% | 57,952 |
| 1976 | 0 | 0 | 0 | 6.048% | 6.021% | 61,501 |
| 1977 | 0 | 0 | 0 | 5.788% | 6.182% | 65,237 |
| 1978 | 0 | 0 | 0 | 7.171% | 8.096% | 70,312 |
| 1979 | 0 | 0 | 0 | 8.979% | 9.671% | 77,021 |
| 1980 | 0 | 0 | 0 | 11.500% | 11.500% | 86,133 |
| Total | 139,245 | 138,552 | 693 | — | — | 86,133 |
| ANTELOPE VALLEY-EAST KERN WATER AGENCY | | | | | | |
| 1968 | 85,495 | 1,645 | 83,850 | 5.330% | 5.540% | 86,962 |
| 1969 | 52,625 | 6,326 | 46,299 | 5.946% | 6.389% | 140,964 |
| 1970 | 101,648 | 15,076 | 86,572 | 7.071% | 7.125% | 243,222 |
| 1971 | 34,062 | 11,748 | 22,314 | 5.154% | 5.580% | 279,673 |
| 1972 | (12,794) | 2,018 | (14,812) | 4.477% | 4.977% | 277,552 |
| 1973 | (205,354) | 308 | (205,662) | 6.023% | 8.717% | 77,288 |
| 1974 | 0 | 96 | (96) | 9.222% | 10.351% | 84,933 |
| 1975 | 0 | 0 | 0 | 7.089% | 6.791% | 90,929 |
| 1976 | 0 | 190 | (190) | 6.048% | 6.021% | 96,300 |
| 1977 | 0 | 0 | 0 | 5.788% | 6.182% | 102,150 |
| 1978 | 0 | 0 | 0 | 7.171% | 8.096% | 110,096 |
| 1979 | 0 | 0 | 0 | 8.979% | 9.671% | 120,601 |
| 1980 | 0 | 0 | 0 | 11.500% | 11.500% | 134,869 |
| Total | 55,682 | 37,407 | 18,275 | — | — | 134,869 |

^a Overpayment or underpayment for each calendar year—column [1] minus column [2].^b Interest rates shown are annual rates. Interest is credited daily at applicable rates on funds deposited in the State's Surplus Money Investment Fund.^c Amounts shown are end-of-year balances. Interest on overpayments is credited at applicable Surplus Money Investment Fund interest rates shown in columns [4] and [5]. Interest on underpayments is charged at the 1980 Project Interest Rate of 4.584 percent.

Table B-9 Capital Costs of Requested Excess Peaking Capacity (in dollars)

Sheet 2 of 2

| Reach Number | ANNUAL REQUIRED ADVANCE OF FUNDS | | | | | | | | | | | | | Reach Total | |
|---|---|---------|-----------|------------|-----------|-----------|-----------|-----------|-------------|--------------|--------------|--------------|--------------|--------------|-----------|
| | Incremental Costs and Advance Payments by Calendar Year | | | | | | | | | | | | | | |
| | 1965 | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1981 | | |
| THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA | | | | | | | | | | | | | | | |
| <i>Incremental Costs</i> | | | | | | | | | | | | | | | |
| 8C | | 1,000 | 1,000 | | | | | | | | | | | 2,000 | |
| 8D | | 43,500 | 43,500 | | | | | | | | | | | 87,000 | |
| 9 | | 27,000 | 27,000 | 13,500 | | | | | | | | | | 67,500 | |
| 10A | | 29,700 | 29,700 | 14,800 | | | | | | | | | | 74,200 | |
| 11B | 10,100 | 18,300 | 18,300 | 9,200 | | | | | | | | | | 55,900 | |
| 12D | 1,800 | 19,300 | 25,800 | 12,900 | | | | | | | | | | 59,800 | |
| 12E | 1,800 | 12,400 | 18,800 | 10,800 | | | | | | | | | | 43,800 | |
| 13B | | 12,600 | 37,800 | 31,600 | | | | | | | | | | 82,000 | |
| 14A | 2,500 | 500 | 11,100 | 80,216 | 107,504 | 124,069 | 37,519 | 6,413 | 381 | 87 | | | | 370,289 | |
| 14B | 1,200 | 1,800 | | 19,100 | 19,100 | 12,800 | | | | | | | | 54,000 | |
| 14C | 1,800 | 900 | | 13,500 | 13,500 | 9,000 | | | | | | | | 38,700 | |
| 15A | 700 | | 14,000 | 66,947 | 133,357 | 128,099 | 54,821 | 5,327 | 946 | 2,076 | | | | 406,273 | |
| 16A | 700 | | 18,900 | 137,894 | 182,000 | 211,608 | 133,927 | 26,203 | 5,767 | 6,156 | | | | 723,155 | |
| 17E | | 51,500 | 444,600 | 537,247 | 860,024 | 998,985 | 699,281 | 193,286 | 17,947 | 29,456 | 2,085 | | | 3,834,411 | |
| 17F | 109,100 | 261,600 | 261,600 | 261,600 | 239,500 | | | | | | | | | 1,395,000 | |
| 25 | | 964,270 | 1,650,947 | 1,426,925 | 673,041 | 221,100 | 256,165 | | | | | | | 5,192,448 | |
| 28J | | 304,612 | 13,706 | 296,668 | 65,966 | 230,169 | 1,209,586 | 2,017,134 | 235,900 | 4,900 | | | | 4,378,641 | |
| Total | 129,700 | 740,412 | 1,891,976 | 3,184,019 | 3,125,276 | 2,627,271 | 2,356,234 | 2,504,528 | 260,941 | 42,675 | 2,085 | | | 16,865,117 | |
| <i>Adjustments</i> | | | | | | | | | | | | | | | |
| 8C through 25 | 1. Advance Payments Applied to Incremental Costs Amendment 2 ^d | 0 | 8,056,000 | 9,094,963 | 1,523,252 | 8,310,651 | 3,426,736 | 1,086,045 | (4,244,807) | (14,381,396) | | (356,668) | | 12,514,776 | |
| | 2. Interest Credits-Amendment 2 ^e | | | | | | | | | (1,532,433) | | (10,104,646) | | (11,637,079) | |
| 28J | 3. Advance Payments Applied to Incremental Costs Amendment 5 ^f | 0 | 1,240,000 | 1,483,180 | 2,469,325 | (927,035) | 1,729,160 | 3,215,258 | 2,967,475 | 1,690,000 | (9,488,722) | | | 4,378,641 | |
| | 4. Interest Credits-Amendment 5 ^g | | | | | | | | | (2,721,803) | | | | (2,721,803) | |
| | 5. Net Required Advance of Funds | 0 | 9,296,000 | 10,578,143 | 3,992,577 | 7,383,616 | 5,155,896 | 4,301,303 | (1,277,332) | (14,233,829) | (12,210,525) | | (10,461,314) | | 2,524,535 |
| SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT | | | | | | | | | | | | | | | |
| 25 | <i>Incremental Costs</i> | | | | | | | | | | | | | 138,552 | |
| | 25,730 | 44,053 | 38,075 | 17,959 | 5,900 | 6,835 | | | | | | | | | |
| | 25,730 | 44,053 | 38,075 | 17,959 | 5,900 | 6,835 | | | | | | | | 138,552 | |
| | <i>Adjustments</i> | | | | | | | | | | | | | | |
| | 1. Advance Payments Applied to Incremental Costs ^d | 0 | 184,422 | 49,052 | 44,911 | 61,588 | (20,263) | (174,133) | | | | (7,025) | | 138,552 | |
| | 2. Interest Credit | | | | | | | | (6,332) | | | (79,108) | | (85,440) | |
| | 3. Net Required Advance of Funds | 0 | 184,422 | 49,052 | 44,911 | 61,588 | (20,263) | (180,465) | | | | (86,133) | | 53,112 | |
| ANTELOPE VALLEY-EAST KERN WATER AGENCY | | | | | | | | | | | | | | | |
| 29A | <i>Incremental Costs</i> | | | | | | | | | | | | | 34,007 | |
| 29F | | 1,645 | 6,326 | 13,376 | 10,048 | 2,018 | 308 | 96 | 190 | | | | | 3,400 | |
| | | | 1,700 | 1,700 | | | | | | | | | | | |
| | Total Unadjusted Incremental Costs for Past Payments | | | | | | | | | | | | | 37,407 | |
| | 1,645 | 6,326 | 15,076 | 11,748 | 2,018 | 308 | 96 | 190 | | | | | | | |
| | <i>Adjustments</i> | | | | | | | | | | | | | | |
| | 1. Advance Payments Applied to Incremental Costs ^d | 85,495 | 52,625 | 101,648 | 34,062 | (12,794) | (189,120) | 0 | 0 | (34,509) | | | | 37,407 | |
| | 2. Interest Credit | | | | | | | | (16,234) | | | (100,360) | | (116,594) | |
| | 3. Net Required Advance of Funds | 85,495 | 52,625 | 101,648 | 34,062 | (12,794) | (205,354) | 0 | 0 | (134,869) | | | | (79,187) | |

^d Actual payments are shown for 1965 through 1976 with 1981 adjusted to reflect overpayments and underpayments without interest for prior years.^e Interest for overpayments and underpayments under provisions of Amendment 2 of the contract.^f Actual payments are shown for 1965 through 1973 with 1974 adjusted to reflect overpayments and underpayments without interest for prior years.^g Interest for overpayments and underpayments under provisions of Amendment 5 of the contract.^h Amounts in excess of incremental costs, under the provisions of the contract, reduce the Transportation Charge capital cost component of the agency's Statement of Charges for January 1981.

TABLE B-10 Capital Costs of Each Aqueduct Reach to be Reimbursed through Capital Cost Component of Transportation Charge (in dollars)

Sheet 1 of 8

| Calendar Year | Upper Feather Division | North Bay Aqueduct | | | | | South Bay Aqueduct | | | | |
|---------------|------------------------|--------------------|-------------------|------------------|-------------------|--------------------|--------------------|------------------|-------------------|-------------------|------|
| | | Reach 1 | Reach 2 | Reach 3A | Reach 3B | Total | Reach 1 | Reach 2 | Reach 4 | Reach 5 | [10] |
| 1952 | 0 | 0 | 0 | 0 | 0 | 0 | 97 | 34 | 30 | 57 | |
| 1953 | 0 | 0 | 0 | 0 | 0 | 0 | 477 | 166 | 144 | 297 | |
| 1954 | 0 | 0 | 0 | 0 | 0 | 0 | 1,466 | 508 | 437 | 959 | |
| 1955 | 0 | 0 | 0 | 0 | 0 | 0 | 1,944 | 674 | 560 | 1,266 | |
| 1956 | 0 | 0 | 0 | 0 | 0 | 0 | 18,789 | 6,515 | 5,090 | 12,545 | |
| 1957 | 0 | 13,290 | 3,391 | 0 | 9,953 | 26,634 | 45,090 | 15,639 | 12,285 | 33,218 | |
| 1958 | 2 | 19,202 | 5,011 | 0 | 25,798 | 50,011 | 195,985 | 80,961 | 7,714 | 21,930 | |
| 1959 | 14 | 7,517 | 2,118 | 0 | 17,653 | 27,288 | 496,140 | 148,516 | 24,945 | 17,118 | |
| 1960 | 28 | 8,797 | 4,292 | 0 | 4,838 | 17,927 | 1,130,378 | 67,351 | 71,779 | 68,028 | |
| 1961 | 10 | 1,551 | 10,318 | 0 | 2,526 | 14,395 | 3,273,247 | 180,596 | 307,885 | 74,398 | |
| 1962 | 32 | 217 | (1,751) | 0 | 414 | (1,120) | 1,548,884 | 203,535 | 695,446 | 35,102 | |
| 1963 | 51 | 2,510 | (1,063) | 0 | 983 | 2,430 | 480,716 | 69,182 | 2,284,291 | 206,587 | |
| 1964 | 7,791 | 39,879 | 12,046 | 0 | 21,934 | 73,859 | 2,549,118 | 15,903 | 181,900 | 264,410 | |
| 1965 | 3,139 | 72,793 | 17,900 | 0 | 170,361 | 261,054 | 807,505 | 153,454 | 85,425 | 447,830 | |
| 1966 | (48) | 59,615 | 12,972 | 0 | 438,949 | 511,536 | 898,074 | 149,529 | 142,096 | 1,690,200 | |
| 1967 | 47 | 47,257 | 11,597 | 0 | 1,551,023 | 1,609,877 | 607,614 | 50,423 | 293,304 | 3,496,284 | |
| 1968 | 51,573 | 70,586 | 19,560 | 0 | 831,158 | 921,304 | 965,119 | 19,543 | 89,300 | 2,931,101 | |
| 1969 | 234,232 | 63,650 | 23,628 | 0 | 46,428 | 133,706 | 455,173 | 9,618 | 3,860 | 896,727 | |
| 1970 | 16,227 | 59,090 | 42,733 | 0 | 9,415 | 111,238 | 52,481 | 3,380 | 10,517 | 154,358 | |
| 1971 | 27,204 | 20,819 | 31,516 | 0 | 8,480 | 60,815 | 24,505 | 4,645 | 5,035 | 20,395 | |
| 1972 | 9 | 15,538 | 12,952 | 0 | 10,058 | 38,548 | 26,918 | 825 | 2,945 | 26,090 | |
| 1973 | 25 | 18,488 | 29,018 | 0 | 39,878 | 87,384 | 24,468 | 4,010 | 6,016 | 12,708 | |
| 1974 | 45 | 67,352 | 29,978 | 0 | 134,332 | 231,662 | 17,108 | 1,192 | 1,765 | 65,587 | |
| 1975 | 21 | 62,855 | 73,112 | 0 | 45,091 | 181,058 | 57,619 | 561 | 1,165 | 7,291 | |
| 1976 | 51 | 52,419 | 75,611 | 218 | 13,168 | 141,416 | 104,242 | 2,846 | 8,915 | 12,701 | |
| 1977 | 28 | 53,274 | 65,662 | 2,240 | 23,138 | 144,314 | 176,062 | 3,625 | 3,225 | 16,158 | |
| 1978 | 38 | 61,936 | 57,158 | 2,955 | 28,987 | 151,036 | 264,581 | 4,494 | 3,668 | 14,028 | |
| 1979 | 23 | 316,620 | 91,367 | 3,953 | 62,240 | 474,180 | 111,106 | 17,151 | 8,515 | 31,725 | |
| 1980 | 26 | 422,804 | 111,600 | 19,910 | 96,125 | 650,439 | 368,942 | 17,708 | 8,249 | 38,045 | |
| 1981 | 34 | 430,992 | 147,295 | (10,752) | 43,157 | 610,692 | (145,428) | 3,600 | 6,533 | 12,448 | |
| 1982 | 11 | 934,812 | 357,720 | (7,165) | 134,408 | 1,419,775 | (44,778) | 18,971 | 7,451 | 37,824 | |
| 1983 | 19 | 1,091,091 | 1,076,627 | 2,628 | 517,615 | 2,687,961 | 429,225 | 73,925 | 38,185 | 72,415 | |
| 1984 | 26 | 1,875,968 | 2,317,661 | 3,290 | 1,068,363 | 5,265,282 | 506,951 | 36,354 | 9,610 | 92,846 | |
| 1985 | 29 | 2,248,491 | 7,849,886 | 27,815 | 3,416,370 | 13,542,562 | 34,103 | 2,822 | 5,034 | 27,138 | |
| 1986 | 31 | 16,420,238 | 10,020,277 | 1,309,599 | 1,819,349 | 29,569,463 | 85,732 | 14,715 | 17,144 | 13,982 | |
| 1987 | 32 | 11,873,826 | 7,214,307 | 1,628,932 | 1,670,596 | 22,387,661 | 126,377 | 15,693 | 27,881 | 32,931 | |
| 1988 | 55 | 3,287,756 | 1,648,431 | 1,015,971 | 686,821 | 6,638,979 | 290,505 | 36,744 | 51,786 | 25,078 | |
| 1989 | 44 | 1,056,583 | 950,985 | 224,567 | 374,886 | 2,607,021 | 130,609 | 16,848 | 35,518 | 12,582 | |
| 1990 | 63 | 493,522 | 537,881 | 145,694 | 71,938 | 1,249,035 | 275,732 | 32,387 | 99,251 | 40,263 | |
| 1991 | 54 | 76,599 | 17,130 | 24,846 | 70,542 | 189,117 | 1,153,109 | 26,900 | 53,613 | 21,889 | |
| 1992 | 42 | 56,492 | 6,525 | 18,333 | 37,778 | 119,128 | 401,906 | 53,036 | 61,799 | 51,386 | |
| 1993 | 30 | 104,317 | 24,579 | 40,129 | 82,032 | 251,057 | 313,476 | 55,679 | 79,149 | 39,293 | |
| 1994 | 14 | 68,065 | 13,463 | 27,107 | 45,909 | 154,544 | (211,712) | 29,017 | 362,585 | 36,350 | |
| 1995 | 3 | 26,002 | 5,920 | 7,337 | 20,617 | 59,876 | 265,751 | 42,516 | 48,189 | 21,436 | |
| 1996 | 0 | 14,790 | 3,334 | 6,614 | 14,606 | 39,344 | 139,573 | 13,049 | 25,751 | 10,677 | |
| 1997 | 3 | 67,264 | 35,545 | 38,585 | (13,571) | 127,823 | 203,476 | 31,135 | 36,986 | 16,906 | |
| 1998 | 7 | 15,410 | 6,392 | 6,797 | 10,396 | 38,995 | 67,974 | 6,120 | 14,731 | 4,616 | |
| 1999 | 2 | 71,950 | 35,515 | 33,879 | 32,613 | 173,957 | 162,161 | 25,329 | 35,716 | 24,347 | |
| 2000 | 24 | 29,992 | 8,327 | 11,710 | 4,156 | 54,185 | 100,654 | 15,688 | 24,144 | 19,652 | |
| 2001 | 20 | 10,597 | 3,904 | 3,892 | 1,954 | 20,347 | 436,756 | 4,272 | 118,836 | 4,207 | |
| 2002 | 14 | 27,018 | 18,971 | 15,254 | 4,614 | 65,857 | 3,068,535 | 5,648 | 329,244 | 64,425 | |
| 2003 | 0 | 14,733 | 9,243 | 4,658 | 46,313 | 74,947 | 4,465,569 | 200,125 | 199,457 | 360,387 | |
| 2004 | 0 | 23,929 | 2,214 | 2,341 | 145,290 | 173,774 | 1,257,335 | 120,340 | 131,702 | 99,547 | |
| 2005 | 0 | 89,369 | 216 | 9 | 33,947 | 123,541 | 1,224,486 | 119,298 | 260,893 | (81) | |
| 2006 | 5 | 28,222 | 237 | 90 | 879,428 | 907,978 | 1,234,636 | 68,374 | 259,542 | 523 | |
| 2007 | 0 | 61,330 | 1 | 0 | 3,219,041 | 3,280,372 | 3,406,319 | 15,183 | 70,776 | 1,884 | |
| 2008 | 4 | 75,107 | 6,065 | 5,318 | 7,878,424 | 7,964,914 | 6,248,064 | 35,890 | 169,891 | 5,098 | |
| 2009 | 6 | 26,191 | 154 | 0 | 1,188,559 | 1,214,905 | 10,200,386 | 1,397,365 | 1,834,913 | 1,815 | |
| 2010 | (2) | 4,652 | (45) | (1) | 395,328 | 399,934 | 7,061,360 | 104,208 | 468,313 | 14,865,982 | |
| 2011 | 0 | 57,075 | 12 | 0 | 175,912 | 232,999 | 10,255,032 | 1,863,342 | 4,089,221 | 3,416,710 | |
| 2012 | 0 | 585,216 | 3 | 15,163 | 311,585 | 911,967 | 7,800,110 | 1,379,855 | 3,102,674 | 104,555 | |
| 2013 | 0 | 870,300 | 27 | 67,533 | 394,181 | 1,332,041 | 2,392,878 | 1,228,777 | 1,071,752 | 328,413 | |
| 2014 | 0 | 781,566 | 3 | 109,243 | 355,488 | 1,246,300 | (122,873) | (1,111,982) | (319,804) | 127,441 | |
| 2015 | 0 | 263,641 | 2 | 81,504 | 109,412 | 454,560 | 1,779,546 | 117,701 | 716,517 | 127,708 | |
| 2016 | 0 | 142,630 | 1,260 | 61,753 | 45,733 | 251,375 | 273,581 | 105,271 | 407,238 | 71,071 | |
| 2017 | 0 | 65,208 | 889 | 51,882 | 7,256 | 125,236 | 102,584 | 2,042 | 359,064 | 43,584 | |
| 2018 | 0 | 50,733 | 1,861 | 23,293 | 8,786 | 84,672 | 730,457 | 7,822 | 1,776,937 | 30,274 | |
| 2019 | 0 | 123,455 | 6,002 | 44,091 | 28,315 | 201,863 | 2,072,009 | 25,225 | 37,688 | 123,389 | |
| 2020 | 0 | 390,488 | 4,201 | 31,290 | 187,080 | 613,059 | 2,262,184 | 76,340 | 265,680 | 313,038 | |
| 2021 | 0 | 2,426,597 | 14,422 | 1,637,745 | 543,379 | 4,622,143 | 2,687,231 | 22,571 | 58,016 | 1,447,574 | |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| TOTAL | 341,139 | 47,920,278 | 33,088,169 | 6,740,250 | 29,661,534 | 117,410,231 | 87,825,429 | 7,570,779 | 20,716,112 | 32,748,746 | |

TABLE B-10 Capital Costs of Each Aqueduct Reach to be Reimbursed through Capital Cost Component of Transportation Charge (in dollars)

Sheet 2 of 8

| Calendar Year | SOUTH BAY AQUEDUCT (continued) | | | | | CALIFORNIA AQUEDUCT | | | |
|---------------|--------------------------------|------------------|------------------|-------------------|--------------------|----------------------------|-------------------|-------------------|--------------------|
| | | | | | | NORTH SAN JOAQUIN DIVISION | | | |
| | Reach 6 | Reach 7 | Reach 8 | Reach 9 | Total | Reach 1 | Reach 2A | Reach 2B | Subtotal |
| 1952 | 8 | 66 | 72 | 132 | 496 | 4,012 | 3,279 | 1,499 | 8,790 |
| 1953 | 38 | 327 | 336 | 640 | 2,425 | 10,559 | 8,589 | 3,964 | 23,112 |
| 1954 | 123 | 1,005 | 1,003 | 1,954 | 7,455 | 13,796 | 11,163 | 5,179 | 30,138 |
| 1955 | 160 | 1,293 | 1,149 | 2,454 | 9,500 | 7,370 | 5,952 | 2,760 | 16,082 |
| 1956 | 1,559 | 11,959 | 11,043 | 28,372 | 95,872 | 9,880 | 5,020 | 2,398 | 17,298 |
| 1957 | 3,659 | 28,675 | 27,385 | 563,114 | 729,065 | 11,953 | 5,456 | 2,612 | 20,021 |
| 1958 | 2,243 | 17,872 | 17,385 | 560,904 | 904,994 | 18,585 | 17,191 | 7,994 | 43,770 |
| 1959 | 357 | 3,200 | 3,568 | 149,874 | 843,718 | 123,170 | 100,306 | 45,510 | 268,986 |
| 1960 | 1,102 | 2,944 | 4,498 | 359,749 | 1,705,829 | 191,408 | 102,136 | 48,968 | 342,512 |
| 1961 | 4,726 | 18,325 | 22,765 | (1,367) | 3,880,575 | 153,765 | 195,947 | 42,843 | 392,555 |
| 1962 | 17,295 | 160,939 | 178,242 | 209,042 | 3,048,485 | 612,258 | 491,225 | 168,218 | 1,271,701 |
| 1963 | 265,414 | 1,250,386 | 939,832 | 129,902 | 5,626,310 | 1,993,284 | 1,525,734 | 684,095 | 4,203,113 |
| 1964 | 100,603 | 1,716,371 | 2,327,770 | 2,947,522 | 10,103,597 | 4,674,280 | 2,369,858 | 700,074 | 7,744,212 |
| 1965 | 42,345 | 368,476 | 637,266 | 1,921,844 | 4,464,145 | 5,877,189 | 6,873,699 | 2,975,719 | 15,726,607 |
| 1966 | 17,663 | 34,915 | 140,350 | 777,887 | 3,850,714 | 8,553,362 | 14,112,820 | 5,677,099 | 28,343,281 |
| 1967 | (41,567) | 137,856 | 147,183 | 379,764 | 5,070,861 | 9,678,607 | 10,672,113 | 6,646,739 | 26,997,459 |
| 1968 | 84,553 | 2,130 | 68,057 | 253,152 | 4,412,955 | 6,392,664 | 891,681 | 1,303,186 | 8,587,531 |
| 1969 | 4,279 | 11,572 | 162,300 | 32,000 | 1,575,529 | 3,542,767 | 792,259 | 443,924 | 4,778,950 |
| 1970 | 2,487 | 6,820 | 20,086 | (15,718) | 234,411 | 2,236,607 | 149,692 | 115,578 | 2,501,877 |
| 1971 | 4,350 | 6,923 | 17,750 | 39,084 | 122,687 | 98,138 | 215,512 | 69,410 | 383,060 |
| 1972 | 1,084 | 203 | 4,800 | 32,199 | 95,064 | 159,608 | 43,721 | 7,744 | 211,073 |
| 1973 | 288 | 989 | 7,449 | 9,693 | 65,621 | 105,581 | 25,496 | 22,418 | 153,495 |
| 1974 | 527 | 6,020 | 30,628 | 11,433 | 134,260 | 177,700 | 16,627 | 45,707 | 240,034 |
| 1975 | 126 | 679 | 1,086 | 3,464 | 71,991 | 239,144 | 14,680 | 169,676 | 423,500 |
| 1976 | 701 | 3,529 | 8,362 | 26,186 | 167,482 | 641,860 | 45,533 | 65,943 | 753,336 |
| 1977 | 270 | 1,310 | 8,651 | 24,938 | 234,239 | 274,381 | 20,283 | 22,568 | 317,232 |
| 1978 | 231 | 1,204 | 1,631 | 17,123 | 306,960 | 801,265 | 36,221 | 9,714 | 847,200 |
| 1979 | 1,367 | 1,721 | 2,134 | 7,322 | 181,041 | 1,051,792 | 59,695 | 26,106 | 1,137,593 |
| 1980 | 1,321 | 1,718 | 2,182 | 7,102 | 445,267 | 4,173,603 | 96,760 | 38,789 | 4,309,152 |
| 1981 | 308 | 1,462 | 1,398 | 5,077 | (114,602) | (502,921) | 1,487,516 | 38,451 | 1,023,046 |
| 1982 | 716 | 1,561 | 1,746 | 6,074 | 29,565 | 700,738 | 46,501 | 22,308 | 769,547 |
| 1983 | 407 | 5,721 | 8,143 | 23,367 | 651,388 | 706,104 | 84,435 | 211,619 | 1,002,158 |
| 1984 | 269 | 1,853 | 1,667 | 13,301 | 662,851 | 1,559,539 | 41,352 | 48,478 | 1,649,369 |
| 1985 | 402 | 1,657 | 2,129 | 6,750 | 80,035 | 677,955 | 24,812 | 19,404 | 722,171 |
| 1986 | 1,119 | 2,744 | 3,313 | 12,234 | 150,983 | 398,788 | 63,830 | 35,420 | 498,038 |
| 1987 | 1,496 | 3,081 | 3,560 | 21,842 | 232,861 | 799,672 | 88,945 | 41,659 | 930,276 |
| 1988 | 5,706 | 6,689 | 7,603 | 33,728 | 457,839 | 2,898,156 | (128,051) | (56,448) | 2,713,657 |
| 1989 | 2,641 | 3,878 | 4,755 | 14,489 | 221,320 | 6,898,872 | 346,589 | 173,993 | 7,419,454 |
| 1990 | 5,092 | 19,899 | 36,584 | 87,796 | 597,004 | 13,483,785 | 112,002 | 2,446,232 | 16,042,019 |
| 1991 | 1,942 | 5,059 | 7,357 | 31,682 | 1,301,551 | 13,914,632 | 133,121 | 114,981 | 14,162,734 |
| 1992 | 1,184 | 2,042 | 2,250 | 35,464 | 609,067 | 6,260,482 | 241,456 | 239,437 | 6,741,375 |
| 1993 | 3,618 | 6,028 | 8,873 | 42,200 | 548,316 | 2,542,869 | 257,330 | 200,072 | 3,000,271 |
| 1994 | 2,897 | 4,781 | 5,346 | 89,991 | 319,255 | 1,145,666 | 148,396 | 88,357 | 1,382,419 |
| 1995 | 11,556 | 3,635 | 14,769 | 24,750 | 432,602 | 1,462,211 | 217,940 | 131,995 | 1,812,146 |
| 1996 | 3,092 | 2,271 | 2,699 | 12,522 | 209,634 | 874,227 | 74,153 | 41,215 | 989,595 |
| 1997 | 1,454 | 4,141 | 3,655 | 20,589 | 318,342 | 2,064,446 | 146,851 | 84,303 | 2,295,600 |
| 1998 | 363 | 1,134 | (6,005) | 5,776 | 94,709 | 729,475 | 33,695 | 16,670 | 779,840 |
| 1999 | 1,533 | 3,304 | 12,727 | 31,634 | 296,751 | 2,208,776 | 88,951 | 90,639 | 2,388,366 |
| 2000 | 2,406 | 4,944 | 5,331 | 10,755 | 183,575 | (706,517) | 57,503 | 40,185 | (608,829) |
| 2001 | 91,721 | 68,849 | 404,226 | 1,190,653 | 2,319,521 | 371,407 | 91,792 | 8,926 | 472,124 |
| 2002 | 229,409 | 453,259 | 1,107,580 | 2,977,939 | 8,236,039 | 833,187 | 44,543 | 22,639 | 900,369 |
| 2003 | 67,216 | 509,964 | 477,926 | 1,409,228 | 7,689,872 | 228,767 | 22,779 | 13,565 | 265,112 |
| 2004 | 3,193 | 3,100 | 39,326 | 3,276,907 | 4,931,451 | 892,456 | 15,333 | 77,640 | 985,430 |
| 2005 | 5,341 | 5,271 | 4,848 | 731,512 | 2,351,567 | 294,112 | 40,135 | 98,505 | 432,751 |
| 2006 | 1,286 | 1,342 | 1,352 | 15,393 | 1,582,447 | 422,511 | 15,048 | 177,980 | 615,539 |
| 2007 | 7,470 | 7,471 | 7,471 | 10,731 | 3,527,304 | 490,384 | 58,152 | 121,987 | 670,522 |
| 2008 | 8,415 | 8,730 | 8,932 | 12,419 | 6,497,439 | 1,202,812 | 39,742 | 85,604 | 1,328,158 |
| 2009 | 3,042 | 3,187 | 3,266 | 4,591 | 13,448,565 | 553,705 | 40,289 | 29,613 | 623,608 |
| 2010 | 732 | 716 | 711 | 1,006 | 22,503,029 | 181,161 | 8,175 | 2,311 | 191,646 |
| 2011 | 6,513 | 7,659 | 6,472 | 9,164 | 19,654,113 | 813,521 | 51,565 | 3,937 | 869,023 |
| 2012 | 51,903 | 117,364 | 68,876 | 393,352 | 13,018,689 | 1,570,134 | 226,476 | 75,111 | 1,871,721 |
| 2013 | 130,731 | 137,199 | 384,922 | 875,282 | 6,549,953 | 6,957,464 | 800,204 | 237,566 | 7,995,234 |
| 2014 | 102,374 | 121,005 | 107,609 | 207,301 | (888,929) | 5,789,004 | 3,238,636 | 167,361 | 9,195,000 |
| 2015 | 26,053 | 37,802 | 38,192 | 62,844 | 2,906,365 | 5,857,605 | 930,778 | 373,501 | 7,161,884 |
| 2016 | 1,764 | 2,488 | 2,147 | 14,246 | 877,805 | 2,721,640 | 894,583 | 411,576 | 4,027,799 |
| 2017 | 641 | 794 | 553 | 101,577 | 610,839 | 7,157,077 | 659,554 | 146,255 | 7,998,885 |
| 2018 | 1,341 | 1,662 | 1,158 | 89,933 | 2,639,584 | 3,242,104 | 929,591 | 9,624,786 | 13,796,480 |
| 2019 | 4,324 | 5,361 | 3,735 | 714,570 | 2,986,302 | 5,370,272 | 1,574,653 | 1,932,518 | 8,877,444 |
| 2020 | 63,178 | 63,836 | 62,816 | 943,815 | 4,050,887 | 11,390,303 | 1,602,779 | 68,400 | 13,061,483 |
| 2021 | 10,861 | 11,559 | 10,770 | 731,614 | 4,980,196 | 8,408,966 | 3,004,965 | 146,880 | 11,560,811 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 1,383,022 | 5,453,926 | 7,665,752 | 22,783,864 | 186,147,632 | 174,694,134 | 56,801,744 | 37,212,065 | 268,707,943 |

TABLE B-10 Capital Costs of Each Aqueduct Reach to be Reimbursed through Capital Cost Component of Transportation Charge (in dollars)

Sheet 3 of 8

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|---------------------------------|-------------------|-------------------|------------------|-------------------|--------------------|----------------------------|-------------------|-------------------|-------------------|
| | SAN LUIS DIVISION | | | | | | SOUTH SAN JOAQUIN DIVISION | | | |
| | Reach 3 | Reach 4 | Reach 5 | Reach 6 | Reach 7 | Subtotal | Reach 8C | Reach 8D | Reach 9 | Reach 10A |
| [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] | |
| 1952 | 2,492 | 3,549 | 3,987 | 1,010 | 1,390 | 12,428 | 13 | 727 | 1,109 | 695 |
| 1953 | 6,999 | 10,144 | 10,986 | 2,834 | 3,869 | 34,832 | 45 | 2,671 | 4,185 | 2,569 |
| 1954 | 8,704 | 12,545 | 13,693 | 3,520 | 4,766 | 43,228 | 50 | 2,719 | 4,026 | 2,821 |
| 1955 | 4,273 | 6,055 | 6,813 | 1,728 | 2,325 | 21,194 | 19 | 888 | 1,100 | 1,097 |
| 1956 | 3,295 | 5,600 | 5,857 | 1,445 | 3,556 | 19,753 | 98 | 3,850 | 4,376 | 4,428 |
| 1957 | 3,543 | 6,115 | 6,357 | 1,565 | 3,998 | 21,578 | 234 | 10,604 | 13,209 | 13,269 |
| 1958 | 11,927 | 19,393 | 22,037 | 5,509 | 7,512 | 66,378 | 375 | 19,033 | 25,073 | 25,086 |
| 1959 | 21,979 | 37,358 | 39,689 | 9,813 | 19,679 | 128,518 | 436 | 20,578 | 25,697 | 25,787 |
| 1960 | 207,025 | 45,419 | 41,044 | 12,074 | 37,633 | 343,195 | 1,673 | 44,565 | 25,290 | 47,492 |
| 1961 | 184,443 | 292,639 | 170,559 | 38,338 | 70,068 | 756,047 | 3,949 | 75,726 | 30,852 | 68,505 |
| 1962 | 495,836 | 549,984 | 252,698 | 22,397 | 26,967 | 1,347,882 | 6,131 | 159,481 | 62,375 | 57,705 |
| 1963 | 2,772,189 | 2,034,351 | 2,498,712 | 66,353 | 30,647 | 7,402,252 | 5,861 | 161,252 | 81,343 | 52,585 |
| 1964 | 4,348,311 | 4,932,301 | 1,053,227 | 161,422 | 251,461 | 10,746,722 | 4,014 | 90,622 | 117,907 | 124,014 |
| 1965 | 3,860,997 | 5,688,252 | 2,869,931 | 1,072,111 | 667,768 | 14,159,059 | 15,049 | 491,042 | 564,036 | 622,257 |
| 1966 | 2,312,372 | 8,527,843 | 5,765,798 | 4,230,221 | 7,708,334 | 28,544,568 | 201,274 | 5,197,322 | 2,539,278 | 2,800,056 |
| 1967 | (44,527) | 2,062,305 | 6,942,522 | 222,885 | 6,675,398 | 15,858,583 | 212,285 | 4,982,844 | 3,363,650 | 3,652,342 |
| 1968 | 119,884 | 395,689 | 973,956 | 179,917 | 461,031 | 2,130,477 | 64,234 | 611,192 | 940,074 | 1,025,969 |
| 1969 | (6,065) | 126,946 | 98,492 | 107,486 | 160,668 | 487,527 | 58,960 | 116,146 | 85,130 | 145,111 |
| 1970 | 32,387 | (20,243) | 105,385 | (827,457) | 1,215,966 | 506,038 | 23,011 | 106,810 | 84,116 | 74,366 |
| 1971 | 99,945 | 230,624 | 305,227 | 26,995 | 341,010 | 1,003,801 | 8,813 | 33,099 | 23,088 | 15,595 |
| 1972 | 15,990 | 90,852 | 17,053 | 14,621 | 281,343 | 419,859 | 10,818 | 13,349 | 16,603 | 19,736 |
| 1973 | 6,753 | 103,707 | 41,549 | 13,810 | 41,427 | 207,246 | 5,145 | 11,089 | 13,249 | 14,283 |
| 1974 | 6,618 | 117,165 | 55,978 | 16,199 | 71,796 | 267,756 | 5,434 | 24,433 | 16,567 | 22,111 |
| 1975 | 18,921 | 107,275 | 23,671 | 8,797 | 152,574 | 311,238 | 5,424 | 15,960 | 12,966 | 15,865 |
| 1976 | 17,485 | 79,554 | 13,041 | 5,138 | 41,687 | 156,905 | 19,931 | 76,280 | 62,164 | 76,202 |
| 1977 | 35,707 | 84,669 | 9,412 | 4,028 | 9,655 | 143,471 | 21,096 | 70,005 | 97,952 | 75,628 |
| 1978 | 8,539 | 428,395 | 7,006 | 3,536 | 6,994 | 454,470 | 7,584 | 40,453 | 17,395 | 48,754 |
| 1979 | (35,394) | 543,225 | 19,463 | 9,485 | (242,253) | 294,526 | 10,474 | 6,181 | 6,227 | 241 |
| 1980 | 66,622 | 3,450,695 | 191,307 | 75,209 | 185,384 | 3,969,217 | 2,158 | 17,492 | 17,706 | 18,165 |
| 1981 | 28,491 | (2,244,127) | (44,017) | (15,456) | 918,984 | (1,356,125) | 1,151 | 9,642 | 9,541 | 10,309 |
| 1982 | 100,629 | (1,616,569) | 20,184 | 10,359 | 3,525,738 | 2,040,341 | 2,469 | 8,283 | 6,956 | 8,237 |
| 1983 | 75,639 | 33,881 | 11,785 | 6,638 | 1,811,638 | 1,939,581 | 7,955 | 13,782 | 11,090 | 14,488 |
| 1984 | 31,748 | 87,083 | 26,712 | 12,754 | 3,053,662 | 3,211,959 | 26,489 | 9,959 | 6,268 | 7,533 |
| 1985 | 53,251 | 56,732 | 13,685 | 6,934 | 582,910 | 713,512 | 7,220 | 9,762 | 7,688 | 9,215 |
| 1986 | 73,979 | 201,509 | 50,668 | 19,223 | 1,282,469 | 1,627,848 | 8,902 | 25,011 | 20,503 | 22,335 |
| 1987 | (7,829) | 116,268 | 40,009 | 15,946 | 518,349 | 682,743 | 12,744 | 18,927 | 56,042 | 16,704 |
| 1988 | (149,385) | 224,154 | (406,398) | (137,353) | 923,622 | 454,640 | 9,833 | (119,741) | (60,639) | (159,357) |
| 1989 | 39,652 | 594,894 | 232,852 | 80,090 | 575,855 | 1,523,343 | 5,279 | 91,501 | 278,061 | 70,153 |
| 1990 | 39,270 | 259,895 | 79,589 | 29,606 | 461,219 | 869,579 | 5,814 | 41,345 | 2,016,434 | 34,841 |
| 1991 | 4,916,134 | 397,959 | 98,847 | 35,860 | 511,519 | 5,960,319 | 4,588 | 43,140 | 41,348 | 36,888 |
| 1992 | (75,001) | 545,729 | 211,854 | 74,544 | 396,398 | 471,524 | 3,546 | 103,695 | 109,225 | 103,321 |
| 1993 | 110,233 | 724,929 | 186,271 | 70,815 | 720,283 | 1,812,531 | 15,016 | 101,634 | 90,929 | 90,291 |
| 1994 | 1,151,976 | 288,018 | 63,862 | 27,812 | 710,770 | 2,242,438 | 6,770 | 42,455 | 40,696 | 65,737 |
| 1995 | 285,776 | 441,479 | 130,761 | 58,640 | 1,914,186 | 2,830,842 | 12,548 | 49,963 | 43,251 | 435,909 |
| 1996 | 31,942 | (110,471) | 34,529 | 12,219 | 588,712 | 556,931 | 6,444 | 29,863 | 27,050 | 253,433 |
| 1997 | 73,224 | 513,793 | (277,781) | 42,881 | 5,016,215 | 5,368,332 | 11,497 | 49,111 | 43,799 | 73,458 |
| 1998 | 19,692 | 304,115 | 34,319 | 16,542 | 2,819,556 | 3,194,224 | 2,562 | 11,115 | 8,955 | 14,618 |
| 1999 | 18,187 | 158,902 | 100,061 | 41,691 | 1,901,382 | 2,220,222 | 5,706 | 25,179 | 23,510 | 47,359 |
| 2000 | 101,618 | 373,699 | 78,036 | 36,186 | 1,139,073 | 1,728,613 | 3,922 | 23,591 | 29,281 | 43,459 |
| 2001 | (10,513) | (47,112) | 519,031 | (3,546) | 61,595 | 519,455 | 2,280 | 17,030 | 21,196 | 42,731 |
| 2002 | 12,237 | 24,434 | 6,079,343 | 3,454 | (1,812,639) | 4,306,829 | 3,627 | 44,010 | 20,221 | 87,805 |
| 2003 | 8,864 | 79,647 | (5,377,004) | 7,923 | 6,118,421 | 837,852 | 2,130 | 18,793 | 16,716 | 22,946 |
| 2004 | (16,126) | (14,365) | (50,563) | (2,487) | 147,468 | 63,927 | 22,520 | 5,980 | 3,879 | 5,493 |
| 2005 | 261 | 11,360 | 129,470 | 3,529 | 2,533,886 | 2,678,506 | 26,301 | 11,593 | 6,323 | 7,316 |
| 2006 | 1,421 | 27,658 | (10,639) | 1,444 | (28,549) | (8,664) | 6,106 | 2,942 | 1,621 | 1,872 |
| 2007 | 2 | 87,855 | 39,476 | 7,718 | 34,608 | 169,659 | 13,352 | 21,920 | 11,909 | 13,807 |
| 2008 | 14,780 | 16,097 | 46,719 | 13,920 | 2,107,019 | 2,198,535 | 9,017 | 13,020 | 7,277 | 8,919 |
| 2009 | 610 | 216,166 | 44,901 | 4,909 | (44,365) | 222,221 | 2,362 | 15,880 | 8,710 | 10,301 |
| 2010 | (75) | 1,560,318 | 130,846 | 609 | (355,963) | 1,335,734 | (4) | 1,773 | 956 | 1,111 |
| 2011 | 7,037 | 644,158 | 481,685 | 1,297 | 78,291 | 1,212,468 | 1 | 6,354 | 1,748 | 13,984 |
| 2012 | 44,540 | 213,896 | 2,999 | 29,658 | 170,358 | 461,451 | 1,139 | 114,545 | 36,447 | 73,710 |
| 2013 | 810,117 | 299,508 | 906,259 | 120,865 | 215,316 | 2,352,064 | 42,393 | 383,194 | 323,185 | 342,033 |
| 2014 | 843,003 | 317,107 | 461,093 | 67,178 | 207,794 | 1,896,174 | 20,475 | 181,707 | 136,459 | 158,996 |
| 2015 | (624,058) | 145,444 | 228,671 | 15,444 | 153,006 | (81,492) | 46,037 | 141,597 | 95,579 | 123,549 |
| 2016 | 238,925 | 1,504,796 | 2,389,576 | 161,532 | 382,567 | 4,677,396 | 41,047 | 187,181 | 88,578 | 142,425 |
| 2017 | 88,766 | 1,316,341 | 1,938,741 | 144,360 | 2,360,475 | 5,848,683 | 36,569 | 100,337 | 64,969 | 123,286 |
| 2018 | 57,306 | 3,244,433 | 791,745 | 85,599 | 1,069,252 | 5,248,335 | 69,247 | 95,446 | 97,020 | 125,135 |
| 2019 | 364,079 | 4,343,772 | 2,145,846 | 343,683 | 3,505,839 | 10,703,220 | 164,496 | 347,993 | 322,341 | 4,138,844 |
| 2020 | 198,942 | 5,188,891 | 1,632,086 | 295,963 | 5,681,532 | 12,997,414 | 109,214 | 251,314 | 150,071 | 876,819 |
| 2021 | 50,392 | 4,467,969 | 2,693,196 | 113,163 | 23,626,704 | 30,951,425 | 358,185 | 1,090,037 | 848,609 | 2,438,691 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 22,914,986 | 54,972,650 | 37,474,755 | 7,353,136 | 93,827,807 | 216,543,334 | 1,831,537 | 16,047,277 | 13,330,546 | 19,011,438 |

TABLE B-10 Capital Costs of Each Aqueduct Reach to be Reimbursed through Capital Cost Component of Transportation Charge (in dollars)

Sheet 4 of 8

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|--|-------------------|-------------------|-------------------|-------------------|-------------------|------------------|-------------------|-------------------|--------------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | |
| | Reach 11B | Reach 12D | Reach 12E | Reach 13B | Reach 14A | Reach 14B | Reach 14C | Reach 15A | Reach 16A | Subtotal |
| [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] | |
| 1952 | 1,279 | 1,980 | 995 | 1,663 | 794 | 212 | 212 | 1,911 | 4,440 | 16,030 |
| 1953 | 4,790 | 7,480 | 3,745 | 6,236 | 2,599 | 733 | 741 | 7,016 | 16,513 | 59,323 |
| 1954 | 4,855 | 7,565 | 3,792 | 6,319 | 2,880 | 810 | 817 | 7,073 | 16,601 | 60,328 |
| 1955 | 1,557 | 2,404 | 1,211 | 2,025 | 1,183 | 325 | 327 | 2,253 | 5,223 | 19,612 |
| 1956 | 6,223 | 9,233 | 4,737 | 8,054 | 7,026 | 1,638 | 1,584 | 9,939 | 21,754 | 82,940 |
| 1957 | 18,772 | 29,082 | 14,615 | 24,411 | 15,651 | 3,834 | 3,864 | 26,871 | 62,657 | 237,073 |
| 1958 | 48,191 | 78,564 | 39,087 | 61,715 | 33,726 | 12,330 | 11,813 | 49,499 | 133,083 | 537,575 |
| 1959 | 67,246 | 107,781 | 53,836 | 86,478 | 64,824 | 22,102 | 21,828 | 70,838 | 205,748 | 773,179 |
| 1960 | 66,317 | 77,936 | 39,867 | 63,517 | 84,363 | 23,260 | 22,305 | 73,305 | 204,788 | 774,678 |
| 1961 | 46,073 | 88,274 | 51,457 | 28,015 | 242,753 | 91,290 | 65,565 | 150,205 | 206,305 | 1,148,969 |
| 1962 | 56,056 | 69,189 | 44,851 | 49,179 | 208,180 | 61,489 | 47,608 | 133,653 | 171,396 | 1,127,293 |
| 1963 | 91,914 | 173,985 | 86,405 | 67,733 | 425,626 | 104,436 | 77,970 | 102,072 | 481,941 | 1,913,123 |
| 1964 | 333,621 | 291,013 | 174,469 | 86,271 | 1,093,795 | 684,005 | 485,033 | 571,173 | 1,778,952 | 5,834,889 |
| 1965 | 1,053,029 | 1,524,848 | 1,044,851 | 196,487 | 3,385,205 | 1,655,024 | 1,436,258 | 476,830 | 1,268,176 | 13,733,092 |
| 1966 | 3,709,779 | 673,429 | 466,228 | 418,141 | 4,916,319 | 974,862 | 724,354 | 1,829,852 | 2,896,274 | 27,347,168 |
| 1967 | 4,636,627 | 1,881,333 | 1,244,265 | 1,238,428 | 2,788,299 | 525,653 | 400,183 | 1,721,304 | 3,442,021 | 30,089,234 |
| 1968 | 1,323,302 | 4,726,074 | 3,145,775 | 8,343,706 | 10,210,266 | 1,330,361 | 1,405,117 | 7,522,015 | 7,578,498 | 48,226,583 |
| 1969 | 229,185 | 706,272 | 529,080 | 3,704,065 | 15,112,041 | 1,223,457 | 1,134,395 | 9,523,012 | 13,136,056 | 45,702,910 |
| 1970 | 85,151 | 70,725 | 72,798 | 320,797 | 11,031,255 | 987,213 | 738,955 | 8,836,897 | 13,890,751 | 36,322,845 |
| 1971 | 45,006 | 43,988 | 42,624 | 339,078 | 2,925,191 | 193,255 | 36,514 | 3,275,227 | 7,903,937 | 14,885,415 |
| 1972 | 32,657 | 43,939 | 24,748 | 81,937 | 1,388,348 | 101,784 | 20,165 | 1,003,380 | 3,025,555 | 5,783,019 |
| 1973 | 16,448 | 9,980 | 16,320 | 25,090 | 680,834 | 19,584 | 13,469 | 798,805 | 1,472,313 | 3,096,609 |
| 1974 | 14,951 | 19,555 | 32,240 | 29,582 | 524,504 | 30,735 | 16,333 | 778,696 | 1,031,843 | 2,546,984 |
| 1975 | 13,479 | 10,793 | 13,678 | 25,827 | 269,197 | 25,164 | 21,048 | 370,265 | 489,545 | 1,289,211 |
| 1976 | 54,217 | 37,464 | 59,842 | 105,332 | 507,519 | 59,753 | 42,776 | 434,574 | 618,049 | 2,154,103 |
| 1977 | 52,919 | 22,826 | 54,444 | 81,293 | 301,515 | 49,972 | 30,152 | 235,514 | 580,209 | 1,673,525 |
| 1978 | 16,469 | (2,816) | 27,331 | 43,126 | 348,674 | (653) | 1,500 | 297,817 | 582,775 | 1,428,409 |
| 1979 | 6,906 | 13,401 | 14,229 | 25,411 | 293,786 | 9,846 | 7,856 | 245,590 | 542,554 | 1,182,702 |
| 1980 | 18,813 | 15,608 | 27,498 | 34,190 | 1,676,267 | 29,169 | 23,023 | 1,719,775 | 3,772,498 | 7,372,362 |
| 1981 | 14,885 | 26,473 | 20,972 | 25,515 | (1,076,221) | 27,551 | 33,674 | (1,142,721) | (2,527,211) | (4,566,440) |
| 1982 | 6,608 | 7,680 | 8,346 | 16,339 | (745,914) | 9,886 | 29,393 | (804,147) | (1,850,736) | (3,296,600) |
| 1983 | 9,792 | 14,174 | 13,050 | 35,872 | 419,650 | 17,389 | 24,933 | 115,983 | 166,232 | 864,390 |
| 1984 | 27,613 | 87,907 | 49,271 | 22,732 | 54,590 | 75,453 | 63,060 | 63,537 | 119,387 | 613,799 |
| 1985 | 6,949 | 5,263 | 8,013 | 8,875 | (49,408) | 9,523 | 5,867 | 54,782 | 82,117 | 165,866 |
| 1986 | 16,664 | 16,014 | 25,031 | 20,483 | 140,642 | 25,960 | 13,913 | 154,089 | 186,348 | 675,895 |
| 1987 | 13,512 | 12,369 | 20,023 | 15,435 | 101,453 | 20,411 | 8,581 | 227,047 | 194,936 | 718,184 |
| 1988 | (73,648) | (151,040) | (51,401) | (120,104) | 161,077 | (75,276) | (75,307) | 144,369 | 262,334 | (308,900) |
| 1989 | 65,216 | 63,382 | 120,925 | 73,037 | 2,778,880 | 119,559 | 36,660 | 2,952,046 | 5,955,356 | 12,610,055 |
| 1990 | 29,230 | 27,269 | 49,082 | 34,048 | 715,031 | 44,187 | 14,537 | 440,017 | 640,283 | 4,092,118 |
| 1991 | 32,195 | 30,146 | 55,119 | 34,144 | 423,235 | 50,345 | 12,116 | 353,596 | 774,129 | 1,890,989 |
| 1992 | 99,765 | 98,178 | 192,455 | 97,638 | 991,603 | 185,311 | 9,210 | 387,615 | 731,512 | 3,113,074 |
| 1993 | 70,131 | 63,247 | 118,440 | 80,530 | 687,462 | 109,792 | 38,960 | 942,211 | 857,038 | 3,265,681 |
| 1994 | 29,221 | 26,997 | 50,234 | 35,154 | 400,534 | 44,481 | 17,426 | 324,942 | 853,328 | 1,937,975 |
| 1995 | 32,487 | 25,516 | 49,885 | 41,733 | 524,524 | 48,740 | 29,125 | 450,952 | 628,941 | 2,373,574 |
| 1996 | 19,489 | 15,020 | 30,202 | 29,333 | 403,125 | 26,945 | 16,405 | 253,622 | 388,064 | 1,498,995 |
| 1997 | 30,890 | 25,368 | 48,767 | 40,900 | 451,910 | 47,815 | 29,878 | 809,848 | 481,458 | 2,144,699 |
| 1998 | 7,107 | 5,773 | 10,697 | 9,676 | 288,667 | 10,799 | 6,819 | 119,562 | 440,746 | 937,096 |
| 1999 | 17,022 | 13,362 | 34,410 | 31,539 | 260,623 | 24,634 | 14,826 | 264,538 | 361,516 | 1,124,225 |
| 2000 | 21,186 | 32,480 | 40,180 | 25,119 | 168,825 | 15,243 | 11,006 | 151,512 | 372,997 | 938,802 |
| 2001 | 14,471 | 22,325 | 34,995 | 8,027 | 71,645 | 4,537 | 3,988 | 66,918 | 167,694 | 477,837 |
| 2002 | 19,626 | 7,157 | 78,600 | 47,505 | 276,160 | 22,632 | 34,980 | 164,596 | 286,748 | 1,093,668 |
| 2003 | 9,280 | 8,935 | 18,115 | 15,308 | 136,433 | 6,671 | 9,686 | 110,492 | 159,978 | 535,484 |
| 2004 | 3,291 | 4,188 | 7,001 | 5,787 | 52,563 | 5,588 | 1,490 | 50,520 | 322,068 | 490,368 |
| 2005 | 6,332 | 12,579 | 6,307 | 6,354 | 21,617 | 12,567 | 44 | 9,079 | 43,887 | 170,299 |
| 2006 | 1,680 | 3,146 | 1,618 | 1,736 | 5,936 | 3,109 | 108 | 2,695 | 11,294 | 43,863 |
| 2007 | 11,909 | 23,818 | 11,909 | 11,910 | 40,392 | 23,818 | 1 | 16,745 | 82,675 | 284,166 |
| 2008 | 6,999 | 12,960 | 8,044 | 8,187 | 35,363 | 13,537 | 568 | 22,711 | 63,596 | 210,197 |
| 2009 | 8,661 | 16,743 | 9,057 | 9,223 | 34,427 | 16,975 | 302 | 17,919 | 66,302 | 216,862 |
| 2010 | 937 | 1,943 | 957 | 920 | 3,103 | 1,955 | (34) | 1,212 | 6,625 | 21,454 |
| 2011 | 1,753 | 3,487 | 1,747 | 1,758 | 40,339 | 3,484 | 10 | 13,658 | 134,210 | 222,531 |
| 2012 | 33,065 | 62,348 | 34,901 | 34,973 | 393,561 | 64,937 | 3,511 | 494,940 | 686,555 | 2,034,633 |
| 2013 | 196,084 | 263,911 | 240,567 | 240,749 | 1,246,859 | 349,608 | 127,458 | 1,544,197 | 1,678,853 | 6,979,091 |
| 2014 | 98,155 | 149,649 | 112,143 | 112,254 | 867,288 | 175,751 | 46,203 | 632,842 | 1,189,256 | 3,881,178 |
| 2015 | 80,934 | 97,658 | 101,657 | 109,082 | 825,914 | 119,583 | 58,535 | 671,279 | 829,782 | 3,301,185 |
| 2016 | 76,003 | 71,923 | 129,771 | 14,321,724 | 872,281 | 102,756 | 57,483 | 1,480,952 | 1,360,422 | 18,932,546 |
| 2017 | 61,329 | 73,222 | 78,798 | 269,883 | 1,347,243 | 83,885 | 42,447 | 812,819 | 975,124 | 4,069,912 |
| 2018 | 94,645 | 81,003 | 88,067 | 81,145 | 1,673,506 | 77,708 | 71,348 | 1,276,177 | 320,061 | 4,150,506 |
| 2019 | 666,764 | 1,093,378 | 884,576 | 382,646 | 3,405,532 | 265,711 | 171,033 | 819,301 | 1,346,250 | 14,008,865 |
| 2020 | 503,693 | 365,159 | 169,793 | 294,692 | 5,767,239 | 265,868 | 115,147 | 1,903,968 | 2,584,965 | 13,357,943 |
| 2021 | 924,056 | 1,798,640 | 731,815 | 1,269,448 | 7,497,029 | 1,232,095 | 500,895 | 5,227,729 | 9,318,603 | 33,235,830 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 15,351,814 | 15,361,657 | 10,979,158 | 33,295,414 | 90,257,338 | 11,913,163 | 8,378,050 | 61,879,508 | 96,294,177 | 393,931,077 |

TABLE B-10 Capital Costs of Each Aqueduct Reach to be Reimbursed through Capital Cost Component of Transportation Charge (in dollars)

Sheet 5 of 8

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | |
|---------------|---------------------------------|-------------------|--------------------|-----------------|----------------|-----------|----------------|----------------|----------------|---------------|--|
| | TEHACHAPI DIVISION | | | MOJAVE DIVISION | | | | | | | |
| | Reach 17E | Reach 17F | Subtotal | Reach 18A | Reach 19 | Reach 19C | Reach 20A | Reach 20B | Reach 21 | Reach 22A | |
| [40] | [41] | [42] | [43] | [44] | [45] | [46] | [47] | [48] | [49] | | |
| 1952 | 9,703 | 4,072 | 13,775 | 4,090 | 1,520 | 0 | 2,561 | 892 | 5,788 | 35 | |
| 1953 | 31,337 | 13,284 | 44,621 | 12,610 | 4,685 | 0 | 7,246 | 3,402 | 17,846 | 71 | |
| 1954 | 46,243 | 20,010 | 66,253 | 16,642 | 6,184 | 0 | 9,506 | 4,548 | 23,558 | 369 | |
| 1955 | 25,880 | 11,362 | 37,242 | 5,612 | 2,086 | 0 | 2,529 | 2,213 | 7,947 | 178 | |
| 1956 | 47,487 | 17,609 | 65,096 | 6,038 | 2,244 | 0 | 2,440 | 2,655 | 8,542 | 216 | |
| 1957 | 119,673 | 49,130 | 168,803 | 22,348 | 8,304 | 0 | 9,035 | 9,826 | 31,616 | 800 | |
| 1958 | 164,056 | 72,091 | 236,147 | 37,917 | 14,166 | 123 | 15,391 | 16,752 | 53,569 | 1,397 | |
| 1959 | 151,389 | 57,883 | 209,272 | 38,620 | 23,450 | 1,102 | 23,605 | 18,604 | 56,724 | 1,844 | |
| 1960 | 203,222 | 45,323 | 248,545 | 21,356 | 26,093 | 5,318 | 40,523 | 37,179 | 43,893 | 11,029 | |
| 1961 | 387,819 | 85,558 | 473,377 | 35,664 | 32,281 | 2,262 | 34,918 | 37,102 | 21,532 | 14,517 | |
| 1962 | 353,119 | 82,610 | 435,729 | 68,508 | 266,284 | 1,841 | 10,323 | 10,730 | 8,197 | 4,186 | |
| 1963 | 1,191,633 | 124,757 | 1,316,390 | 37,379 | 435,881 | 4,137 | 39,706 | 40,865 | 26,670 | 17,081 | |
| 1964 | 1,866,000 | 775,005 | 2,641,005 | 95,693 | 706,369 | 8,564 | 43,342 | 71,116 | 33,912 | 22,793 | |
| 1965 | 2,574,824 | 2,284,869 | 4,859,693 | 121,060 | 716,092 | 9,156 | 108,519 | 343,506 | 91,095 | 65,689 | |
| 1966 | 5,537,412 | 9,323,517 | 14,860,929 | 366,116 | 1,644,699 | 13,373 | 159,282 | 1,311,628 | 160,388 | 178,538 | |
| 1967 | 26,239,390 | 12,398,708 | 38,638,098 | 1,312,022 | 903,880 | 24,103 | 645,078 | 1,718,942 | 498,257 | 367,961 | |
| 1968 | 33,363,479 | 7,416,464 | 40,779,943 | 136,804 | 7,109,653 | 71,388 | 1,889,601 | 2,291,691 | 1,141,929 | 1,145,768 | |
| 1969 | 40,368,425 | 6,883,206 | 47,251,631 | 213,805 | 2,465,641 | 7,423 | 5,939,151 | 5,626,284 | 2,358,737 | 1,515,147 | |
| 1970 | 35,446,706 | 6,786,231 | 42,232,937 | 2,211,077 | 1,210,665 | 6,217 | 3,652,478 | 5,304,372 | 3,232,911 | 2,081,810 | |
| 1971 | 20,141,395 | 6,835,303 | 26,976,698 | 1,496,843 | 284,738 | 6,994 | 1,074,759 | 1,091,123 | 825,070 | 432,464 | |
| 1972 | 10,002,935 | 34,791 | 10,037,726 | 129,417 | 409,903 | 3,620 | 471,963 | 635,507 | 484,772 | 324,865 | |
| 1973 | 3,090,140 | 36,207 | 3,126,347 | 23,931 | 75,638 | 2,539 | 88,416 | 83,840 | 63,774 | 36,179 | |
| 1974 | 4,798,348 | 152,494 | 4,950,842 | 28,399 | 205,581 | 2,703 | 138,673 | 118,639 | 103,545 | 54,198 | |
| 1975 | 2,144,178 | 411,404 | 2,555,582 | 44,774 | 70,652 | 5,066 | 68,157 | 169,294 | 167,240 | 19,453 | |
| 1976 | 1,124,357 | 174,629 | 1,298,986 | 121,043 | 84,593 | 6,786 | 59,967 | 102,909 | 44,896 | 24,732 | |
| 1977 | 655,047 | 31,512 | 686,559 | 261,400 | 133,767 | 7,521 | 117,878 | 120,160 | 71,389 | 49,445 | |
| 1978 | 1,900,843 | 27,956 | 1,928,799 | 553,014 | 57,150 | 5,872 | 51,615 | 68,838 | 32,855 | 18,183 | |
| 1979 | 2,099,385 | 61,381 | 2,160,766 | 626,615 | 339,536 | 10,831 | 37,085 | 36,225 | 18,948 | 10,675 | |
| 1980 | 17,433,610 | 6,046 | 17,439,656 | 1,130,429 | 1,073,430 | 3,604 | 308,188 | 284,545 | 133,526 | 121,171 | |
| 1981 | (3,848,206) | 6,908 | (3,841,298) | 1,218,824 | 845,702 | 4,498 | 48,625 | 32,214 | 13,223 | 6,466 | |
| 1982 | 11,370,112 | 6,054 | 11,376,166 | 6,968,683 | 746,900 | 3,920 | 33,869 | 77,988 | 13,158 | 14,459 | |
| 1983 | 8,862,914 | 8,269 | 8,871,183 | 10,909,386 | 64,660 | 2,596 | 40,793 | 58,714 | 25,900 | 10,363 | |
| 1984 | 3,227,937 | 31,701 | 3,259,638 | 8,340,371 | 309,491 | 3,124 | 17,505 | 35,378 | 845,423 | 6,052 | |
| 1985 | 1,926,289 | 10,460 | 1,936,749 | 5,264,156 | 227,986 | 3,885 | 68,422 | (232,549) | (481,017) | 1,945,477 | |
| 1986 | 1,381,955 | 33,788 | 1,415,743 | 2,049,111 | 2,069,663 | 4,261 | 2,331,707 | (2,046,222) | (1,334,975) | 3,260,280 | |
| 1987 | 671,183 | 13,807 | 684,990 | 1,347,722 | (6,453) | 4,684 | 562,540 | (344,829) | 55,519 | 64,264 | |
| 1988 | 1,408,760 | (49,734) | 1,359,026 | 847,954 | (104,961) | 13,409 | (159,892) | (147,290) | (70,564) | 351,489 | |
| 1989 | 504,715 | 64,660 | 569,375 | 376,980 | 207,150 | 50,953 | 31,173 | 60,657 | 30,217 | 534,658 | |
| 1990 | 783,219 | 25,218 | 808,437 | 202,065 | (402,573) | 61,192 | (637,062) | (403,413) | (635,623) | (79,841) | |
| 1991 | 691,578 | 33,405 | 724,983 | 273,021 | 22,218 | 81,545 | (188,732) | (18,809) | (147,369) | (17,234) | |
| 1992 | 741,986 | 24,369 | 766,355 | 620,962 | 384,568 | 86,644 | 225,398 | 338,098 | (263,897) | 75,210 | |
| 1993 | 1,223,402 | 35,370 | 1,258,772 | 1,131,166 | 248,287 | 72,746 | 110,869 | 180,598 | 133,941 | 49,144 | |
| 1994 | 806,213 | 16,681 | 822,894 | 998,126 | 164,096 | 60,147 | 51,340 | 114,273 | 65,260 | 26,546 | |
| 1995 | 1,538,497 | 19,443 | 1,557,940 | 390,433 | 157,481 | 45,990 | 92,925 | 121,499 | 66,503 | 30,918 | |
| 1996 | 2,571,039 | 10,797 | 2,581,836 | 91,593 | 69,281 | 22,188 | 35,656 | 48,699 | 44,953 | 17,787 | |
| 1997 | 1,009,249 | 18,265 | 1,027,514 | 135,402 | 92,607 | 13,590 | 65,433 | 39,973 | 55,881 | 27,865 | |
| 1998 | 925,574 | 6,843 | 932,417 | 47,486 | 36,170 | 4,164 | 29,900 | 27,626 | 20,285 | 12,816 | |
| 1999 | 662,144 | 12,166 | 674,310 | 113,232 | 49,150 | 5,329 | 171,935 | 58,392 | 37,660 | 17,874 | |
| 2000 | 408,352 | 14,333 | 422,685 | 120,267 | 90,145 | 936 | 83,478 | 75,230 | 44,857 | 20,181 | |
| 2001 | 266,815 | 10,891 | 277,706 | 65,580 | 186,973 | 2,223 | 343,775 | 121,907 | 77,799 | 54,526 | |
| 2002 | 247,986 | 9,586 | 257,572 | 35,787 | (139,334) | 1,374 | (111,675) | (82,663) | (7,369) | (43,431) | |
| 2003 | 189,022 | 12,339 | 201,361 | 84,434 | (19,049) | 0 | (11,367) | (7,564) | (3,238) | (3,009) | |
| 2004 | 372,622 | 4,637 | 377,259 | 19,723 | 17,430 | 0 | 18,763 | 12,619 | 13,744 | 5,414 | |
| 2005 | 2,264,602 | 6,587 | 2,271,188 | 27,020 | 18,910 | 0 | 25,134 | 18,874 | 25,074 | 6,335 | |
| 2006 | 5,855,349 | 2,353 | 5,857,702 | 7,062 | 4,978 | 0 | 6,373 | 4,511 | 5,983 | 1,500 | |
| 2007 | 3,829,554 | 11,915 | 3,841,469 | 49,382 | 35,729 | 0 | 47,637 | 35,725 | 47,634 | 11,908 | |
| 2008 | 640,715 | 7,591 | 648,306 | 20,474 | 19,644 | 0 | 28,901 | 19,526 | 25,456 | 6,477 | |
| 2009 | 9,982,682 | 9,158 | 9,991,840 | 22,893 | 25,186 | 0 | 33,292 | 24,677 | 32,865 | 8,223 | |
| 2010 | 11,125,921 | 725 | 11,126,646 | 24,906 | 2,833 | 0 | 3,861 | 2,980 | 3,984 | 994 | |
| 2011 | 4,980,108 | 1,812 | 4,981,920 | 4,507 | 5,253 | 0 | 6,981 | 5,212 | 6,947 | 1,737 | |
| 2012 | 875,243 | 32,877 | 908,120 | 95,936 | 114,523 | 0 | 152,679 | 114,484 | 152,651 | 38,158 | |
| 2013 | 704,335 | 156,471 | 860,806 | 234,199 | 314,887 | 0 | 419,827 | 314,845 | 419,785 | 104,949 | |
| 2014 | 3,010,683 | 79,990 | 3,090,674 | 1,077,259 | 203,219 | 0 | 270,945 | 203,188 | 270,922 | 67,726 | |
| 2015 | 9,052,843 | 37,215 | 9,090,057 | 708,309 | 91,309 | 0 | 1,520,944 | 91,309 | 121,745 | 30,436 | |
| 2016 | 3,269,487 | 22,186 | 3,291,674 | 110,663 | 35,846 | 0 | 641,765 | 30,678 | 38,755 | 11,825 | |
| 2017 | 2,659,274 | 26,791 | 2,686,064 | 259,599 | 56,571 | 0 | 57,238 | 52,359 | 69,053 | 18,770 | |
| 2018 | 5,461,172 | 18,630 | 5,479,802 | 539,133 | 23,056 | 0 | 29,293 | 14,238 | 17,393 | 7,504 | |
| 2019 | 2,008,367 | 3,564,175 | 5,572,542 | 353,937 | 341,761 | 0 | 492,090 | 316,664 | 410,188 | 113,756 | |
| 2020 | 6,994,829 | 16,754 | 7,011,583 | 536,654 | 135,904 | 0 | 257,832 | 124,814 | 149,894 | 45,755 | |
| 2021 | 17,360,535 | 191,733 | 17,552,268 | 470,011 | 231,620 | 0 | 491,455 | 240,687 | 284,067 | 80,800 | |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| TOTAL | 339,537,091 | 58,790,631 | 398,327,721 | 55 | | | | | | | |

TABLE B-10 Capital Costs of Each Aqueduct Reach to be Reimbursed through Capital Cost Component of Transportation Charge (in dollars)

Sheet 6 of 8

^a Includes excess capacity costs (not shown in Table B-9) allocated to Metropolitan in the following years and repaid under Article 24(c) of its contract: 1970 - \$362,000; 1971 - \$6,198,000; 1972 - \$139,000.

TABLE B-10 Capital Costs of Each Aqueduct Reach to be Reimbursed through Capital Cost Component of Transportation Charge (in dollars)

Sheet 7 of 8

TABLE B-10 Capital Costs of Each Aqueduct Reach to be Reimbursed through Capital Cost Component of Transportation Charge (in dollars)

Sheet 8 of 8

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | Total | GRAND TOTAL | | |
|---------------|---------------------------------|-------------------|-------------------|-------------------|--------------------|----------------------|----------------------|--|--|
| | COASTAL BRANCH (continued) | | | | | | | | |
| | Reach 34 | Reach 35 | Reach 37 | Reach 38 | Subtotal | | | | |
| [70] | [71] | [72] | [73] | [74] | [75] | [76] | | | |
| 1952 | 0 | 0 | 0 | 0 | 0 | 98,857 | 99,353 | | |
| 1953 | 0 | 0 | 0 | 0 | 0 | 309,387 | 311,812 | | |
| 1954 | 0 | 0 | 0 | 0 | 0 | 394,688 | 402,143 | | |
| 1955 | 0 | 0 | 0 | 0 | 0 | 159,842 | 169,342 | | |
| 1956 | 0 | 0 | 0 | 0 | 0 | 255,679 | 351,551 | | |
| 1957 | 0 | 0 | 0 | 0 | 0 | 708,753 | 1,464,452 | | |
| 1958 | 0 | 0 | 0 | 0 | 0 | 1,331,616 | 2,286,623 | | |
| 1959 | 7,441 | 8,236 | 0 | 0 | 92,837 | 2,096,392 | 2,967,412 | | |
| 1960 | 8,507 | 14,265 | 0 | 0 | 127,626 | 2,937,049 | 4,660,833 | | |
| 1961 | 1,501 | 3,931 | 0 | 0 | 37,101 | 4,650,264 | 8,545,244 | | |
| 1962 | 524 | 1,689 | 0 | 0 | 20,132 | 5,827,774 | 8,875,171 | | |
| 1963 | 880 | 2,943 | 0 | 0 | 38,592 | 18,981,487 | 24,610,278 | | |
| 1964 | 1,687 | 5,639 | 0 | 0 | 349,707 | 31,550,813 | 41,736,060 | | |
| 1965 | 2,118 | 7,060 | 0 | 0 | 792,379 | 57,936,405 | 62,664,743 | | |
| 1966 | 1,736 | 5,764 | 0 | 0 | 2,302,279 | 124,748,128 | 129,110,330 | | |
| 1967 | 1,891 | 6,213 | 0 | 0 | 6,356,854 | 187,465,580 | 194,146,365 | | |
| 1968 | 1,324 | 4,369 | 0 | 0 | 2,744,057 | 192,593,079 | 197,978,911 | | |
| 1969 | 907 | 2,905 | 0 | 0 | 454,158 | 182,530,023 | 184,473,490 | | |
| 1970 | 851 | 2,787 | 0 | 0 | 297,200 | 206,720,774 | 207,082,650 | | |
| 1971 | 1,315 | 3,804 | 0 | 0 | 201,795 | 158,414,033 | 158,624,739 | | |
| 1972 | 522 | 1,660 | 0 | 0 | 151,115 | 68,228,670 | 68,362,291 | | |
| 1973 | 542 | 1,758 | 0 | 0 | 200,947 | 45,110,823 | 45,263,853 | | |
| 1974 | 463 | 1,405 | 0 | 0 | 211,533 | 24,036,199 | 24,402,166 | | |
| 1975 | 2,255 | 6,656 | 0 | 0 | 109,505 | 21,065,768 | 21,318,838 | | |
| 1976 | 5,088 | 14,988 | 0 | 0 | 287,240 | 17,183,961 | 17,492,910 | | |
| 1977 | 1,834 | 5,387 | 0 | 0 | 1,006,999 | 15,165,801 | 15,544,382 | | |
| 1978 | 1,302 | 3,852 | 0 | 0 | 141,448 | 18,661,117 | 19,119,151 | | |
| 1979 | 1,505 | 4,433 | 0 | 0 | 153,071 | 31,202,118 | 31,857,362 | | |
| 1980 | 1,152 | 3,449 | 0 | 0 | 569,707 | 73,891,101 | 74,986,833 | | |
| 1981 | 1,427 | 4,261 | 0 | 0 | (131,952) | 15,246,649 | 15,742,773 | | |
| 1982 | 588 | 1,787 | 0 | 0 | (110,455) | 38,256,580 | 39,705,931 | | |
| 1983 | 794 | 2,398 | 0 | 0 | 155,794 | 34,705,281 | 38,044,649 | | |
| 1984 | 986 | 2,959 | 0 | 0 | 86,587 | 24,454,091 | 30,382,250 | | |
| 1985 | 2,111 | 6,263 | 0 | 0 | 99,522 | 14,914,930 | 28,537,556 | | |
| 1986 | 17,458 | 51,279 | 0 | 0 | 374,229 | 13,435,351 | 43,155,828 | | |
| 1987 | 92,506 | 272,968 | 0 | 0 | 1,481,230 | 11,711,428 | 34,331,982 | | |
| 1988 | 99,456 | 293,612 | 0 | 0 | 1,718,193 | 11,026,370 | 18,123,243 | | |
| 1989 | 77,283 | 228,038 | 0 | 0 | 1,283,764 | 30,302,112 | 33,130,497 | | |
| 1990 | 103,785 | 277,889 | 0 | 0 | 1,615,709 | 32,589,619 | 34,435,721 | | |
| 1991 | 123,603 | 363,889 | 0 | 0 | 2,287,385 | 38,320,942 | 39,811,664 | | |
| 1992 | 566,230 | 240,553 | 102,051 | 74,162 | 3,882,392 | 34,312,996 | 35,041,233 | | |
| 1993 | 1,345,211 | 688,935 | 268,937 | 358,367 | 13,333,466 | 53,122,384 | 53,921,787 | | |
| 1994 | 8,915,445 | 2,363,238 | 678,753 | 1,315,559 | 50,802,227 | 73,751,564 | 74,225,377 | | |
| 1995 | 23,975,738 | 20,849,939 | 7,029,108 | 7,117,197 | 168,287,941 | 191,033,090 | 191,525,571 | | |
| 1996 | 26,475,298 | 18,790,572 | 7,213,823 | 6,616,310 | 157,333,165 | 187,776,347 | 188,025,325 | | |
| 1997 | 10,456,863 | 4,149,105 | 545,378 | 798,606 | 41,615,744 | 62,137,369 | 62,583,537 | | |
| 1998 | 3,368,320 | 952,615 | 192,567 | 280,779 | 11,557,715 | 27,083,446 | 27,217,157 | | |
| 1999 | 2,616,574 | 356,318 | 36,680 | 51,648 | 10,654,402 | 24,085,343 | 24,556,053 | | |
| 2000 | 2,746,120 | 17,830 | 0 | 0 | 6,091,222 | 13,504,773 | 13,742,557 | | |
| 2001 | 3,960 | (1,112) | 0 | 0 | 668,039 | 5,130,617 | 7,470,505 | | |
| 2002 | 77,266 | 13,119 | 0 | 0 | 442,204 | 9,921,954 | 18,223,863 | | |
| 2003 | 25,734 | 6,272 | 0 | 0 | 149,540 | 7,090,347 | 14,855,165 | | |
| 2004 | 3,142 | 1,942 | 0 | 0 | 66,873 | 5,724,375 | 10,829,600 | | |
| 2005 | 526 | 327 | 0 | 0 | (192,669) | 9,654,977 | 12,130,085 | | |
| 2006 | 4 | 18,012 | 0 | 0 | 68,949 | 16,031,812 | 18,522,243 | | |
| 2007 | 0 | 152 | 0 | 0 | 113,088 | 13,670,587 | 20,478,263 | | |
| 2008 | 24 | 14,163 | 0 | 0 | 101,277 | 15,861,831 | 30,324,188 | | |
| 2009 | 19 | 19,626 | 0 | 0 | 58,560 | 26,226,360 | 40,889,836 | | |
| 2010 | (6) | (5,643) | 0 | 0 | 631,075 | 23,052,168 | 45,955,128 | | |
| 2011 | 2 | 1,568 | 0 | 0 | 935,257 | 17,925,976 | 37,813,089 | | |
| 2012 | 96 | 1,455 | 0 | 0 | 610,523 | 23,976,419 | 37,907,075 | | |
| 2013 | 209 | 1,590 | 0 | 0 | 1,955,967 | 41,764,102 | 49,646,096 | | |
| 2014 | 114 | 1,113 | 0 | 0 | 2,644,952 | 34,814,330 | 35,171,702 | | |
| 2015 | 1,286 | 0 | 0 | 0 | 2,091,000 | 52,012,552 | 55,373,476 | | |
| 2016 | 2,899 | 0 | 0 | 0 | 2,114,775 | 79,236,007 | 80,365,188 | | |
| 2017 | 2,412 | 0 | 0 | 0 | 2,194,321 | 47,373,293 | 48,109,368 | | |
| 2018 | 242 | 0 | 0 | 0 | 2,281,723 | 52,196,349 | 54,920,605 | | |
| 2019 | 43 | 0 | 0 | 0 | 5,610,329 | 82,297,146 | 85,485,311 | | |
| 2020 | 0 | 0 | 0 | 0 | 5,931,156 | 102,244,364 | 106,908,310 | | |
| 2021 | 452 | 0 | 0 | 0 | 9,067,283 | 196,147,121 | 205,749,460 | | |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| TOTAL | 81,149,563 | 50,100,223 | 16,067,297 | 16,612,628 | 526,608,783 | 3,288,379,533 | 3,592,278,535 | | |

TABLE B-11 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of Transportation Charge (in dollars)

Sheet 1 of 9

| Calendar Year | Upper Feather Division | North Bay Aqueduct | | | | | South Bay Aqueduct | | | | |
|---------------|------------------------|--------------------|-------------------|-------------------|-------------------|--------------------|--------------------|-------------------|-------------------|-------------------|------|
| | | Reach 1 | Reach 2 | Reach 3A | Reach 3B | Total | Reach 1 | Reach 2 | Reach 4 | Reach 5 | |
| 1961 | 0 | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 37,396 | 5,522 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 147,719 | 20,639 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 149,750 | 15,574 | 19,405 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 259,939 | 45,718 | 46,485 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 270,890 | 23,799 | 63,921 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 438,050 | 32,798 | 108,127 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 130 | 130 | 410,919 | 44,277 | 66,973 | 706 | |
| 1969 | 0 | 0 | 0 | 0 | 80,875 | 80,875 | 487,377 | 48,339 | 75,644 | 706 | |
| 1970 | 0 | 0 | 0 | 0 | 94,872 | 94,872 | 381,734 | 44,852 | 64,833 | 71,376 | |
| 1971 | 54 | 0 | 0 | 0 | 45,579 | 45,579 | 357,850 | 25,666 | 50,344 | 38,735 | |
| 1972 | 40 | 0 | 0 | 0 | 37,895 | 37,895 | 347,941 | 30,606 | 56,800 | 100,106 | |
| 1973 | 1 | 0 | 0 | 0 | 32,993 | 32,993 | 386,897 | 36,172 | 58,288 | 28,810 | |
| 1974 | 143 | 0 | 0 | 0 | 46,498 | 46,498 | 456,381 | 57,081 | 83,120 | 61,623 | |
| 1975 | 1,069 | 0 | 0 | 0 | 37,707 | 37,707 | 624,989 | 46,111 | 81,361 | 36,682 | |
| 1976 | 139 | 0 | 0 | 0 | 60,786 | 60,786 | 614,362 | 47,862 | 123,838 | 91,096 | |
| 1977 | 892 | 0 | 0 | 0 | 78,400 | 78,400 | 511,065 | 48,926 | 104,280 | 102,083 | |
| 1978 | 39 | 0 | 0 | 0 | 56,318 | 56,318 | 671,195 | 125,224 | 176,855 | 50,289 | |
| 1979 | 3,235 | 0 | 0 | 0 | 73,852 | 73,852 | 650,826 | 76,849 | 212,826 | 91,380 | |
| 1980 | 416 | 0 | 0 | 0 | 81,769 | 81,769 | 1,128,840 | 212,974 | 242,118 | 110,786 | |
| 1981 | 3,847 | 0 | 0 | 0 | 101,340 | 101,340 | 884,763 | 130,126 | 167,118 | 204,772 | |
| 1982 | 11,075 | 0 | 0 | 0 | 191,987 | 191,987 | 1,156,605 | 141,718 | 249,447 | 96,020 | |
| 1983 | 1,928 | 0 | 0 | 0 | 80,215 | 80,215 | 1,258,144 | 84,360 | 373,875 | 152,255 | |
| 1984 | 3,765 | 0 | 0 | 0 | 139,121 | 139,121 | 1,998,984 | 113,797 | 340,344 | 34,461 | |
| 1985 | 2,888 | 0 | 0 | 0 | 259,515 | 259,515 | 2,044,121 | 207,478 | 427,930 | 247,308 | |
| 1986 | 2,787 | 0 | 0 | 0 | 229,508 | 229,508 | 1,834,838 | 285,908 | 305,149 | 159,054 | |
| 1987 | 2,388 | 0 | 0 | 0 | 310,683 | 310,683 | 2,118,974 | 163,714 | 400,547 | 283,067 | |
| 1988 | 545 | 0 | (94) | 0 | 330,156 | 330,062 | 2,068,655 | 186,275 | 299,934 | 370,212 | |
| 1989 | 1,800 | 473,408 | 178,069 | 237,480 | 373,427 | 1,262,384 | 2,164,688 | 163,481 | 320,734 | 497,038 | |
| 1990 | 788 | 556,610 | 244,897 | 123,144 | 427,257 | 1,351,908 | 2,233,036 | 251,434 | 355,022 | 571,415 | |
| 1991 | 3,654 | 651,307 | 302,327 | 205,516 | 428,470 | 1,587,620 | 1,806,699 | 152,509 | 95,745 | 93,986 | |
| 1992 | 647 | 443,912 | 189,330 | 265,462 | 280,505 | 1,179,209 | 2,064,907 | 405,932 | 409,435 | 363,964 | |
| 1993 | 3,630 | 435,240 | 294,416 | 213,267 | 289,206 | 1,232,129 | 3,925,050 | 621,712 | 480,832 | 399,558 | |
| 1994 | 2,279 | 430,112 | 198,322 | 206,594 | 365,646 | 1,200,674 | 4,673,275 | 302,115 | 404,709 | 408,066 | |
| 1995 | 2,906 | 428,313 | 282,898 | 151,703 | 295,326 | 1,158,240 | 3,849,620 | 316,905 | 566,447 | 330,706 | |
| 1996 | 8,007 | 796,526 | 272,743 | 240,106 | 260,001 | 1,569,376 | 3,526,989 | 254,075 | 664,485 | 493,300 | |
| 1997 | 7,449 | 504,476 | 210,763 | 213,211 | 315,374 | 1,243,824 | 3,010,809 | 189,269 | 591,540 | 360,371 | |
| 1998 | 798 | 404,834 | 227,562 | 204,821 | 251,154 | 1,088,371 | 2,965,219 | 426,872 | 532,042 | 303,263 | |
| 1999 | 416 | 678,159 | 332,340 | 298,066 | 289,895 | 1,598,459 | 3,748,823 | 478,982 | 437,660 | 463,868 | |
| 2000 | 505 | 919,507 | 254,331 | 658,043 | 414,242 | 2,246,122 | 3,810,261 | 541,683 | 440,845 | 549,043 | |
| 2001 | 314 | 1,072,602 | 229,536 | 456,017 | 181,422 | 1,939,577 | 2,907,864 | 272,655 | 289,843 | 390,435 | |
| 2002 | 3,627 | 1,586,248 | 415,635 | 410,985 | 398,645 | 2,811,513 | 3,853,092 | 341,500 | 466,141 | 537,905 | |
| 2003 | 393 | 1,776,808 | 545,849 | 567,701 | 354,209 | 3,244,568 | 2,347,693 | 365,740 | 575,369 | 963,063 | |
| 2004 | 455 | 1,601,515 | 635,339 | 738,083 | 818,164 | 3,793,101 | 3,338,899 | 510,171 | 746,544 | 697,984 | |
| 2005 | 452 | 1,059,791 | 322,691 | 767,313 | 412,453 | 2,562,248 | 3,309,594 | 262,581 | 427,595 | 807,600 | |
| 2006 | 3,900 | 785,569 | 233,531 | 602,287 | 431,930 | 2,053,317 | 3,478,754 | 377,971 | 753,998 | 591,098 | |
| 2007 | (8) | 1,081,245 | 232,484 | 467,676 | 275,805 | 2,057,211 | 5,023,796 | 691,584 | 588,718 | 790,108 | |
| 2008 | 3,578 | 823,765 | 217,850 | 526,554 | 602,872 | 2,171,041 | 5,218,891 | 679,956 | 744,437 | 927,274 | |
| 2009 | 88 | 1,229,747 | 276,665 | 619,451 | 554,226 | 2,680,089 | 4,041,197 | 678,768 | 715,060 | 1,362,529 | |
| 2010 | 25 | 2,671,470 | 111,842 | 1,104,059 | 275,902 | 4,163,272 | 4,490,592 | 578,352 | 804,400 | 717,651 | |
| 2011 | 63 | 2,639,192 | 584,088 | 1,238,782 | 415,722 | 4,877,785 | 5,165,636 | 838,752 | 874,821 | 501,976 | |
| 2012 | (24) | 2,614,239 | 143,189 | 1,452,281 | 1,125,652 | 5,335,361 | 5,308,623 | 1,113,953 | 749,797 | 832,419 | |
| 2013 | 277 | 3,328,826 | 133,891 | 477,153 | 372,114 | 4,311,984 | 6,182,967 | 1,217,986 | 685,070 | 1,105,395 | |
| 2014 | 111 | 4,065,720 | 176,402 | 610,595 | 548,967 | 5,401,684 | 7,348,031 | 627,122 | 640,550 | 1,307,962 | |
| 2015 | 114 | 2,881,654 | 251,144 | 1,224,921 | 1,084,146 | 5,441,864 | 8,559,342 | 664,574 | 632,973 | 860,797 | |
| 2016 | 5,401 | 4,877,283 | 324,904 | 599,337 | 1,026,907 | 6,828,431 | 6,914,933 | 686,229 | 665,325 | 1,220,555 | |
| 2017 | 111 | 2,581,177 | 400,929 | 694,814 | 833,128 | 4,510,048 | 7,287,391 | 1,196,715 | 1,691,918 | 1,274,076 | |
| 2018 | 47,579 | 3,481,723 | 244,318 | 948,164 | 1,460,963 | 6,135,168 | 11,439,902 | 1,208,928 | 716,065 | 1,807,081 | |
| 2019 | 2,747 | 4,618,951 | 352,609 | 775,322 | 1,727,024 | 7,473,906 | 9,506,056 | 1,317,552 | 1,265,241 | 1,814,779 | |
| 2020 | 2,948 | 3,921,207 | 343,927 | 1,956,847 | 1,250,227 | 7,472,208 | 9,465,981 | 1,341,687 | 1,244,805 | 1,754,529 | |
| 2021 | 2,800 | 4,069,389 | 345,974 | 867,212 | 1,264,799 | 6,547,374 | 9,757,166 | 1,769,001 | 1,252,757 | 2,318,282 | |
| 2022 | 2,860 | 4,245,214 | 350,978 | 1,211,791 | 1,428,157 | 7,236,140 | 9,672,165 | 1,490,841 | 1,266,811 | 1,982,155 | |
| 2023 | 2,889 | 4,287,666 | 354,488 | 1,223,909 | 1,442,439 | 7,308,502 | 9,768,887 | 1,505,749 | 1,279,479 | 2,001,977 | |
| 2024 | 2,918 | 4,330,543 | 358,033 | 1,236,148 | 1,456,863 | 7,381,587 | 9,866,576 | 1,520,807 | 1,292,274 | 2,021,997 | |
| 2025 | 2,947 | 4,373,848 | 361,613 | 1,248,509 | 1,471,432 | 7,455,402 | 9,965,241 | 1,536,015 | 1,305,196 | 2,042,217 | |
| 2026 | 2,976 | 4,417,587 | 365,229 | 1,260,995 | 1,486,146 | 7,529,957 | 10,064,894 | 1,551,375 | 1,318,248 | 2,062,639 | |
| 2027 | 3,006 | 4,461,762 | 368,881 | 1,273,604 | 1,501,008 | 7,605,255 | 10,165,543 | 1,566,889 | 1,331,431 | 2,083,265 | |
| 2028 | 3,036 | 4,506,380 | 372,570 | 1,286,340 | 1,516,018 | 7,681,308 | 10,267,198 | 1,582,558 | 1,344,745 | 2,104,098 | |
| 2029 | 3,067 | 4,551,444 | 376,296 | 1,299,204 | 1,531,178 | 7,758,122 | 10,369,870 | 1,598,383 | 1,358,193 | 2,125,139 | |
| 2030 | 3,097 | 4,596,958 | 380,059 | 1,312,196 | 1,546,490 | 7,835,703 | 10,473,569 | 1,614,367 | 1,371,774 | 2,146,390 | |
| 2031 | 3,128 | 4,642,928 | 383,860 | 1,325,318 | 1,561,954 | 7,914,060 | 10,578,304 | 1,630,511 | 1,385,492 | 2,167,854 | |
| 2032 | 3,160 | 4,689,357 | 387,698 | 1,338,571 | 1,577,574 | 7,993,200 | 10,684,087 | 1,646,816 | 1,399,347 | 2,189,533 | |
| 2033 | 3,191 | 4,736,251 | 391,575 | 1,351,957 | 1,593,350 | 8,073,133 | 10,790,928 | 1,663,284 | 1,413,341 | 2,211,428 | |
| 2034 | 3,223 | 4,783,613 | 395,491 | 1,365,476 | 1,609,283 | 8,153,863 | 10,898,838 | 1,679,917 | 1,427,474 | 2,233,542 | |
| 2035 | 3,255 | 4,831,449 | 399,446 | 1,379,131 | 1,625,376 | 8,235,402 | 11,077,826 | 1,696,716 | 1,441,749 | 2,255,878 | |
| TOTAL | 185,833 | 122,945,524 | 14,756,920 | 38,236,118 | 43,123,245 | 219,061,806 | 328,998,906 | 45,433,340 | 44,966,040 | 59,247,715 | |

TABLE B-11 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of Transportation Charge (in dollars)

Sheet 2 of 9

| Calendar Year | SOUTH BAY AQUEDUCT (continued) | | | | | CALIFORNIA AQUEDUCT | | | |
|---------------|--------------------------------|------------------|------------------|-------------------|--------------------|----------------------------|--------------------|-------------------|----------------------|
| | | | | | | NORTH SAN JOAQUIN DIVISION | | | |
| | Reach 6 | Reach 7 | Reach 8 | Reach 9 | Total | Reach 1 | Reach 2A | Reach 2B | Subtotal |
| 1961 | [11] | [12] | [13] | [14] | [15] | [16] | [17] | [18] | [19] |
| 1962 | 0 | 0 | 0 | 0 | 42,918 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 168,358 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 184,729 | 0 | 0 | 0 | 0 |
| 1965 | 2,634 | 6,490 | 4,704 | 12,904 | 378,874 | 0 | 0 | 0 | 0 |
| 1966 | 4,707 | 10,328 | 9,233 | 25,519 | 408,397 | 0 | 0 | 0 | 0 |
| 1967 | 2,712 | 7,659 | 10,812 | 34,347 | 634,505 | 0 | 0 | 0 | 0 |
| 1968 | 3,109 | 7,960 | 10,166 | 40,372 | 584,482 | 1,001,998 | 228,359 | 103,116 | 1,333,473 |
| 1969 | 3,944 | 5,975 | 8,795 | 38,566 | 669,346 | 933,116 | 301,596 | 188,194 | 1,422,906 |
| 1970 | 2,464 | (1,991) | 6,870 | 28,210 | 598,348 | 971,602 | 306,198 | 151,539 | 1,429,339 |
| 1971 | 3,116 | 9,394 | 9,895 | 31,068 | 526,068 | 1,103,021 | 254,786 | 113,694 | 1,471,501 |
| 1972 | 5,125 | 10,247 | 12,054 | 44,699 | 607,578 | 1,107,855 | 230,906 | 110,109 | 1,448,870 |
| 1973 | 4,178 | 7,500 | 4,890 | 43,816 | 570,551 | 1,150,864 | 221,445 | 100,221 | 1,472,530 |
| 1974 | 7,812 | 7,564 | 5,523 | 48,054 | 727,158 | 1,272,034 | 231,383 | 117,156 | 1,620,573 |
| 1975 | 18,120 | 14,683 | 18,325 | 68,377 | 908,648 | 1,434,736 | 455,110 | 201,075 | 2,090,921 |
| 1976 | 10,873 | 5,557 | 19,920 | 49,921 | 963,429 | 1,519,801 | 217,348 | 453,400 | 2,190,549 |
| 1977 | (240) | 2,228 | 8,391 | 89,579 | 866,312 | 1,913,643 | 292,380 | 196,564 | 2,402,587 |
| 1978 | (1,404) | 16,766 | (5,313) | 104,078 | 1,137,690 | 1,860,456 | 306,503 | 188,214 | 2,355,173 |
| 1979 | 1,269 | 29,294 | 7,351 | 106,835 | 1,176,630 | 1,848,109 | 231,339 | 145,205 | 2,224,653 |
| 1980 | 3,621 | 24,270 | 17,404 | 110,852 | 1,850,865 | 2,365,292 | 472,660 | 247,608 | 3,085,560 |
| 1981 | 4,038 | 20,109 | 17,586 | 98,143 | 1,526,655 | 2,649,730 | 435,226 | 154,191 | 3,239,147 |
| 1982 | 2,236 | 22,870 | 21,919 | 202,590 | 1,893,405 | 3,192,710 | 599,793 | 244,664 | 4,037,167 |
| 1983 | (2,047) | 48,781 | 45,573 | 216,434 | 2,177,375 | 4,244,937 | 802,908 | 273,081 | 5,320,926 |
| 1984 | 4,449 | 44,017 | 23,563 | 455,054 | 3,014,669 | 4,373,157 | 808,917 | 290,728 | 5,472,802 |
| 1985 | 13,097 | 74,565 | 57,920 | 238,067 | 3,310,486 | 4,717,323 | 629,825 | 189,199 | 5,536,347 |
| 1986 | 11,614 | 31,084 | 46,864 | 363,350 | 3,037,861 | 5,217,491 | 929,919 | 359,365 | 6,506,775 |
| 1987 | 15,273 | 25,182 | 37,949 | 416,375 | 3,461,081 | 5,292,200 | 958,927 | 362,065 | 6,613,192 |
| 1988 | 30,207 | 41,047 | 49,156 | 335,408 | 3,380,894 | 5,329,317 | 822,300 | 360,336 | 6,511,953 |
| 1989 | 9,740 | 54,881 | 114,203 | 179,323 | 3,504,088 | 5,753,966 | 851,745 | 907,609 | 7,513,320 |
| 1990 | 31,161 | 69,416 | 119,309 | 247,781 | 3,878,574 | 6,788,986 | 1,066,314 | 883,822 | 8,739,122 |
| 1991 | 22,434 | (18,690) | 99,577 | 262,052 | 2,514,312 | 6,796,247 | 1,067,078 | 585,008 | 8,448,333 |
| 1992 | 26,787 | 332,012 | 98,670 | 186,640 | 3,888,347 | 9,415,121 | 1,419,603 | 673,833 | 11,508,557 |
| 1993 | 24,845 | 181,592 | 94,169 | 316,045 | 6,043,803 | 10,274,070 | 1,371,074 | 900,996 | 12,546,140 |
| 1994 | 28,383 | 90,791 | 80,942 | 416,061 | 6,404,342 | 8,451,199 | 1,325,511 | 802,217 | 10,578,927 |
| 1995 | 29,298 | 64,012 | 80,278 | 373,657 | 5,610,923 | 10,406,784 | 2,386,507 | 959,685 | 13,752,976 |
| 1996 | (1,020) | 60,610 | 11,672 | 31,297 | 5,322,208 | 10,246,985 | 2,604,651 | 628,177 | 13,479,813 |
| 1997 | 18,428 | 95,321 | 15,691 | 335,566 | 4,486,995 | 10,429,338 | 1,098,381 | 2,084,859 | 13,612,578 |
| 1998 | 26,323 | 54,255 | 611,290 | 658,090 | 5,577,354 | 11,409,135 | 1,449,411 | 5,364,368 | 18,222,914 |
| 1999 | 50,555 | 36,519 | 430,229 | 2,035,938 | 7,682,573 | 11,604,989 | 1,444,270 | 1,338,751 | 14,388,009 |
| 2000 | 135,741 | 87,477 | 185,352 | 640,391 | 6,390,795 | 12,609,887 | 900,319 | 643,835 | 14,154,042 |
| 2001 | 112,954 | 188,920 | 197,678 | 1,047,945 | 5,408,295 | 17,554,493 | 1,378,254 | 753,349 | 19,686,097 |
| 2002 | 143,673 | 171,046 | 500,788 | 2,780,034 | 8,794,180 | 14,389,040 | 859,538 | 618,090 | 15,866,667 |
| 2003 | 77,999 | 97,782 | 247,719 | 987,204 | 5,662,570 | 16,518,135 | 1,742,176 | 753,175 | 19,013,487 |
| 2004 | 156,564 | 179,006 | 205,095 | 453,634 | 6,287,896 | 13,885,738 | 1,210,241 | 678,472 | 15,774,451 |
| 2005 | 143,052 | 202,176 | 135,131 | 223,699 | 5,511,428 | 12,444,177 | 1,941,010 | 872,985 | 15,258,172 |
| 2006 | 144,002 | 120,668 | 74,912 | 378,425 | 5,919,828 | 13,744,377 | 1,917,479 | 1,252,934 | 16,914,790 |
| 2007 | 78,627 | 115,099 | 67,469 | 242,249 | 7,597,649 | 11,990,993 | 1,702,413 | 627,155 | 14,320,561 |
| 2008 | 171,811 | 156,742 | 233,976 | 235,762 | 8,368,850 | 15,569,920 | 1,453,134 | 808,734 | 17,831,788 |
| 2009 | 84,717 | 141,922 | 114,597 | 619,772 | 7,758,562 | 13,696,221 | 1,067,459 | 864,287 | 15,627,967 |
| 2010 | 52,326 | 572,894 | 23,825 | 453,466 | 7,693,507 | 12,888,957 | 2,054,826 | 1,410,709 | 16,304,493 |
| 2011 | 82,635 | 77,126 | 58,547 | 472,662 | 8,072,156 | 16,658,230 | 2,808,698 | 1,443,459 | 20,910,388 |
| 2012 | 56,146 | 133,309 | 61,977 | 2,498,758 | 10,754,983 | 15,617,752 | 1,322,715 | 1,308,734 | 18,249,200 |
| 2013 | 82,457 | 175,232 | 98,865 | 1,184,314 | 10,732,285 | 16,734,641 | 1,742,810 | 2,419,046 | 20,896,497 |
| 2014 | 185,738 | 169,939 | 58,246 | 2,042,934 | 12,380,523 | 23,467,133 | 2,749,340 | 1,990,423 | 28,206,896 |
| 2015 | 122,064 | 194,385 | 144,459 | 3,166,945 | 14,345,539 | 24,874,150 | 1,636,319 | 1,915,102 | 28,425,571 |
| 2016 | 137,092 | 306,373 | 76,490 | 8,933,218 | 18,940,215 | 24,399,389 | 2,628,223 | 2,199,781 | 29,227,394 |
| 2017 | 92,159 | 143,308 | 137,359 | 4,913,608 | 16,736,534 | 24,512,356 | 847,369 | 879,358 | 26,239,083 |
| 2018 | 78,661 | 174,812 | 70,301 | 3,562,055 | 19,057,804 | 27,188,108 | 1,128,700 | 2,103,126 | 30,419,934 |
| 2019 | 122,695 | 243,031 | 98,819 | 1,724,319 | 16,092,492 | 30,904,055 | 2,422,905 | 2,366,588 | 35,693,548 |
| 2020 | 120,466 | 238,640 | 97,109 | 1,634,779 | 15,897,996 | 33,399,906 | 2,687,295 | 2,623,344 | 38,710,545 |
| 2021 | 121,224 | 239,253 | 96,332 | 1,640,278 | 17,194,293 | 28,079,523 | 2,411,120 | 2,355,409 | 32,846,052 |
| 2022 | 122,677 | 242,711 | 98,394 | 1,683,124 | 16,558,878 | 31,102,440 | 2,532,177 | 2,472,931 | 36,107,548 |
| 2023 | 123,903 | 245,138 | 99,378 | 1,699,955 | 16,724,466 | 31,413,464 | 2,557,499 | 2,497,661 | 36,468,624 |
| 2024 | 125,142 | 247,590 | 100,372 | 1,716,954 | 16,891,712 | 31,727,599 | 2,583,074 | 2,522,637 | 36,833,310 |
| 2025 | 126,394 | 250,065 | 101,376 | 1,734,124 | 17,060,628 | 32,044,875 | 2,608,905 | 2,547,864 | 37,201,644 |
| 2026 | 127,658 | 252,566 | 102,389 | 1,751,465 | 17,231,234 | 32,365,324 | 2,634,994 | 2,573,342 | 37,573,660 |
| 2027 | 128,934 | 255,092 | 103,413 | 1,768,980 | 17,403,547 | 32,688,977 | 2,661,344 | 2,599,076 | 37,949,397 |
| 2028 | 130,224 | 257,643 | 104,447 | 1,786,670 | 17,577,583 | 33,015,867 | 2,687,957 | 2,625,067 | 38,328,891 |
| 2029 | 131,526 | 260,219 | 105,492 | 1,804,536 | 17,753,358 | 33,346,025 | 2,714,837 | 2,651,317 | 38,712,179 |
| 2030 | 132,841 | 262,821 | 106,547 | 1,822,582 | 17,930,891 | 33,679,486 | 2,741,985 | 2,677,830 | 39,099,301 |
| 2031 | 134,170 | 265,450 | 107,612 | 1,840,807 | 18,110,200 | 34,016,281 | 2,769,405 | 2,704,609 | 39,490,295 |
| 2032 | 135,511 | 268,104 | 108,688 | 1,859,216 | 18,291,302 | 34,356,443 | 2,797,099 | 2,731,655 | 39,885,197 |
| 2033 | 136,866 | 270,785 | 109,775 | 1,877,808 | 18,474,215 | 34,700,008 | 2,825,070 | 2,758,971 | 40,284,049 |
| 2034 | 138,235 | 273,493 | 110,873 | 1,896,586 | 18,658,958 | 35,047,008 | 2,853,320 | 2,786,561 | 40,686,889 |
| 2035 | 139,617 | 276,228 | 111,982 | 1,915,552 | 18,845,548 | 35,397,478 | 2,881,854 | 2,814,427 | 41,093,759 |
| TOTAL | 4,754,345 | 9,249,344 | 6,661,362 | 73,520,678 | 572,831,731 | 1,041,054,670 | 102,284,235 | 87,531,092 | 1,230,869,997 |

TABLE B-11 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of Transportation Charge (in dollars)

Sheet 3 of 9

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|---------------------------------|--------------------|-------------------|-------------------|--------------------|--------------------|----------------------------|-------------------|-------------------|-------------------|
| | SAN LUIS DIVISION | | | | | | SOUTH SAN JOAQUIN DIVISION | | | |
| | Reach 3 | Reach 4 | Reach 5 | Reach 6 | Reach 7 | Subtotal | Reach 8C | Reach 8D | Reach 9 | Reach 10A |
| 1961 | [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 120,038 | 428,308 | 130,105 | 44,591 | 104,033 | 827,075 | 0 | 0 | 0 | 0 |
| 1969 | 90,033 | 460,907 | 184,467 | 35,696 | 235,322 | 1,006,425 | 22,013 | 134,760 | 86,103 | 83,706 |
| 1970 | 89,547 | 484,300 | 226,002 | 66,070 | 192,582 | 1,058,501 | 26,207 | 156,981 | 128,273 | 118,046 |
| 1971 | 99,917 | 541,574 | 175,592 | 64,193 | 158,170 | 1,039,446 | 32,312 | 190,753 | 118,372 | 129,811 |
| 1972 | 116,708 | 647,979 | 174,519 | 73,670 | 154,783 | 1,167,659 | 35,031 | 187,242 | 130,396 | 117,625 |
| 1973 | 116,791 | 611,705 | 158,145 | 58,344 | 153,955 | 1,098,940 | 51,150 | 225,747 | 127,530 | 117,706 |
| 1974 | 120,309 | 671,455 | 150,835 | 63,905 | 150,230 | 1,156,734 | 34,752 | 199,127 | 131,298 | 141,658 |
| 1975 | 133,593 | 839,285 | 178,974 | 81,478 | 157,586 | 1,390,916 | 78,523 | 250,377 | 159,006 | 207,908 |
| 1976 | 54,938 | 883,956 | 220,832 | 90,305 | 174,835 | 1,424,866 | 39,348 | 133,933 | 123,424 | 139,134 |
| 1977 | 73,331 | 1,114,465 | 270,734 | 98,132 | 196,311 | 1,752,973 | 38,086 | 121,348 | 178,078 | 194,086 |
| 1978 | 45,867 | 898,992 | 203,261 | 106,938 | 203,079 | 1,458,137 | 45,552 | 178,805 | 129,928 | 168,634 |
| 1979 | 223,973 | 842,508 | 144,055 | 99,670 | 180,734 | 1,490,940 | 69,973 | 150,679 | 129,756 | 175,107 |
| 1980 | 243,507 | 1,176,463 | 222,942 | 127,625 | 281,860 | 2,052,397 | 57,726 | 274,848 | 185,155 | 284,207 |
| 1981 | 265,766 | 1,065,358 | 193,048 | 90,533 | 1,612,157 | 3,226,862 | 80,121 | 198,256 | 144,187 | 199,927 |
| 1982 | 279,250 | 1,241,285 | 209,371 | 114,421 | 1,433,180 | 3,277,507 | 59,424 | 269,086 | 233,494 | 264,947 |
| 1983 | 214,468 | 1,949,017 | 339,809 | 131,377 | 2,143,678 | 4,778,349 | 49,448 | 383,476 | 223,078 | 308,801 |
| 1984 | 241,273 | 2,233,969 | 335,166 | 163,858 | 2,111,386 | 5,085,652 | 42,062 | 458,489 | 300,924 | 396,448 |
| 1985 | 322,068 | 2,882,583 | 360,431 | 176,577 | 1,603,532 | 5,345,191 | 58,820 | 495,500 | 213,368 | 298,337 |
| 1986 | 416,027 | 2,996,792 | 472,551 | 252,188 | 601,250 | 4,738,808 | 90,730 | 478,786 | 596,800 | 422,493 |
| 1987 | 362,738 | 3,104,592 | 424,107 | 236,349 | 439,232 | 4,567,018 | 113,962 | 412,042 | 446,067 | 488,226 |
| 1988 | 365,209 | 2,954,186 | 456,864 | 231,754 | 639,242 | 4,647,255 | 96,728 | 379,073 | 417,991 | 532,489 |
| 1989 | 263,171 | 3,182,472 | 393,589 | 332,986 | 633,419 | 4,805,637 | 83,282 | 389,698 | 400,853 | 733,030 |
| 1990 | 397,353 | 4,011,110 | 579,073 | 464,639 | 729,132 | 6,181,307 | 111,019 | 436,849 | 515,611 | 651,465 |
| 1991 | 256,473 | 4,388,184 | 543,760 | 728,156 | 765,765 | 6,682,338 | 104,414 | 496,794 | 465,940 | 716,328 |
| 1992 | 302,021 | 3,792,401 | 795,587 | 363,134 | 815,590 | 6,068,733 | 118,315 | 511,982 | 417,871 | 574,145 |
| 1993 | 439,725 | 4,337,616 | 1,008,394 | 551,849 | 734,796 | 7,072,380 | 230,338 | 745,885 | 490,159 | 723,450 |
| 1994 | 282,579 | 4,376,461 | 816,129 | 396,768 | 492,860 | 6,364,797 | 125,398 | 602,404 | 572,557 | 703,493 |
| 1995 | 107,995 | 5,026,076 | 1,066,971 | 440,006 | 1,356,668 | 7,997,716 | 185,681 | 657,282 | 432,072 | 881,902 |
| 1996 | 1,003,229 | 4,738,221 | 931,944 | 683,323 | 1,034,376 | 8,391,093 | 112,062 | 416,294 | 472,350 | 984,784 |
| 1997 | 859,665 | 5,761,996 | 924,289 | 254,934 | 646,209 | 8,447,093 | 128,190 | 449,316 | 728,436 | 1,864,113 |
| 1998 | 690,845 | 5,520,206 | 1,242,589 | 534,931 | 654,538 | 8,643,109 | 115,748 | 457,845 | 429,433 | 1,011,284 |
| 1999 | 601,726 | 5,793,961 | 1,220,810 | 540,364 | 679,483 | 8,836,344 | 107,647 | 426,289 | 440,869 | 1,161,363 |
| 2000 | 708,286 | 5,827,739 | 1,028,615 | 525,016 | 871,632 | 8,961,288 | 103,886 | 465,559 | 511,640 | 921,482 |
| 2001 | (566,076) | 7,151,927 | 850,787 | 372,374 | 677,824 | 8,486,836 | 58,346 | 553,100 | 602,903 | 870,228 |
| 2002 | 1,074,504 | 5,158,928 | 663,437 | 249,531 | 731,367 | 7,877,767 | 54,621 | 729,615 | 416,199 | 1,308,232 |
| 2003 | 1,033,869 | 6,035,487 | 744,447 | 301,820 | 617,486 | 8,733,109 | 62,399 | 676,784 | 645,931 | 819,094 |
| 2004 | 619,555 | 6,864,923 | 679,549 | 337,720 | 578,318 | 9,080,065 | 35,365 | 474,152 | 334,451 | 604,816 |
| 2005 | 553,163 | 5,984,035 | 984,716 | 401,930 | 799,290 | 8,723,134 | 28,347 | 403,804 | 296,577 | 898,100 |
| 2006 | (72,065) | 6,142,275 | 1,589,057 | 635,480 | 903,198 | 9,197,945 | 46,883 | 533,449 | 792,795 | 483,896 |
| 2007 | 1,136,822 | 7,698,580 | 1,963,723 | 688,171 | 935,874 | 12,423,170 | 242,813 | 856,857 | 536,467 | 633,836 |
| 2008 | 899,971 | 10,657,303 | 2,157,252 | 666,294 | 973,858 | 15,354,679 | 72,318 | 457,379 | 662,299 | 949,391 |
| 2009 | 970,684 | 8,137,729 | 1,233,449 | 511,298 | 1,151,083 | 12,004,244 | 36,807 | 769,730 | 477,883 | 933,381 |
| 2010 | 1,009,089 | 9,613,524 | 1,575,456 | 558,985 | 1,296,449 | 14,053,504 | 66,908 | 742,932 | 549,795 | 726,025 |
| 2011 | 1,234,146 | 7,636,959 | 2,867,710 | 602,233 | 1,663,997 | 14,005,045 | 12,939 | 600,194 | 794,875 | 1,163,621 |
| 2012 | 1,671,645 | 10,874,392 | 2,402,105 | 638,103 | 1,233,251 | 16,819,496 | 36,209 | 662,247 | 807,940 | 814,782 |
| 2013 | 1,833,554 | 11,580,652 | 2,887,741 | 1,357,357 | 3,282,869 | 20,942,174 | 39,532 | 615,225 | 612,517 | 1,015,738 |
| 2014 | 1,354,678 | 11,567,902 | 2,452,772 | 784,985 | 1,301,341 | 17,461,679 | 4,019 | 1,132,617 | 251,826 | 1,959,675 |
| 2015 | 1,182,102 | 11,849,145 | 2,376,832 | 847,500 | 2,059,410 | 18,314,989 | 6,552 | 541,770 | 240,851 | 1,425,893 |
| 2016 | 1,582,418 | 12,317,738 | 2,081,600 | 691,549 | 2,071,528 | 18,744,832 | 90,060 | 210,059 | 260,987 | 1,108,086 |
| 2017 | 979,574 | 9,507,579 | 1,947,011 | 737,191 | 2,535,876 | 15,707,231 | 34,474 | 477,372 | 357,894 | 1,147,709 |
| 2018 | 877,568 | 10,717,834 | 2,477,671 | 807,667 | 2,396,704 | 17,277,444 | 196,509 | 453,844 | 330,369 | 487,287 |
| 2019 | 2,055,129 | 14,835,178 | 2,798,609 | 948,629 | 3,101,023 | 23,738,568 | 153,984 | 520,011 | 428,651 | 1,149,902 |
| 2020 | 1,961,431 | 12,285,013 | 2,564,102 | 859,909 | 2,802,879 | 20,473,334 | 150,390 | 513,253 | 423,771 | 1,126,168 |
| 2021 | 2,089,720 | 13,465,207 | 2,558,410 | 858,557 | 2,795,807 | 21,767,701 | 154,163 | 522,804 | 432,402 | 1,154,216 |
| 2022 | 2,055,781 | 13,663,751 | 2,666,778 | 897,921 | 2,928,902 | 22,213,133 | 154,374 | 523,876 | 432,558 | 1,154,863 |
| 2023 | 2,076,339 | 13,800,388 | 2,693,446 | 906,901 | 2,958,191 | 22,435,265 | 155,918 | 529,115 | 436,883 | 1,166,412 |
| 2024 | 2,097,102 | 13,938,392 | 2,720,380 | 915,970 | 2,987,773 | 22,659,617 | 157,477 | 534,406 | 441,252 | 1,178,076 |
| 2025 | 2,118,073 | 14,077,776 | 2,747,584 | 925,129 | 3,017,651 | 22,886,213 | 159,052 | 539,750 | 445,665 | 1,189,857 |
| 2026 | 2,139,254 | 14,218,554 | 2,775,060 | 934,381 | 3,047,827 | 23,115,076 | 160,643 | 545,147 | 450,121 | 1,201,755 |
| 2027 | 2,160,647 | 14,360,739 | 2,802,810 | 943,724 | 3,078,305 | 23,346,225 | 162,249 | 523,876 | 432,558 | 1,213,773 |
| 2028 | 2,182,253 | 14,504,347 | 2,830,838 | 953,162 | 3,109,089 | 23,579,689 | 163,872 | 556,105 | 459,169 | 1,225,911 |
| 2029 | 2,204,076 | 14,649,390 | 2,859,147 | 962,693 | 3,140,179 | 23,815,485 | 165,510 | 561,666 | 463,760 | 1,238,170 |
| 2030 | 2,226,117 | 14,795,884 | 2,887,738 | 972,320 | 3,171,581 | 24,053,640 | 167,165 | 567,283 | 468,398 | 1,250,551 |
| 2031 | 2,248,378 | 14,943,843 | 2,916,616 | 982,043 | 3,203,297 | 24,294,177 | 168,837 | 572,955 | 473,082 | 1,263,057 |
| 2032 | 2,270,861 | 15,093,281 | 2,945,782 | 991,864 | 3,235,330 | 24,537,118 | 170,525 | 578,685 | 477,813 | 1,275,688 |
| 2033 | 2,293,570 | 15,244,214 | 2,975,240 | 1,001,782 | 3,267,683 | 24,782,489 | 172,231 | 584,472 | 482,591 | 1,288,444 |
| 2034 | 2,316,506 | 15,396,656 | 3,004,992 | 1,011,800 | 3,300,360 | 25,030,314 | 173,953 | 590,316 | 487,417 | 1,301,329 |
| 2035 | 2,339,671 | 15,550,623 | 3,035,042 | 1,021,918 | 3,333,364 | 25,280,618 | 175,693 | 596,220 | 492,291 | 1,314,342 |
| TOTAL | 64,118,528 | 489,106,270 | 95,501,449 | 35,502,670 | 100,030,572 | 784,259,489 | 6,539,084 | 31,613,298 | 26,804,024 | 53,758,438 |

TABLE B-11 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of Transportation Charge (in dollars)

Sheet 4 of 9

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|--|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|--------------------|--------------------|----------------------|
| | SOUTH SAN JOAQUIN DIVISION (continued) | | | | | | | | | |
| | Reach 11B | Reach 12D | Reach 12E | Reach 13B | Reach 14A | Reach 14B | Reach 14C | Reach 15A | Reach 16A | Subtotal |
| [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 59,077 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 385,659 |
| 1970 | 85,758 | 94,171 | 123,374 | 152,424 | 0 | 0 | 0 | 0 | 0 | 885,234 |
| 1971 | 80,282 | 95,075 | 91,389 | 167,142 | 691,791 | 151,979 | 111,623 | 529,723 | 10,291 | 2,400,543 |
| 1972 | 84,287 | 98,647 | 115,592 | 146,096 | 877,535 | 124,831 | 101,479 | 609,058 | 1,106,884 | 3,734,703 |
| 1973 | 92,257 | 74,238 | 114,843 | 221,385 | 961,855 | 120,106 | 99,429 | 692,748 | 1,243,941 | 4,142,935 |
| 1974 | 98,103 | 74,914 | 193,523 | 141,540 | 898,272 | 143,866 | 115,649 | 853,098 | 1,343,972 | 4,369,772 |
| 1975 | 124,105 | 61,799 | 117,194 | 108,154 | 1,156,757 | 180,614 | 119,889 | 988,045 | 1,537,862 | 5,090,233 |
| 1976 | 69,715 | 33,655 | 147,908 | 134,063 | 1,124,051 | 177,086 | 114,133 | 1,037,799 | 1,727,428 | 5,001,677 |
| 1977 | 108,644 | 91,547 | 175,039 | 137,975 | 1,397,006 | 203,837 | 119,467 | 1,339,196 | 1,961,081 | 6,065,390 |
| 1978 | 106,702 | 72,585 | 170,578 | 151,120 | 1,254,043 | 139,662 | 132,224 | 1,265,813 | 1,922,950 | 5,738,596 |
| 1979 | 85,942 | 56,331 | 174,147 | 150,029 | 1,490,461 | 201,935 | 260,981 | 1,216,126 | 1,798,566 | 5,960,033 |
| 1980 | 120,896 | 123,120 | 167,249 | 164,749 | 1,988,619 | 189,132 | 238,607 | 1,437,614 | 2,231,456 | 7,463,378 |
| 1981 | 76,965 | 33,322 | 113,202 | 171,669 | 1,741,488 | 163,934 | 161,182 | 1,799,832 | 2,762,773 | 7,646,858 |
| 1982 | 158,178 | 142,631 | 224,170 | 224,051 | 1,793,867 | 195,086 | 15,768 | 1,933,859 | 2,961,383 | 8,475,944 |
| 1983 | 136,350 | 124,724 | 203,733 | 217,324 | 2,421,794 | 199,708 | 181,879 | 2,550,842 | 4,302,165 | 11,303,322 |
| 1984 | 163,331 | 108,212 | 188,724 | 245,764 | 3,312,127 | 329,490 | 204,332 | 3,215,901 | 5,077,824 | 14,043,628 |
| 1985 | 198,368 | 154,995 | 194,327 | 360,308 | 3,463,178 | 237,127 | 180,068 | 3,427,049 | 5,683,454 | 14,964,899 |
| 1986 | 248,170 | 242,660 | 346,410 | 349,369 | 3,781,427 | 320,984 | 360,156 | 3,574,451 | 5,780,666 | 16,593,102 |
| 1987 | 334,059 | 325,697 | 469,378 | 322,824 | 3,731,912 | 463,757 | 238,813 | 4,080,465 | 5,636,043 | 17,063,245 |
| 1988 | 290,881 | 220,658 | 374,653 | 318,253 | 3,451,893 | 411,110 | 313,806 | 3,746,920 | 5,150,238 | 15,704,693 |
| 1989 | 268,025 | 207,487 | 595,433 | 380,883 | 3,512,884 | 333,996 | 220,978 | 3,751,081 | 5,458,633 | 16,336,263 |
| 1990 | 363,652 | 225,171 | 480,738 | 677,729 | 4,021,727 | 439,953 | 212,851 | 4,381,643 | 6,440,643 | 18,059,051 |
| 1991 | 328,683 | 269,873 | 371,312 | 433,313 | 4,309,082 | 424,704 | 273,169 | 4,566,702 | 5,805,189 | 18,565,503 |
| 1992 | 334,579 | 270,768 | 409,314 | 423,717 | 4,734,368 | 729,211 | 571,412 | 4,270,793 | 6,471,964 | 19,838,439 |
| 1993 | 413,722 | 278,375 | 496,851 | 594,201 | 5,182,830 | 664,063 | 423,780 | 5,266,124 | 7,583,165 | 23,092,943 |
| 1994 | 346,600 | 239,873 | 482,301 | 445,909 | 4,012,614 | 414,899 | 254,393 | 3,727,019 | 7,142,378 | 19,069,838 |
| 1995 | 405,045 | 242,253 | 622,654 | 507,102 | 4,607,154 | 309,283 | 315,905 | 3,973,757 | 6,540,575 | 19,680,665 |
| 1996 | 367,570 | 238,622 | 519,560 | 604,736 | 4,892,967 | 214,773 | 187,784 | 4,331,630 | 7,065,052 | 20,408,184 |
| 1997 | 309,696 | 254,080 | 516,115 | 429,771 | 5,094,202 | 261,221 | 275,610 | 4,011,366 | 7,387,904 | 21,710,020 |
| 1998 | 295,927 | 170,556 | 384,226 | 484,072 | 4,752,549 | 309,440 | 248,178 | 4,694,822 | 7,530,927 | 20,885,007 |
| 1999 | 395,036 | 195,417 | 423,158 | 542,097 | 5,103,420 | 342,515 | 221,942 | 4,894,215 | 8,835,442 | 23,089,410 |
| 2000 | 405,494 | 328,900 | 649,652 | 564,437 | 5,942,037 | 341,230 | 140,009 | 5,370,216 | 12,465,033 | 28,209,574 |
| 2001 | 415,298 | 895,341 | 520,889 | 660,008 | 4,700,135 | (133,493) | (94,172) | 6,003,710 | 15,778,861 | 30,831,154 |
| 2002 | 380,410 | 296,713 | 958,335 | 860,292 | 5,941,389 | 31,558 | 251,205 | 5,589,127 | 11,451,902 | 28,269,598 |
| 2003 | 339,986 | 236,306 | 691,422 | 613,937 | 6,164,628 | (137,397) | 18,246 | 6,989,179 | 11,502,301 | 28,622,818 |
| 2004 | 245,238 | 176,391 | 624,811 | 585,891 | 7,238,227 | (139,901) | (165,858) | 8,913,604 | 14,633,859 | 33,561,046 |
| 2005 | 211,328 | 118,730 | 849,764 | 466,735 | 6,234,813 | (183,109) | (192,435) | 5,882,666 | 13,847,844 | 28,863,166 |
| 2006 | 191,460 | 54,885 | 764,909 | 503,721 | 5,102,072 | (177,940) | (179,942) | 8,387,277 | 13,755,191 | 30,258,654 |
| 2007 | 258,903 | 292,925 | 552,445 | 551,971 | 6,689,930 | (433,298) | (342,041) | 10,911,388 | 8,495,178 | 29,247,374 |
| 2008 | 429,071 | 237,400 | 425,332 | 725,567 | 11,124,364 | (261,090) | (202,968) | 13,033,051 | 10,926,499 | 38,578,612 |
| 2009 | 413,847 | 211,920 | 623,150 | 551,780 | 7,839,193 | 591,979 | (46,289) | 8,760,103 | 13,346,278 | 34,509,762 |
| 2010 | 446,496 | 116,204 | 423,672 | 703,628 | 7,870,531 | (150,518) | (50,265) | 6,648,709 | 9,689,382 | 27,783,499 |
| 2011 | 622,763 | 312,681 | 874,050 | 1,583,607 | 8,800,970 | (231,289) | (41,944) | 6,234,277 | 15,904,917 | 36,631,662 |
| 2012 | 794,392 | 280,503 | 1,049,480 | 3,227,824 | 11,224,854 | 396,916 | 452,512 | 8,830,866 | 12,819,119 | 41,397,643 |
| 2013 | 484,741 | 455,277 | 902,201 | 828,734 | 11,799,995 | 278,052 | 165,955 | 9,567,487 | 14,515,507 | 41,280,961 |
| 2014 | 113,863 | 75,595 | 559,931 | 333,974 | 15,049,226 | 208,297 | 329,421 | 10,345,779 | 15,936,015 | 46,300,238 |
| 2015 | 674,495 | 276,469 | 627,393 | 836,450 | 11,151,427 | 151,462 | 241,568 | 11,877,826 | 16,338,779 | 44,390,937 |
| 2016 | 643,236 | 63,961 | 1,306,888 | 836,604 | 10,114,584 | (34,148) | (331,266) | 12,358,784 | 18,943,300 | 45,571,135 |
| 2017 | 606,327 | 60,818 | 940,087 | 598,361 | 7,963,055 | (117,173) | 640,101 | 10,849,261 | 16,033,370 | 39,591,656 |
| 2018 | 396,251 | 330,771 | 1,592,373 | 1,092,907 | 13,687,126 | 27,807 | 247,342 | 10,025,896 | 17,274,396 | 46,142,877 |
| 2019 | 697,697 | 190,468 | 1,670,603 | 1,069,557 | 13,710,294 | 385,514 | 571,827 | 14,268,262 | 20,286,077 | 55,102,847 |
| 2020 | 683,022 | 191,752 | 1,628,958 | 1,060,495 | 13,900,638 | 381,837 | 561,051 | 13,122,786 | 18,260,243 | 52,004,364 |
| 2021 | 697,771 | 193,075 | 1,672,116 | 1,078,397 | 14,107,637 | 388,932 | 574,070 | 14,895,792 | 19,954,683 | 55,826,058 |
| 2022 | 699,758 | 193,683 | 1,673,797 | 1,080,178 | 14,045,252 | 389,282 | 574,673 | 14,236,569 | 19,695,337 | 54,854,200 |
| 2023 | 706,756 | 195,619 | 1,690,535 | 1,090,980 | 14,185,704 | 393,175 | 580,420 | 14,378,935 | 19,892,291 | 55,402,743 |
| 2024 | 713,823 | 197,576 | 1,707,441 | 1,101,889 | 14,327,561 | 397,107 | 586,224 | 14,522,724 | 20,091,214 | 55,956,770 |
| 2025 | 720,962 | 199,551 | 1,724,515 | 1,112,908 | 14,470,837 | 401,078 | 592,086 | 14,667,951 | 20,292,126 | 56,516,338 |
| 2026 | 728,171 | 201,547 | 1,741,760 | 1,124,037 | 14,615,545 | 405,089 | 598,007 | 14,814,631 | 20,495,047 | 57,081,500 |
| 2027 | 735,453 | 203,562 | 1,759,178 | 1,135,278 | 14,761,701 | 409,140 | 603,987 | 14,962,777 | 20,699,997 | 57,652,317 |
| 2028 | 742,808 | 205,598 | 1,776,770 | 1,146,631 | 14,909,318 | 413,231 | 610,027 | 15,112,405 | 20,906,997 | 58,228,842 |
| 2029 | 750,236 | 207,654 | 1,794,537 | 1,158,097 | 15,058,411 | 417,363 | 616,127 | 15,263,529 | 21,116,067 | 58,811,127 |
| 2030 | 757,738 | 209,731 | 1,812,483 | 1,169,678 | 15,208,995 | 421,537 | 622,288 | 15,416,164 | 21,327,228 | 59,399,239 |
| 2031 | 765,315 | 211,828 | 1,830,607 | 1,181,375 | 15,361,085 | 425,752 | 628,511 | 15,570,326 | 21,540,500 | 59,993,230 |
| 2032 | 772,969 | 213,946 | 1,848,913 | 1,193,188 | 15,514,696 | 430,010 | 634,796 | 15,726,029 | 21,755,905 | 60,593,163 |
| 2033 | 780,698 | 216,086 | 1,867,403 | 1,205,120 | 15,669,843 | 434,310 | 641,144 | 15,883,290 | 21,973,464 | 61,199,096 |
| 2034 | 788,505 | 218,246 | 1,886,077 | 1,217,171 | 15,826,541 | 438,653 | 647,556 | 16,042,122 | 22,193,199 | 61,811,085 |
| 2035 | 796,390 | 220,429 | 1,904,937 | 1,229,343 | 15,984,807 | 443,040 | 654,031 | 16,202,544 | 22,415,131 | 62,429,198 |
| TOTAL | 27,162,277 | 13,113,599 | 53,934,507 | 44,888,520 | 502,059,293 | 15,401,298 | 17,411,490 | 503,833,733 | 745,054,089 | 2,041,573,651 |

TABLE B-11 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of Transportation Charge (in dollars)

Sheet 5 of 9

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|---------------------------------|-------------------|----------------------|--------------------|--------------------|-------------------|-------------------|-------------------|-------------------|------|
| | TEHACHAPI DIVISION | | | MOJAVE DIVISION | | | | | | |
| | Reach 17E | Reach 17F | Subtotal | Reach 18A | Reach 19 | Reach 20A | Reach 20B | Reach 21 | Reach 22A | [48] |
| 1961 | [40] 0 | [41] 0 | [42] 0 | [43] 0 | [44] 0 | [45] 0 | [46] 0 | [47] 0 | [48] 0 | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 3,471 | 0 | 3,471 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 1,424,782 | 28,127 | 1,452,909 | 36,699 | 135,675 | 130,711 | 120,271 | 75,768 | 80,436 | |
| 1973 | 1,777,260 | 49,949 | 1,827,209 | 36,207 | 146,739 | 161,838 | 148,631 | 60,641 | 66,539 | |
| 1974 | 2,298,091 | 16,259 | 2,314,350 | 30,525 | 90,404 | 115,571 | 88,200 | 65,007 | 77,667 | |
| 1975 | 2,403,430 | 35,193 | 2,438,623 | 40,588 | 122,584 | 137,684 | 118,898 | 135,462 | 77,825 | |
| 1976 | 2,776,194 | 126,653 | 2,902,847 | 118,610 | 201,215 | 182,927 | 151,555 | 106,314 | 131,007 | |
| 1977 | 3,845,464 | 83,936 | 3,929,400 | 93,565 | 226,906 | 180,884 | 112,589 | 98,757 | 86,279 | |
| 1978 | 2,954,313 | 42,637 | 2,996,950 | 91,815 | 200,759 | 215,673 | 120,584 | 109,271 | 71,763 | |
| 1979 | 3,539,402 | 45,997 | 3,585,399 | 99,670 | 307,386 | 261,205 | 194,104 | 203,078 | 121,586 | |
| 1980 | 4,749,245 | 54,806 | 4,804,051 | 116,487 | 446,175 | 290,719 | 237,250 | 156,794 | 117,274 | |
| 1981 | 5,485,957 | 64,886 | 5,550,843 | 316,590 | 585,003 | 325,112 | 292,081 | 181,062 | 119,602 | |
| 1982 | 6,349,080 | 55,997 | 6,405,077 | 447,739 | 638,615 | 275,763 | 330,502 | 186,109 | 125,429 | |
| 1983 | 14,153,033 | 96,397 | 14,249,430 | 345,229 | 564,698 | 368,139 | 326,767 | 219,943 | 140,523 | |
| 1984 | 18,448,383 | 77,201 | 18,525,584 | 267,497 | 563,588 | 413,443 | 329,933 | 266,919 | 146,866 | |
| 1985 | 18,134,698 | 137,928 | 18,272,626 | 298,932 | 475,028 | 450,444 | 388,327 | 799,514 | 125,780 | |
| 1986 | 19,297,129 | 109,938 | 19,407,067 | 703,413 | 350,906 | 347,690 | 315,566 | 242,158 | 178,847 | |
| 1987 | 17,398,908 | 98,355 | 17,497,263 | 1,261,056 | 558,996 | 818,475 | 357,971 | 298,190 | 236,263 | |
| 1988 | 17,697,838 | 138,405 | 17,836,243 | 1,242,139 | 560,911 | 585,014 | 400,005 | 331,099 | 149,876 | |
| 1989 | 17,641,151 | 88,488 | 17,729,639 | 1,049,615 | 283,065 | 366,590 | 345,614 | 194,047 | 138,825 | |
| 1990 | 19,995,760 | 99,868 | 20,095,628 | 1,298,537 | 229,083 | 469,502 | 202,412 | 273,748 | 49,174 | |
| 1991 | 19,903,346 | 131,558 | 20,034,904 | 1,432,360 | 665,443 | 1,025,089 | 516,257 | 478,555 | 231,223 | |
| 1992 | 18,194,788 | 279,610 | 18,474,398 | 1,167,898 | 738,238 | 666,181 | 696,623 | 585,072 | 168,251 | |
| 1993 | 19,051,939 | 199,640 | 19,251,579 | 1,868,745 | 606,763 | 1,232,409 | 818,675 | 509,309 | 207,818 | |
| 1994 | 17,354,702 | 204,963 | 17,559,665 | 1,699,479 | 763,493 | 1,145,700 | 957,350 | 873,215 | 241,679 | |
| 1995 | 19,360,033 | 191,516 | 19,551,549 | 1,284,146 | 614,314 | 1,941,939 | 2,411,412 | 355,198 | 179,930 | |
| 1996 | 19,041,451 | 237,846 | 19,279,297 | 1,163,708 | 576,674 | 1,335,804 | 1,713,145 | 790,618 | 136,397 | |
| 1997 | 19,724,881 | 176,120 | 19,901,001 | 1,330,450 | 730,628 | 1,401,562 | 2,043,179 | 640,177 | 189,241 | |
| 1998 | 23,227,152 | 182,754 | 23,409,906 | 1,513,656 | 309,052 | 7,568,901 | 508,030 | 297,621 | 115,100 | |
| 1999 | 19,935,886 | 160,568 | 20,096,454 | 3,153,935 | 732,113 | 5,398,788 | 1,667,027 | 1,395,062 | 188,629 | |
| 2000 | 23,227,369 | 244,410 | 23,471,779 | 1,870,490 | 737,293 | 1,378,795 | 1,434,507 | 972,081 | 165,502 | |
| 2001 | 24,052,191 | 617,689 | 24,669,880 | 2,438,339 | 2,543,535 | 1,838,032 | 1,521,485 | 1,068,195 | 474,308 | |
| 2002 | 20,727,872 | 472,353 | 21,200,225 | 1,398,669 | 800,734 | 757,147 | 584,168 | 1,156,409 | 282,326 | |
| 2003 | 20,832,780 | 283,154 | 21,115,934 | 3,732,959 | 677,475 | 710,041 | 624,601 | 469,225 | 279,922 | |
| 2004 | 26,586,558 | 245,847 | 26,832,405 | 1,821,744 | 1,375,487 | 1,322,272 | 1,044,918 | 1,054,543 | 413,437 | |
| 2005 | 16,373,205 | 1,498,514 | 17,871,718 | 2,840,486 | 1,501,877 | 1,540,619 | 879,549 | 677,058 | 353,179 | |
| 2006 | 14,723,341 | 272,732 | 14,996,074 | 4,459,028 | 1,308,586 | 1,198,000 | 2,917,951 | 961,222 | 756,694 | |
| 2007 | 15,893,697 | 346,113 | 16,239,810 | 5,903,853 | 1,629,475 | 1,796,273 | 1,821,912 | 829,687 | 654,611 | |
| 2008 | 23,017,672 | 320,096 | 23,337,768 | 2,270,436 | 1,372,458 | 1,261,251 | 828,752 | 499,829 | 709,393 | |
| 2009 | 22,756,256 | 156,834 | 22,913,090 | 2,555,842 | 1,546,612 | 1,347,318 | 1,172,674 | 781,055 | 540,795 | |
| 2010 | 14,662,660 | 262,469 | 14,925,128 | 3,375,014 | 1,603,144 | 2,605,491 | 1,725,355 | 785,070 | 694,879 | |
| 2011 | 18,662,153 | 139,112 | 18,801,264 | 2,545,981 | 1,772,468 | 2,315,210 | 2,216,453 | 624,379 | 579,320 | |
| 2012 | 21,030,692 | 218,986 | 21,249,678 | 5,061,097 | 1,460,542 | 1,600,535 | 2,700,468 | 1,804,569 | 651,753 | |
| 2013 | 33,829,306 | 263,479 | 34,092,785 | 5,818,176 | 1,663,884 | 1,292,689 | 3,047,230 | 1,399,916 | 530,606 | |
| 2014 | 38,067,676 | 221,989 | 38,289,665 | 3,929,003 | 2,614,314 | 1,357,181 | 2,957,877 | 621,646 | 753,959 | |
| 2015 | 27,072,628 | 146,184 | 27,218,811 | 4,657,646 | 2,071,042 | 2,845,103 | 863,394 | 2,589,212 | 1,108,348 | |
| 2016 | 27,131,213 | 127,534 | 27,258,747 | 4,300,371 | 2,292,988 | 1,410,412 | 1,233,332 | 878,805 | 274,658 | |
| 2017 | 26,803,979 | 157,664 | 26,961,643 | 4,207,836 | 2,635,239 | 1,574,833 | 1,262,851 | 713,891 | 385,601 | |
| 2018 | 23,796,812 | 281,014 | 24,077,826 | 5,192,822 | 2,675,177 | 2,419,609 | 1,534,875 | 930,526 | 539,364 | |
| 2019 | 29,928,074 | 240,312 | 30,168,386 | 5,752,107 | 3,332,366 | 2,213,872 | 1,676,515 | 1,072,135 | 529,543 | |
| 2020 | 29,023,576 | 241,908 | 29,265,484 | 5,782,840 | 3,385,444 | 2,248,875 | 1,708,694 | 1,090,846 | 542,961 | |
| 2021 | 29,150,130 | 223,638 | 29,373,768 | 5,806,667 | 3,395,938 | 2,253,981 | 1,708,858 | 1,091,019 | 543,318 | |
| 2022 | 29,660,933 | 237,639 | 29,898,572 | 5,838,343 | 3,404,961 | 2,261,298 | 1,715,002 | 1,095,514 | 543,993 | |
| 2023 | 29,957,542 | 240,015 | 30,197,557 | 5,896,727 | 3,439,011 | 2,283,911 | 1,732,152 | 1,106,469 | 549,433 | |
| 2024 | 30,257,117 | 242,415 | 30,499,532 | 5,955,694 | 3,473,401 | 2,306,750 | 1,749,474 | 1,117,533 | 554,927 | |
| 2025 | 30,559,689 | 244,840 | 30,804,529 | 6,015,251 | 3,508,135 | 2,329,818 | 1,766,969 | 1,128,709 | 560,477 | |
| 2026 | 30,865,285 | 247,288 | 31,112,573 | 6,075,404 | 3,543,217 | 2,353,116 | 1,784,638 | 1,139,996 | 566,081 | |
| 2027 | 31,173,938 | 249,761 | 31,423,699 | 6,136,158 | 3,578,649 | 2,376,647 | 1,802,485 | 1,151,396 | 571,742 | |
| 2028 | 31,485,678 | 252,258 | 31,737,936 | 6,197,519 | 3,614,435 | 2,400,413 | 1,820,509 | 1,162,910 | 577,460 | |
| 2029 | 31,800,534 | 254,781 | 32,055,315 | 6,259,494 | 3,650,580 | 2,424,418 | 1,838,715 | 1,174,539 | 583,234 | |
| 2030 | 32,118,540 | 257,329 | 32,375,869 | 6,322,089 | 3,687,085 | 2,448,662 | 1,857,102 | 1,186,284 | 589,067 | |
| 2031 | 32,439,725 | 259,902 | 32,699,627 | 6,385,310 | 3,723,956 | 2,473,148 | 1,875,673 | 1,198,147 | 594,957 | |
| 2032 | 32,764,122 | 262,501 | 33,026,623 | 6,449,163 | 3,761,196 | 2,497,880 | 1,894,429 | 1,210,129 | 600,907 | |
| 2033 | 33,091,764 | 265,126 | 33,356,890 | 6,513,655 | 3,798,808 | 2,522,859 | 1,913,374 | 1,222,230 | 606,916 | |
| 2034 | 33,422,681 | 267,777 | 33,690,458 | 6,578,791 | 3,836,796 | 2,548,087 | 1,932,507 | 1,234,452 | 612,985 | |
| 2035 | 33,756,908 | 270,455 | 34,027,363 | 6,644,579 | 3,875,164 | 2,573,568 | 1,951,833 | 1,246,797 | 619,115 | |
| TOTAL | 1,326,872,064 | 13,749,709 | 1,340,621,773 | 195,498,873 | 105,715,929 | 98,901,872 | 77,014,239 | 48,375,131 | 23,795,598 | |

TABLE B-11 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of Transportation Charge (in dollars)

Sheet 6 of 9

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | |
|---------------|---------------------------------|------------------|------------------|-------------------|--------------------|-------------------|------------------|----------------|------------------|-------------------|---|
| | MOJAVE DIVISION (continued) | | | | SANTA ANA DIVISION | | | | | | |
| | Reach 22B | Reach 23 | Reach 24 | Subtotal | Reach 25 | Reach 26A | Reach 28G | Reach 28H | Reach 28J | Subtotal | |
| [49] | [50] | [51] | [52] | [53] | [54] | [55] | [56] | [57] | [58] | | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 1,036,831 | 51,520 | 362,153 | 2,030,064 | 26 | 578 | 109 | 30 | 0 | 743 | |
| 1973 | 1,283,816 | 65,475 | 353,262 | 2,323,148 | 20,541 | 679,328 | 136,352 | 79 | 0 | 836,300 | |
| 1974 | 1,477,946 | 96,340 | 334,302 | 2,375,962 | 24,380 | 799,400 | 155,262 | 34,693 | 854,637 | 1,868,372 | |
| 1975 | 1,630,554 | 111,141 | 419,450 | 2,794,186 | 29,337 | 885,021 | 110,729 | 69,082 | 723,814 | 1,817,983 | |
| 1976 | 1,598,071 | 107,787 | 304,638 | 2,902,124 | 51,356 | 1,103,139 | 138,575 | 100,400 | 635,853 | 2,029,323 | |
| 1977 | 1,882,080 | 71,228 | 48,359 | 2,800,647 | 62,584 | 1,412,740 | 127,543 | 92,647 | 825,880 | 2,521,394 | |
| 1978 | 2,211,965 | 72,179 | 637,401 | 3,731,410 | 67,186 | 1,159,950 | 166,919 | 68,363 | 835,082 | 2,297,500 | |
| 1979 | 2,104,832 | 76,960 | 202,566 | 3,571,387 | 84,462 | 1,235,189 | 142,586 | 92,812 | 265,525 | 1,820,574 | |
| 1980 | 2,670,387 | 147,009 | 688,605 | 4,870,700 | 72,651 | 1,532,535 | 158,340 | 129,897 | 1,120,131 | 3,013,554 | |
| 1981 | 3,030,407 | 134,895 | 47,750 | 5,032,502 | 35,662 | 1,575,444 | 160,053 | 111,722 | 333,550 | 2,216,431 | |
| 1982 | 3,248,883 | 299,712 | 623,755 | 6,176,507 | 26,852 | 1,822,250 | 205,350 | 135,463 | 1,518,759 | 3,708,674 | |
| 1983 | 3,899,769 | 223,626 | 384,292 | 6,472,986 | 19,017 | 1,663,599 | 244,720 | 124,651 | 412,806 | 2,464,793 | |
| 1984 | 4,783,997 | 59,337 | 1,104,149 | 7,935,729 | 11,319 | 2,325,661 | 240,496 | 190,924 | 769,068 | 3,537,468 | |
| 1985 | 5,330,501 | 261,135 | 811,346 | 8,941,007 | 17,764 | 2,707,662 | 451,600 | 182,242 | 871,492 | 4,230,760 | |
| 1986 | 6,190,812 | 156,053 | 515,945 | 9,001,390 | 31,012 | 2,768,728 | 439,048 | 256,526 | 982,332 | 4,477,646 | |
| 1987 | 5,731,239 | 151,796 | 732,607 | 10,146,593 | 19,362 | 2,847,390 | 278,094 | 218,717 | 1,118,529 | 4,482,092 | |
| 1988 | 6,910,472 | 253,833 | 970,052 | 11,403,401 | 36,576 | 3,087,873 | 271,868 | 200,811 | 1,176,659 | 4,773,787 | |
| 1989 | 5,963,386 | 349,544 | 1,242,144 | 9,932,830 | 30,881 | 3,190,809 | 230,953 | 281,861 | 1,130,035 | 4,864,539 | |
| 1990 | 6,905,442 | 436,785 | 1,891,053 | 11,755,736 | 25,518 | 3,330,913 | 437,812 | 308,144 | 1,538,449 | 5,640,836 | |
| 1991 | 7,488,366 | 263,723 | 1,561,051 | 13,662,067 | 32,172 | 3,847,589 | 843,388 | 632,912 | 1,630,321 | 6,986,382 | |
| 1992 | 7,076,997 | 317,042 | 622,116 | 12,038,418 | 55,819 | 4,043,878 | 281,864 | 5,636,464 | 1,102,519 | 11,120,544 | |
| 1993 | 7,765,751 | 359,632 | 1,708,915 | 15,078,017 | 72,464 | 5,638,325 | 382,195 | 570,563 | 994,721 | 7,658,268 | |
| 1994 | 7,691,548 | 1,220,795 | 1,245,936 | 15,839,195 | 105,373 | 5,139,991 | 617,136 | 415,603 | 1,022,412 | 7,300,515 | |
| 1995 | 6,994,639 | 842,041 | 746,371 | 15,369,990 | 96,781 | 4,357,648 | 1,308,828 | 704,154 | 894,338 | 7,361,749 | |
| 1996 | 8,590,347 | 889,842 | (78,782) | 15,117,753 | 156,395 | 4,051,744 | 1,001,063 | 1,041,697 | 1,316,493 | 7,567,392 | |
| 1997 | 8,138,580 | 1,586,227 | 3,355,446 | 19,415,490 | 177,217 | 4,585,198 | 493,841 | 949,188 | 953,590 | 7,159,034 | |
| 1998 | 8,887,728 | 1,924,868 | 1,134,837 | 22,259,793 | 142,703 | 4,856,225 | 379,997 | 991,426 | (67,444) | 6,302,907 | |
| 1999 | 9,516,356 | 2,034,226 | 1,222,891 | 25,309,026 | 190,302 | 6,039,135 | 503,433 | 1,970,921 | 1,084,943 | 9,788,735 | |
| 2000 | 9,524,751 | 1,711,065 | 1,514,074 | 19,308,557 | 353,556 | 4,194,994 | 842,570 | 1,003,213 | 1,124,399 | 7,518,730 | |
| 2001 | 7,695,659 | 1,891,901 | 31,234 | 19,502,687 | 296,461 | 2,442,119 | 1,667,660 | 810,577 | 5,658,124 | 10,874,941 | |
| 2002 | 11,246,902 | 1,693,570 | 934,872 | 18,854,797 | 509,111 | 3,398,320 | 1,250,266 | 422,611 | 2,236,036 | 7,816,343 | |
| 2003 | 13,350,815 | 2,095,918 | (452,530) | 21,488,425 | 368,521 | 3,729,470 | 545,107 | 375,520 | 1,281,528 | 6,300,147 | |
| 2004 | 10,500,182 | 2,128,188 | 1,087,045 | 20,747,817 | 427,774 | 5,435,324 | 1,238,040 | 439,722 | 3,578,697 | 11,119,557 | |
| 2005 | 7,608,361 | 2,414,926 | 2,241,009 | 20,057,064 | 452,675 | 5,608,440 | 1,518,256 | 683,607 | (1,905,129) | 6,357,849 | |
| 2006 | 10,122,699 | 1,924,426 | 578,257 | 24,226,863 | 301,178 | 5,208,306 | 638,263 | 320,547 | 5,196,897 | 11,665,191 | |
| 2007 | 10,028,925 | 2,957,603 | 652,391 | 26,274,729 | 227,833 | 8,082,763 | 823,731 | 705,613 | 3,275,249 | 13,115,188 | |
| 2008 | 14,697,811 | 2,416,322 | 1,011,044 | 25,067,296 | 307,554 | 6,673,321 | 809,314 | 780,677 | 4,564,909 | 13,135,776 | |
| 2009 | 12,251,109 | 3,494,124 | 1,519,921 | 25,209,449 | 509,167 | 7,248,805 | 629,994 | 681,317 | 2,770,007 | 11,839,289 | |
| 2010 | 12,897,819 | 3,226,278 | 2,497,242 | 29,410,292 | 605,860 | 6,524,016 | 472,877 | 422,032 | 3,548,778 | 11,573,563 | |
| 2011 | 13,500,979 | 4,104,748 | 3,060,699 | 30,720,238 | 432,297 | 5,573,238 | 884,689 | 565,634 | 4,855,209 | 12,311,067 | |
| 2012 | 13,587,909 | 2,845,790 | 4,690,868 | 34,403,532 | 244,671 | 6,417,638 | 1,708,415 | 546,612 | 3,964,740 | 12,882,077 | |
| 2013 | 14,561,505 | 3,501,521 | 3,614,994 | 35,430,521 | 439,182 | 7,911,803 | 857,872 | 733,760 | 2,337,750 | 12,280,368 | |
| 2014 | 17,922,146 | 4,318,586 | 2,887,644 | 37,362,358 | 316,530 | 9,066,303 | 1,171,054 | 330,766 | 9,718,268 | 20,602,921 | |
| 2015 | 19,353,717 | 4,540,541 | 2,759,753 | 40,788,754 | 178,344 | 11,930,915 | 823,711 | 497,046 | 2,349,209 | 15,779,225 | |
| 2016 | 21,232,168 | 5,164,807 | 4,321,284 | 41,108,824 | 499,735 | 10,937,652 | 598,717 | 644,907 | 2,732,160 | 15,413,170 | |
| 2017 | 17,476,506 | 5,243,616 | 4,836,514 | 38,336,887 | 561,204 | 9,356,022 | 1,438,996 | 648,722 | (4,352,834) | 7,652,110 | |
| 2018 | 13,439,826 | 6,264,075 | 5,666,642 | 38,662,916 | 305,419 | 12,218,133 | 1,084,703 | 925,727 | 8,834,464 | 23,368,445 | |
| 2019 | 20,569,502 | 7,213,431 | 5,184,102 | 47,543,573 | 550,487 | 14,984,510 | 1,466,588 | 858,377 | 6,557,715 | 24,417,677 | |
| 2020 | 20,734,277 | 7,244,168 | 3,057,353 | 45,795,458 | 552,439 | 14,801,611 | 1,501,769 | 853,632 | 5,288,910 | 22,998,361 | |
| 2021 | 21,595,572 | 7,284,921 | 3,711,240 | 47,391,514 | 894,114 | 14,661,827 | 1,580,836 | 851,142 | 5,485,676 | 23,473,595 | |
| 2022 | 21,176,115 | 7,319,982 | 4,024,074 | 47,379,282 | 672,337 | 14,964,143 | 1,531,562 | 862,928 | 5,835,208 | 23,866,178 | |
| 2023 | 21,387,876 | 7,393,182 | 4,064,315 | 47,853,076 | 679,060 | 15,113,784 | 1,546,878 | 871,557 | 5,893,560 | 24,104,839 | |
| 2024 | 21,601,754 | 7,467,114 | 4,104,958 | 48,331,605 | 685,851 | 15,264,922 | 1,562,346 | 880,273 | 5,952,496 | 24,345,888 | |
| 2025 | 21,817,772 | 7,541,785 | 4,146,008 | 48,814,924 | 692,709 | 15,417,571 | 1,577,970 | 889,075 | 6,012,021 | 24,589,346 | |
| 2026 | 22,035,950 | 7,617,203 | 4,187,468 | 49,303,073 | 699,636 | 15,571,747 | 1,593,750 | 897,966 | 6,072,141 | 24,835,240 | |
| 2027 | 22,256,309 | 7,693,375 | 4,229,343 | 49,796,104 | 706,633 | 15,727,465 | 1,609,687 | 906,946 | 6,132,863 | 25,083,594 | |
| 2028 | 22,478,872 | 7,770,308 | 4,271,636 | 50,294,062 | 713,699 | 15,884,739 | 1,625,784 | 916,015 | 6,194,191 | 25,334,428 | |
| 2029 | 22,703,661 | 7,848,012 | 4,314,352 | 50,797,005 | 720,836 | 16,043,587 | 1,642,042 | 925,175 | 6,256,133 | 25,587,773 | |
| 2030 | 22,930,698 | 7,926,492 | 4,357,496 | 51,304,975 | 728,044 | 16,204,022 | 1,658,462 | 934,427 | 6,318,694 | 25,843,649 | |
| 2031 | 23,160,005 | 8,005,757 | 4,401,071 | 51,818,024 | 735,325 | 16,366,063 | 1,675,047 | 943,771 | 6,381,881 | 26,102,087 | |
| 2032 | 23,391,605 | 8,085,814 | 4,445,082 | 52,336,205 | 742,678 | 16,529,723 | 1,691,797 | 953,209 | 6,445,700 | 26,363,107 | |
| 2033 | 23,625,521 | 8,166,672 | 4,489,532 | 52,859,567 | 750,105 | 16,695,020 | 1,708,715 | 962,741 | 6,510,157 | 26,626,738 | |
| 2034 | 23,861,776 | 8,248,339 | 4,534,428 | 53,388,161 | 757,606 | 16,861,971 | 1,725,802 | 972,369 | 6,575,259 | 26,893,007 | |
| 2035 | 24,100,394 | | | | | | | | | | |

TABLE B-11 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of Transportation Charge (in dollars)

Sheet 7 of 9

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|--|----------------|-------------------|------------------|------------------|-------------------|-------------------|-------------------|------------------|----------------|
| | SANTA ANA DIVISION - EAST BRANCH EXTENSION | | | | | | | | | |
| | Reach 1 | Reach 2A | Reach 2B | Reach 2C | Reach 2D | Reach 2E | Reach 3A | Reach 3B | Reach 3C | Reach 3E |
| [59] | [60] | [61] | [62] | [63] | [64] | [65] | [66] | [67] | [68] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2003 | 1,022 | 84,351 | 375,153 | 2,329 | 0 | 0 | 627,038 | 0 | 360 | 0 |
| 2004 | 10,740 | 40,841 | 509,089 | 2,340 | 0 | 0 | 276,019 | 0 | 337 | 0 |
| 2005 | 9,849 | 15,079 | 526,273 | 4,153 | 0 | 0 | 496,547 | 0 | 9,036 | 0 |
| 2006 | 10,215 | 10,235 | 547,652 | 9,253 | 57,553 | 0 | 403,157 | 0 | 1,274 | 0 |
| 2007 | 27,124 | 9,821 | 657,894 | 5,083 | 125,317 | 0 | 616,360 | 0 | 58,543 | 0 |
| 2008 | 77,266 | 33,507 | 849,804 | 1,330 | 208,975 | 0 | 1,320,481 | 0 | 93,096 | 0 |
| 2009 | 79,970 | 15,365 | 1,001,173 | 919 | 230,886 | 0 | 1,015,588 | 0 | 24,880 | 0 |
| 2010 | 53,052 | 6,924 | 806,984 | 15,658 | 261,397 | 0 | 1,261,486 | 0 | 9,349 | 0 |
| 2011 | 21,407 | 5,387 | 700,551 | 4,440 | 117,224 | 0 | 1,102,193 | 0 | 10,973 | 0 |
| 2012 | 5,707 | 15,611 | 750,192 | 15,693 | 171,100 | 0 | 1,604,944 | 0 | 26,651 | 0 |
| 2013 | 1,121 | 6,020 | 603,687 | 171,472 | 293,188 | 0 | 1,621,779 | 0 | 4,281 | 0 |
| 2014 | 8,278 | 9,524 | 829,281 | 104,882 | 167,033 | 0 | 1,838,721 | 0 | 3,984 | 0 |
| 2015 | (140) | 7,978 | 823,580 | 11,284 | 89,609 | 0 | 1,509,370 | 0 | 105,479 | 0 |
| 2016 | 0 | 13,429 | 705,775 | 116,849 | 34,192 | 0 | 1,861,763 | 0 | 31,203 | 0 |
| 2017 | 1,233 | 9,103 | 1,075,145 | 160,823 | 29,137 | 1,448,010 | 1,901,240 | 0 | 56,306 | 0 |
| 2018 | 7,913 | 16,327 | 825,342 | 41,323 | 24,144 | 897,463 | 3,831,824 | 327,213 | 12,210 | 5,311 |
| 2019 | 4,038 | 13,829 | 914,310 | 108,871 | 34,741 | 1,175,313 | 3,852,303 | 614,132 | 36,701 | 7,049 |
| 2020 | 4,595 | 14,755 | 990,325 | 124,035 | 37,578 | 1,230,166 | 4,112,061 | 2,138,578 | 41,803 | 8,007 |
| 2021 | 4,616 | 14,790 | 993,503 | 124,648 | 37,054 | 1,220,679 | 4,336,463 | 1,003,422 | 42,006 | 8,039 |
| 2022 | 4,460 | 14,603 | 975,706 | 120,377 | 36,823 | 1,220,806 | 4,141,279 | 1,264,564 | 40,572 | 7,775 |
| 2023 | 4,505 | 14,749 | 985,464 | 121,581 | 37,191 | 1,233,014 | 4,182,692 | 1,277,210 | 40,977 | 7,853 |
| 2024 | 4,550 | 14,896 | 995,318 | 122,796 | 37,563 | 1,245,344 | 4,224,518 | 1,289,982 | 41,387 | 7,931 |
| 2025 | 4,595 | 15,045 | 1,005,271 | 124,024 | 37,938 | 1,257,798 | 4,266,764 | 1,302,882 | 41,801 | 8,011 |
| 2026 | 4,641 | 15,196 | 1,015,324 | 125,265 | 38,318 | 1,270,376 | 4,309,431 | 1,315,911 | 42,219 | 8,091 |
| 2027 | 4,688 | 15,347 | 1,025,477 | 126,517 | 38,701 | 1,283,080 | 4,352,526 | 1,329,070 | 42,641 | 8,172 |
| 2028 | 4,735 | 15,501 | 1,035,732 | 127,782 | 39,088 | 1,295,910 | 4,396,051 | 1,342,361 | 43,068 | 8,253 |
| 2029 | 4,782 | 15,656 | 1,046,089 | 129,060 | 39,479 | 1,308,869 | 4,440,011 | 1,355,784 | 43,498 | 8,336 |
| 2030 | 4,830 | 15,813 | 1,056,550 | 130,351 | 39,874 | 1,321,958 | 4,484,411 | 1,369,342 | 43,933 | 8,419 |
| 2031 | 4,878 | 15,971 | 1,067,116 | 131,654 | 40,272 | 1,335,178 | 4,529,256 | 1,383,036 | 44,373 | 8,503 |
| 2032 | 4,927 | 16,130 | 1,077,787 | 132,971 | 40,675 | 1,348,530 | 4,574,548 | 1,396,866 | 44,816 | 8,588 |
| 2033 | 4,976 | 16,292 | 1,088,565 | 134,301 | 41,082 | 1,362,015 | 4,620,294 | 1,410,835 | 45,265 | 8,674 |
| 2034 | 5,026 | 16,455 | 1,099,450 | 135,644 | 41,493 | 1,375,635 | 4,666,497 | 1,424,943 | 45,717 | 8,761 |
| 2035 | 5,076 | 16,619 | 1,110,445 | 137,000 | 41,908 | 1,389,391 | 4,713,162 | 1,439,192 | 46,174 | 8,849 |
| TOTAL | 394,673 | 561,148 | 29,070,005 | 2,824,708 | 2,469,532 | 24,219,535 | 95,490,778 | 22,985,323 | 1,174,912 | 144,622 |

TABLE B-11 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of Transportation Charge (in dollars)

Sheet 8 of 9

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | | |
|---------------|--|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|----------------------|---|
| | SANTA ANA DIVISION - EAST BRANCH EXTENSION (cont.) | | | WEST BRANCH | | | | | | | |
| | Reach 4A | Reach 4B | Subtotal | Reach 29A | Reach 29F | Reach 29G | Reach 29H | Reach 29J | Reach 30 | Subtotal | |
| 1961 | [69] | [70] | [71] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 719,255 | 159,249 | 199,145 | 234,196 | 88,198 | 420,789 | 1,820,832 | |
| 1973 | 0 | 0 | 0 | 779,949 | 339,363 | 122,664 | 264,850 | 119,743 | 621,431 | 2,248,000 | |
| 1974 | 0 | 0 | 0 | 883,312 | 158,366 | 112,458 | 350,160 | (4,525) | 723,949 | 2,223,720 | |
| 1975 | 0 | 0 | 0 | 1,049,990 | 176,676 | 194,724 | 801,457 | 75,870 | 841,991 | 3,140,708 | |
| 1976 | 0 | 0 | 0 | 1,220,429 | 215,588 | 202,591 | 624,614 | 98,268 | (650,944) | 1,710,546 | |
| 1977 | 0 | 0 | 0 | 1,268,813 | 116,939 | 218,129 | 684,679 | 184 | 634,581 | 2,923,325 | |
| 1978 | 0 | 0 | 0 | 1,174,708 | 342,479 | 267,308 | 415,641 | 17,764 | 3,088,954 | 5,306,854 | |
| 1979 | 0 | 0 | 0 | 1,366,942 | 285,575 | 284,188 | 972,584 | 29,850 | 958,068 | 3,897,207 | |
| 1980 | 0 | 0 | 0 | 1,698,215 | 224,472 | 455,619 | 874,259 | 288,303 | 222,549 | 3,763,417 | |
| 1981 | 0 | 0 | 0 | 1,783,405 | 123,264 | 615,047 | 2,305,110 | 8,794 | 1,093,897 | 5,929,517 | |
| 1982 | 0 | 0 | 0 | 1,919,979 | 190,500 | 702,265 | 2,208,264 | 414,230 | 978,624 | 6,413,862 | |
| 1983 | 0 | 0 | 0 | 2,739,814 | 149,333 | 888,475 | 745,939 | 579,882 | 3,698,681 | 8,802,124 | |
| 1984 | 0 | 0 | 0 | 3,463,038 | 81,260 | 2,358,495 | 537,207 | 719,282 | 755,136 | 7,914,418 | |
| 1985 | 0 | 0 | 0 | 3,866,946 | 295,836 | 3,047,591 | 975,729 | 614,735 | 1,753,355 | 10,554,192 | |
| 1986 | 0 | 0 | 0 | 3,791,427 | 457,604 | 2,893,171 | 1,480,015 | 1,032,216 | 1,338,657 | 10,993,090 | |
| 1987 | 0 | 0 | 0 | 3,423,494 | 213,106 | 2,933,342 | 944,604 | 459,398 | 1,406,519 | 9,380,463 | |
| 1988 | 0 | 0 | 0 | 3,447,403 | 255,113 | 3,017,463 | 883,714 | 446,468 | 1,452,589 | 9,502,750 | |
| 1989 | 0 | 0 | 0 | 4,025,641 | 405,583 | 2,738,143 | 1,398,165 | 865,738 | 1,505,029 | 10,938,299 | |
| 1990 | 0 | 0 | 0 | 4,088,481 | 383,655 | 3,232,445 | 3,153,869 | 777,713 | 847,500 | 12,483,663 | |
| 1991 | 0 | 0 | 0 | 3,862,056 | 304,143 | 3,550,063 | 639,527 | 763,037 | 1,191,090 | 10,309,916 | |
| 1992 | 0 | 0 | 0 | 4,286,050 | 327,802 | 3,892,480 | 1,014,551 | 872,953 | 2,259,032 | 12,652,868 | |
| 1993 | 0 | 0 | 0 | 3,969,075 | 343,304 | 4,515,385 | 1,670,952 | 852,208 | 1,157,876 | 12,508,800 | |
| 1994 | 0 | 0 | 0 | 3,649,861 | 293,376 | 3,359,381 | 1,879,417 | 872,624 | 1,674,576 | 11,729,235 | |
| 1995 | 0 | 0 | 0 | 4,137,046 | 883,315 | 4,750,275 | 1,588,080 | 754,904 | (421,879) | 11,691,741 | |
| 1996 | 0 | 0 | 0 | 4,511,858 | 966,044 | 3,593,671 | 4,208,195 | 877,111 | 1,574,098 | 15,730,977 | |
| 1997 | 0 | 0 | 0 | 4,543,506 | 1,030,809 | 2,429,066 | 3,755,901 | 1,597,361 | 1,521,491 | 14,878,134 | |
| 1998 | 0 | 0 | 0 | 4,871,761 | 464,376 | 3,473,405 | 2,398,630 | 1,996,114 | 1,291,185 | 14,495,471 | |
| 1999 | 0 | 0 | 0 | 4,859,457 | 4,249,651 | 4,989,423 | 1,764,943 | 1,005,565 | 1,911,025 | 18,780,064 | |
| 2000 | 0 | 0 | 0 | 5,446,494 | 780,366 | 4,265,642 | 2,349,816 | 170,222 | 1,524,046 | 14,536,587 | |
| 2001 | 0 | 0 | 0 | 5,905,961 | 1,526,938 | 5,136,328 | 4,375,496 | 240,595 | (923,056) | 16,262,262 | |
| 2002 | 0 | 0 | 0 | 5,322,898 | 1,489,777 | 4,065,555 | 4,477,074 | (53,068) | 3,470,537 | 18,772,772 | |
| 2003 | 93,305 | 33,614 | 1,217,171 | 4,454,323 | 1,314,151 | 3,721,548 | 3,350,502 | (628,046) | 951,874 | 13,164,353 | |
| 2004 | 13,434 | 71,444 | 924,242 | 8,912,349 | 1,376,812 | 3,481,196 | 5,121,099 | (616,073) | 1,506,356 | 19,781,738 | |
| 2005 | 27,330 | 216,418 | 1,304,685 | 5,758,956 | 2,597,096 | 7,383,506 | (596,347) | 2,649,206 | (1,245,748) | 16,546,669 | |
| 2006 | 14,842 | 72,655 | 1,126,834 | 6,924,653 | 2,293,365 | 5,115,005 | 3,563,792 | (560,871) | (4,255,675) | 13,080,270 | |
| 2007 | 39,200 | 138,358 | 1,677,699 | 5,707,170 | 2,718,008 | 10,420,367 | 7,823,140 | 356,041 | 12,026,120 | 39,050,846 | |
| 2008 | 76,668 | 231,149 | 2,892,276 | 8,316,330 | 835,957 | 16,213,811 | 7,453,361 | (114,790) | 433,204 | 33,137,873 | |
| 2009 | 140,919 | 231,789 | 2,741,489 | 7,875,242 | 891,587 | 8,682,266 | 5,660,400 | 246,215 | 2,845,716 | 26,201,426 | |
| 2010 | 162,803 | 356,240 | 2,933,893 | 10,050,359 | 789,729 | 8,844,408 | 6,210,090 | 429,116 | 5,289,545 | 31,613,246 | |
| 2011 | 75,147 | 545,213 | 2,582,534 | 6,949,489 | 935,484 | 9,611,840 | 8,034,092 | 43,741 | (255,761) | 25,318,885 | |
| 2012 | 18,388 | 198,585 | 2,806,871 | 7,478,811 | 2,889,612 | 9,428,975 | 6,170,860 | 107,660 | 6,510,774 | 32,586,693 | |
| 2013 | 6,155 | 183,657 | 2,891,361 | 8,802,637 | 3,778,055 | 12,292,179 | 7,206,269 | 401,260 | 3,665,917 | 36,146,317 | |
| 2014 | 2,439 | 322,684 | 3,286,825 | 10,789,856 | 3,106,249 | 7,291,587 | 7,277,685 | 396,860 | 5,411,511 | 34,273,747 | |
| 2015 | 19,701 | 387,940 | 2,954,802 | 9,371,178 | 3,672,016 | 7,577,743 | 8,763,298 | 296,638 | 432,038 | 30,112,911 | |
| 2016 | 5,660 | 496,640 | 3,265,510 | 11,712,084 | 3,729,258 | 8,295,133 | 8,734,480 | 1,268,443 | (5,494,973) | 28,244,425 | |
| 2017 | 59,785 | 305,817 | 5,046,598 | 10,015,239 | 2,115,477 | 8,728,754 | 9,121,177 | (207,358) | 16,088,131 | 45,861,420 | |
| 2018 | 7,904 | 239,000 | 6,235,973 | 9,235,607 | 5,597,780 | 8,897,059 | 5,933,335 | (19,206) | 6,846,786 | 36,491,360 | |
| 2019 | 26,301 | 422,974 | 7,210,562 | 11,965,060 | 5,002,311 | 9,686,481 | 9,869,905 | 593,125 | 7,037,669 | 44,154,551 | |
| 2020 | 29,937 | 468,834 | 9,200,674 | 13,300,382 | 4,225,272 | 10,471,137 | 9,721,181 | 632,893 | 8,431,084 | 46,781,949 | |
| 2021 | 30,076 | 469,782 | 8,285,078 | 13,916,468 | 5,025,225 | 10,497,578 | 11,125,319 | 599,096 | 6,453,972 | 47,617,658 | |
| 2022 | 29,059 | 458,402 | 8,314,426 | 13,191,243 | 4,798,445 | 10,320,583 | 10,341,190 | 614,456 | 7,380,651 | 46,646,568 | |
| 2023 | 29,349 | 462,986 | 8,397,571 | 13,323,156 | 4,846,430 | 10,423,789 | 10,444,602 | 620,600 | 7,454,457 | 47,113,034 | |
| 2024 | 29,643 | 467,616 | 8,481,544 | 13,456,387 | 4,894,894 | 10,528,027 | 10,549,048 | 626,806 | 7,529,002 | 47,584,164 | |
| 2025 | 29,939 | 472,292 | 8,566,360 | 13,590,951 | 4,943,843 | 10,633,307 | 10,654,538 | 633,074 | 7,604,292 | 48,060,005 | |
| 2026 | 30,239 | 477,015 | 8,652,026 | 13,726,861 | 4,993,281 | 10,739,640 | 10,761,084 | 639,405 | 7,680,335 | 48,540,606 | |
| 2027 | 30,541 | 481,785 | 8,738,545 | 13,864,129 | 5,043,214 | 10,847,036 | 10,868,695 | 645,799 | 7,757,138 | 49,026,011 | |
| 2028 | 30,846 | 486,603 | 8,825,930 | 14,002,771 | 5,093,646 | 10,955,507 | 10,977,382 | 652,257 | 7,834,709 | 49,516,272 | |
| 2029 | 31,155 | 491,469 | 8,914,188 | 14,142,798 | 5,144,583 | 11,065,062 | 11,087,155 | 658,780 | 7,913,057 | 50,011,435 | |
| 2030 | 31,466 | 496,383 | 9,003,330 | 14,284,226 | 5,196,029 | 11,175,712 | 11,198,027 | 665,367 | 7,992,187 | 50,511,548 | |
| 2031 | 31,781 | 501,347 | 9,093,365 | 14,427,069 | 5,247,989 | 11,287,470 | 11,310,007 | 672,021 | 8,072,109 | 51,016,665 | |
| 2032 | 32,099 | 506,361 | 9,184,298 | 14,571,339 | 5,300,469 | 11,400,344 | 11,423,107 | 678,741 | 8,152,830 | 51,526,830 | |
| 2033 | 32,420 | 511,424 | 9,276,143 | 14,717,053 | 5,353,474 | 11,514,348 | 11,537,338 | 685,529 | 8,234,358 | 52,042,100 | |
| 2034 | 32,744 | 516,538 | 9,368,903 | 14,864,223 | 5,407,008 | 11,629,491 | 11,652,712 | 692,384 | 8,316,702 | 52,562,520 | |
| 2035 | 33,072 | 521,704 | 9,462,592 | 15,012,865 | 5,461,078 | 11,745,786 | 11,769,239 | 699,308 | 8,399,869 | 53,088,145 | |
| TOTAL | 1,284,348 | 12,244,715 | 192,864,299 | 466,788,528 | 141,851,689 | 393,410,612 | 335,095,399 | 31,640,215 | 220,921,611 | 1,589,708,053 | |

TABLE B-11 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of Transportation Charge (in dollars)

Sheet 9 of 9

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | GRAND TOTAL | |
|---------------|---------------------------------|--------------------|--------------------|----------------|------------------|-------------------|-----------------------|--|
| | COASTAL BRANCH | | | | | | | |
| | Reach 31A ^a | Reach 33A | Reach 33B | Reach 34 | Reach 35 | Subtotal | | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 42,918 | |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 168,358 | |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 184,729 | |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 378,874 | |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 408,397 | |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0634,505 | |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 2,160,548 | |
| 1969 | 509,728 | 0 | 0 | 0 | 0 | 509,728 | 3,324,718 | |
| 1970 | 609,988 | 0 | 0 | 0 | 0 | 609,988 | 3,983,062 | |
| 1971 | 699,052 | 0 | 0 | 0 | 0 | 699,052 | 5,614,013 | |
| 1972 | 697,576 | 0 | 0 | 0 | 0 | 697,576 | 12,353,356 | |
| 1973 | 641,626 | 0 | 0 | 0 | 0 | 641,626 | 14,590,688 | |
| 1974 | 669,279 | 0 | 0 | 0 | 0 | 669,279 | 16,598,762 | |
| 1975 | 806,429 | 0 | 0 | 0 | 0 | 806,429 | 19,569,999 | |
| 1976 | 840,927 | 0 | 0 | 0 | 0 | 840,927 | 19,002,859 | |
| 1977 | 872,169 | 0 | 0 | 0 | 0 | 872,169 | 23,267,885 | |
| 1978 | 934,119 | 0 | 0 | 0 | 0 | 934,119 | 24,818,739 | |
| 1979 | 871,688 | 0 | 0 | 0 | 0 | 871,688 | 23,421,881 | |
| 1980 | 1,047,396 | 4,790 | 0 | 30 | 75 | 1,052,291 | 30,105,348 | |
| 1981 | 1,037,469 | 4,790 | 0 | 30 | 75 | 1,042,364 | 33,884,524 | |
| 1982 | 1,015,555 | 4,790 | 0 | 30 | 75 | 1,020,450 | 39,515,188 | |
| 1983 | 1,146,269 | 4,957 | 0 | 30 | 77 | 1,151,333 | 54,543,263 | |
| 1984 | 1,427,192 | 5,051 | 0 | 31 | 78 | 1,432,352 | 63,947,633 | |
| 1985 | 1,849,827 | 5,051 | 0 | 31 | 78 | 1,854,987 | 69,700,009 | |
| 1986 | 1,714,723 | 5,051 | 0 | 31 | 78 | 1,719,883 | 73,437,761 | |
| 1987 | 1,689,141 | 4,324 | 0 | 26 | 67 | 1,693,558 | 71,443,424 | |
| 1988 | 1,964,428 | 4,509 | 0 | 28 | 70 | 1,969,035 | 72,349,117 | |
| 1989 | 1,768,942 | 4,509 | 0 | 28 | 70 | 1,773,549 | 73,894,076 | |
| 1990 | 2,274,772 | 0 | 0 | 0 | 0 | 2,274,772 | 86,130,115 | |
| 1991 | 2,187,841 | 0 | 0 | 0 | 0 | 2,187,841 | 86,877,284 | |
| 1992 | 2,465,364 | 0 | 0 | 0 | 0 | 2,465,364 | 94,167,321 | |
| 1993 | 2,811,441 | 0 | 0 | 0 | 0 | 2,811,441 | 100,019,568 | |
| 1994 | 3,894,639 | 0 | 0 | 0 | 0 | 3,894,639 | 92,336,811 | |
| 1995 | 3,481,049 | 0 | 0 | 0 | 0 | 3,481,049 | 98,887,435 | |
| 1996 | 5,144,684 | 0 | 0 | 0 | 0 | 5,144,684 | 105,119,193 | |
| 1997 | 2,523,741 | (33) | 0 | 0 | 0 | 2,523,708 | 107,647,058 | |
| 1998 | 4,302,712 | 1,878,365 | 1,386 | 160,400 | 88,026 | 6,430,889 | 120,649,996 | |
| 1999 | 4,235,897 | 1,957,943 | 16,646 | 184,325 | 87,373 | 6,482,183 | 126,770,225 | |
| 2000 | 2,879,294 | 2,533,879 | 20,786 | 253,538 | 109,328 | 5,796,825 | 121,957,382 | |
| 2001 | 3,114,729 | 2,233,473 | 14,426 | 151,374 | 57,878 | 5,571,880 | 135,885,738 | |
| 2002 | 3,174,176 | 2,686,500 | 49,511 | 189,458 | 81,857 | 6,181,501 | 124,839,671 | |
| 2003 | 3,333,349 | 2,780,276 | 44,211 | 200,986 | 85,015 | 6,443,837 | 126,099,281 | |
| 2004 | 3,535,885 | 2,673,184 | 69,895 | 240,426 | 109,830 | 6,629,220 | 144,450,542 | |
| 2005 | 3,837,238 | 2,979,942 | 120,379 | 292,354 | 137,878 | 7,367,791 | 122,350,247 | |
| 2006 | 2,521,836 | 3,182,874 | 56,543 | 154,568 | 78,445 | 5,994,266 | 127,460,887 | |
| 2007 | 3,220,859 | 2,947,719 | 24,929 | 13,664 | 15,943 | 6,223,113 | 158,572,492 | |
| 2008 | 5,645,331 | 4,241,714 | 10,299 | 5,521 | 5,399 | 9,908,264 | 179,244,332 | |
| 2009 | 5,222,195 | 3,733,063 | 20,503 | 8,770 | 8,179 | 8,992,711 | 160,039,426 | |
| 2010 | 6,455,963 | 6,377,895 | 77,603 | 19,136 | 21,693 | 12,952,290 | 161,549,909 | |
| 2011 | 6,179,264 | 5,762,931 | 39,858 | 13,760 | 12,291 | 12,008,104 | 173,289,188 | |
| 2012 | 5,323,128 | 6,432,103 | 24,824 | 11,518 | 8,939 | 11,800,511 | 192,195,700 | |
| 2013 | 5,969,131 | 7,968,147 | 54,228 | 26,376 | 22,836 | 14,040,717 | 218,001,700 | |
| 2014 | 7,915,598 | 4,194,995 | 20,054 | 9,711 | 17,282 | 12,157,641 | 237,941,969 | |
| 2015 | 10,259,233 | 6,624,915 | 429 | 8,470 | 22,521 | 16,915,568 | 224,901,568 | |
| 2016 | 4,886,048 | 10,742,639 | 0 | 4,778 | 13,941 | 15,647,405 | 224,481,443 | |
| 2017 | 5,266,076 | 14,481,710 | 0 | 4,811 | 13,181 | 19,765,777 | 225,162,404 | |
| 2018 | 7,384,783 | 13,081,484 | 0 | 7,989 | 21,235 | 20,495,491 | 243,172,266 | |
| 2019 | 7,263,286 | 11,435,674 | 0 | 0 | 0 | 18,698,960 | 286,728,672 | |
| 2020 | 7,035,925 | 10,916,355 | 0 | 0 | 0 | 17,952,280 | 283,182,449 | |
| | TOTAL | 280,964,902 | 309,241,263 | 666,508 | 1,962,227 | 1,019,811 | 593,854,711 | |
| | | | | | | | 10,225,012,386 | |
| | | | | | | | 11,017,091,757 | |

^a Includes certain costs to be assigned directly to Kern County Water Agency. Refer to Appendix B text discussion of Table B-16A under "Project Water Charges."

Tables B-12 through B-31

Note: Where applicable, the projected data values shown in this appendix are shaded and the bill year data are in **bold** type.

TABLE B-12 Variable OMP&R Costs to be Reimbursed through Variable OMP&R Component of Transportation Charge^a (in dollars)

Sheet 1 of 4

| Calendar Year | NORTH BAY AQUEDUCT | | | | SOUTH BAY AQUEDUCT | CALIFORNIA AQUEDUCT | | |
|---------------|--------------------------------|---|--|-------------------|--------------------|--|-----------------------------|------------------------------|
| | Reach 1 | Reach 3A Cordelia Pumping Plant (Solano) | Reach 3B Cordelia Pumping Plant (Napa) ^b | Total | | Reach 1 South Bay and Del Valle Pumping Plants ^c | Reach 1 | Reach 4 |
| | Barker Slough Pumping Plant | | | | | Banks Pumping Plant | Dos Amigos Pumping Plant | Buena Vista Pumping Plant |
| [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | |
| 1962 | 0 | 0 | 0 | 36,970 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 57,711 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 74,134 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 142,609 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 192,605 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 223,117 | 13,881 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 6,989 | 336,671 | 452,630 | 202,947 | 0 | |
| 1969 | 0 | 0 | 8,551 | 257,579 | 293,741 | 135,425 | 0 | |
| 1970 | 0 | 0 | 13,598 | 396,358 | 346,215 | 211,197 | 1 | |
| 1971 | 0 | 0 | 10,609 | 381,662 | 574,015 | 225,188 | 115,801 | |
| 1972 | 0 | 0 | 14,434 | 598,702 | 933,292 | 502,196 | 198,914 | |
| 1973 | 0 | 0 | 14,449 | 493,490 | 688,030 | 381,232 | 263,468 | |
| 1974 | 0 | 0 | 17,473 | 565,575 | 783,562 | 447,772 | 315,939 | |
| 1975 | 0 | 0 | 14,779 | 349,758 | 1,341,019 | 518,816 | 508,060 | |
| 1976 | 0 | 0 | 20,856 | 571,361 | 1,638,453 | 641,115 | 712,947 | |
| 1977 | 0 | 0 | 22,635 | 512,996 | 1,013,307 | 284,828 | 267,467 | |
| 1978 | 0 | 0 | 21,692 | 586,355 | 2,339,502 | 607,042 | 689,236 | |
| 1979 | 0 | 0 | 16,237 | 605,136 | 3,554,256 | 1,008,564 | 776,016 | |
| 1980 | 0 | 0 | 19,945 | 523,369 | 2,083,336 | 1,129,152 | 1,051,629 | |
| 1981 | 0 | 0 | 23,842 | 567,692 | 3,952,931 | 1,939,189 | 1,336,867 | |
| 1982 | 0 | 0 | 12,157 | 605,780 | 3,082,031 | 1,363,705 | 1,200,226 | |
| 1983 | 0 | 0 | 2,342 | 82,222 | 1,001,612 | 396,086 | 450,801 | |
| 1984 | 0 | 0 | 4,822 | 271,543 | 1,856,959 | 976,773 | 823,681 | |
| 1985 | 0 | 0 | 10,188 | 451,020 | 3,186,029 | 1,621,418 | 1,409,980 | |
| 1986 | 0 | 0 | 15,501 | 814,111 | 6,595,625 | 2,627,407 | 2,405,224 | |
| 1987 | 0 | 0 | 27,223 | 888,558 | 5,740,403 | 2,518,308 | 2,231,491 | |
| 1988 | 17,813 | 0 | 24,020 | 41,833 | 911,176 | 6,276,214 | 2,610,048 | 2,560,122 |
| 1989 | 29,819 | 43,846 | 26,519 | 100,184 | 1,163,619 | 9,847,706 | 3,953,735 | 4,042,211 |
| 1990 | 52,210 | 67,109 | 40,775 | 160,094 | 1,834,626 | 10,460,533 | 4,498,260 | 5,779,750 |
| 1991 | 10,429 | 10,118 | 5,252 | 25,799 | 420,688 | 1,882,952 | 491,071 | 904,541 |
| 1992 | 13,319 | 13,070 | 9,406 | 35,795 | 339,021 | 3,129,419 | 1,147,502 | 1,221,282 |
| 1993 | (11,941) | (8,753) | (5,392) | (26,086) | (150,856) | 497,455 | 326,100 | (108,089) |
| 1994 | 46,791 | 39,624 | 29,189 | 115,604 | 801,374 | 5,677,009 | 2,305,603 | 2,523,572 |
| 1995 | 20,014 | 20,620 | 11,791 | 52,425 | 302,558 | 3,805,713 | 1,451,578 | 815,572 |
| 1996 | 57,320 | 47,288 | 23,483 | 128,091 | 718,807 | 8,192,821 | 4,009,531 | 2,493,264 |
| 1997 | 67,416 | 52,935 | 21,955 | 142,306 | 1,038,568 | 6,900,694 | 2,845,506 | 2,589,077 |
| 1998 | (11,427) | (10,141) | (4,879) | (26,447) | (130,734) | 185,756 | (336,341) | (263,072) |
| 1999 | 32,592 | 26,104 | 11,921 | 70,617 | 422,816 | 6,881,085 | 2,368,056 | 1,639,887 |
| 2000 | 58,200 | 42,262 | 14,978 | 115,441 | 903,391 | 7,901,803 | 3,012,840 | 2,925,486 |
| 2001 | 356,682 | 247,499 | 211,786 | 815,967 | 4,022,683 | 23,537,500 | 9,608,845 | 14,398,956 |
| 2002 | 190,460 | 104,564 | 61,470 | 356,494 | 2,324,926 | 17,025,395 | 6,894,223 | 8,423,374 |
| 2003 | 181,041 | 118,387 | 97,762 | 397,190 | 2,568,901 | 21,144,026 | 8,873,171 | 10,393,208 |
| 2004 | 251,516 | 139,241 | 107,251 | 498,008 | 2,555,185 | 21,511,700 | 9,305,291 | 12,251,722 |
| 2005 | 285,238 | 147,895 | 149,083 | 582,216 | 2,835,209 | 28,306,243 | 12,456,894 | 11,506,677 |
| 2006 | 235,576 | 116,793 | 147,726 | 500,095 | 2,771,403 | 23,392,014 | 10,503,663 | 11,273,022 |
| 2007 | 451,871 | 228,027 | 257,002 | 936,900 | 4,237,110 | 25,192,155 | 10,892,097 | 16,129,498 |
| 2008 | 424,382 | 196,002 | 302,379 | 922,763 | 3,337,906 | 17,267,914 | 6,132,677 | 11,219,697 |
| 2009 | 218,855 | 103,260 | 163,044 | 485,159 | 2,487,402 | 9,233,236 | 4,052,374 | 6,862,168 |
| 2010 | 260,434 | 112,274 | 215,339 | 588,046 | 2,374,745 | 21,167,033 | 9,473,277 | 10,604,521 |
| 2011 | 270,039 | 115,853 | 228,034 | 613,926 | 3,404,860 | 35,543,413 | 15,146,928 | 14,404,786 |
| 2012 | 264,258 | 119,755 | 184,384 | 568,397 | 3,422,080 | 26,582,678 | 11,637,800 | 13,273,846 |
| 2013 | 436,171 | 208,297 | 323,106 | 967,574 | 5,459,659 | 22,832,931 | 8,749,473 | 12,325,594 |
| 2014 | 363,700 | 186,245 | 448,762 | 998,706 | 4,136,818 | 11,341,133 | 3,553,515 | 7,056,476 |
| 2015 | 389,962 | 239,597 | 359,548 | 989,107 | 5,764,886 | 16,694,824 | 5,458,240 | 9,933,760 |
| 2016 | 277,583 | 158,889 | 256,665 | 693,137 | 4,394,849 | 30,071,483 | 11,779,251 | 15,829,310 |
| 2017 | 297,117 | 185,211 | 186,063 | 668,391 | 3,596,848 | 45,155,015 | 21,582,479 | 22,576,600 |
| 2018 | 496,908 | 310,428 | 314,585 | 1,121,921 | 5,488,793 | 27,245,778 | 10,832,713 | 13,988,252 |
| 2019 | 538,618 | 153,908 | 518,281 | 1,210,807 | 4,220,627 | 37,612,557 | 17,745,861 | 18,773,905 |
| 2020 | 495,448 | 0 | 473,230 | 968,678 | 5,491,318 | 37,891,191 | 15,803,165 | 20,004,590 |
| 2021 | 511,141 | 0 | 488,219 | 999,360 | 5,581,793 | 38,914,877 | 15,968,965 | 20,277,904 |
| 2022 | 549,691 | 0 | 360,215 | 909,906 | 5,175,295 | 45,795,102 | 16,735,825 | 21,112,247 |
| 2023 | 551,055 | 0 | 361,108 | 912,163 | 5,197,277 | 33,542,694 | 16,718,875 | 21,062,979 |
| 2024 | 551,019 | 0 | 361,084 | 912,103 | 5,196,934 | 35,135,717 | 16,506,594 | 20,679,110 |
| 2025 | 551,143 | 0 | 361,166 | 912,309 | 5,198,103 | 38,324,564 | 16,676,265 | 20,983,976 |
| 2026 | 551,020 | 0 | 361,085 | 912,105 | 5,196,944 | 32,072,941 | 16,416,537 | 20,517,282 |
| 2027 | 551,173 | 0 | 361,185 | 912,358 | 5,198,389 | 35,387,680 | 16,715,077 | 21,054,055 |
| 2028 | 551,019 | 0 | 361,085 | 912,104 | 5,196,940 | 34,587,164 | 16,498,803 | 20,665,069 |
| 2029 | 551,608 | 0 | 361,471 | 913,079 | 5,202,492 | 25,487,156 | 16,665,905 | 20,957,315 |
| 2030 | 550,905 | 0 | 361,010 | 911,915 | 5,195,859 | 35,366,049 | 16,437,142 | 20,556,104 |
| 2031 | 551,261 | 0 | 361,243 | 912,504 | 5,199,217 | 34,840,281 | 17,304,554 | 22,142,765 |
| 2032 | 550,279 | 0 | 360,599 | 910,878 | 5,342,342 | 43,177,975 | 16,020,539 | 19,826,525 |
| 2033 | 551,285 | 0 | 361,258 | 912,543 | 5,089,694 | 34,901,949 | 17,253,748 | 22,048,196 |
| 2034 | 551,108 | 0 | 361,142 | 912,250 | 5,197,770 | 31,737,094 | 16,120,135 | 19,988,784 |
| 2035 | 550,995 | 0 | 361,069 | 912,064 | 5,196,710 | 54,739,047 | 18,483,794 | 24,437,649 |
| TOTAL | 15,293,118 | 3,536,205 | 11,055,780 | 29,885,102 | 172,424,106 | 1,165,868,496 | 507,426,544 | 619,421,273 |

^a Excludes extra peaking costs assigned directly to contractors. Refer to Appendix B text discussion of Table B-17 under "Project Water Charges."^b Costs for the period 1968 through 1987 are for an interim facility.^c The relatively minor costs of Del Valle Pumping Plant have been combined with those of South Bay Pumping Plant to simplify the allocation procedures.

TABLE B-12 Variable OMP&R Costs to be Reimbursed through Variable OMP&R Component of Transportation Charge^a (in dollars)

Sheet 2 of 4

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | |
|---------------|--|-------------------------------------|--------------------------------------|-------------------------------|--|--------------------------------------|--|
| | Reach 15A Wheeler Ridge Pumping Plant | Reach 16A Chrisman Pumping Plant | Reach 17E Edmonston Pumping Plant | Reach 18A Alamo Powerplant | Reach 22B Pearblossom Pumping Plant | Reach 23 Mojave Siphon Powerplant | Reach 24 Silverwood Lake ^d |
| [9] | [10] | [11] | [12] | [13] | [14] | [15] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 2,564 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 68,304 | 142,902 | 542,625 | 0 | 3,468 | 0 | 0 |
| 1973 | 236,623 | 387,198 | 1,548,428 | 0 | 202,289 | 0 | 0 |
| 1974 | 324,966 | 564,464 | 2,164,223 | 0 | 324,993 | 0 | 0 |
| 1975 | 552,952 | 1,095,331 | 4,010,395 | 0 | 575,061 | 0 | 0 |
| 1976 | 713,875 | 1,506,985 | 5,443,936 | 0 | 889,544 | 0 | 0 |
| 1977 | 303,107 | 657,108 | 2,360,624 | 0 | 315,128 | 0 | 0 |
| 1978 | 616,104 | 1,132,296 | 4,180,131 | 0 | 1,508,115 | 0 | 0 |
| 1979 | 749,188 | 1,526,850 | 5,475,688 | 0 | 1,838,687 | 0 | 0 |
| 1980 | 1,047,495 | 2,102,439 | 7,028,235 | 0 | 1,762,063 | 0 | 0 |
| 1981 | 1,319,739 | 2,838,773 | 9,351,931 | 0 | 2,296,771 | 0 | 0 |
| 1982 | 1,213,660 | 2,424,920 | 8,352,207 | 0 | 1,498,620 | 0 | 0 |
| 1983 | 432,165 | 793,915 | 2,375,225 | 0 | 397,766 | 0 | 0 |
| 1984 | 770,618 | 1,479,784 | 4,585,198 | 0 | 624,213 | 0 | 0 |
| 1985 | 1,411,621 | 2,812,461 | 9,365,591 | 0 | 1,226,515 | 0 | 0 |
| 1986 | 2,432,322 | 4,999,949 | 16,956,023 | (1,013,756) | 2,359,599 | 0 | 0 |
| 1987 | 2,213,047 | 4,434,510 | 14,612,448 | (1,017,868) | 1,814,728 | 0 | 243,983 |
| 1988 | 2,557,952 | 5,120,998 | 16,801,811 | (742,800) | 2,370,395 | 0 | 37,927 |
| 1989 | 4,061,396 | 8,559,270 | 28,732,499 | (788,139) | 4,228,697 | 0 | 50,884 |
| 1990 | 6,013,924 | 13,616,111 | 48,319,508 | (832,947) | 6,490,357 | 0 | 187,259 |
| 1991 | 1,032,050 | 2,427,880 | 8,647,065 | (269,625) | 996,352 | 0 | 0 |
| 1992 | 1,274,895 | 2,560,253 | 8,575,989 | (916,154) | 1,142,454 | 0 | 317,172 |
| 1993 | (86,676) | (490,235) | (2,223,221) | (55,346) | (245,059) | 0 | (79,954) |
| 1994 | 2,537,943 | 5,323,430 | 18,470,003 | (59,356) | 2,605,813 | 0 | 0 |
| 1995 | 725,389 | 1,435,098 | 4,738,967 | (1,187,312) | 972,086 | 0 | 777,343 |
| 1996 | 2,299,388 | 4,875,010 | 17,027,386 | (2,788,262) | 2,647,473 | (914,092) | 1,053,254 |
| 1997 | 2,417,154 | 5,424,334 | 19,413,834 | (2,488,338) | 3,037,087 | (1,680,469) | 0 |
| 1998 | (236,322) | (524,933) | (1,809,182) | (1,969,187) | (431,135) | (1,217,950) | (149,186) |
| 1999 | 1,349,435 | 3,454,259 | 13,349,865 | (2,851,993) | 1,933,516 | (2,533,429) | 76,199 |
| 2000 | 2,995,367 | 6,892,863 | 24,868,765 | (5,070,499) | 3,889,138 | (4,371,978) | 0 |
| 2001 | 14,749,926 | 33,210,381 | 122,677,209 | (3,276,174) | 18,689,339 | (3,621,886) | 919,165 |
| 2002 | 8,731,692 | 19,721,183 | 72,471,745 | (4,919,131) | 10,667,928 | (5,247,076) | 95,265 |
| 2003 | 10,814,071 | 24,634,664 | 90,645,519 | (3,362,477) | 14,524,245 | (6,610,346) | 231,996 |
| 2004 | 12,863,080 | 29,368,759 | 107,972,655 | (6,248,061) | 16,993,152 | (7,691,613) | 0 |
| 2005 | 11,769,639 | 26,675,193 | 94,388,290 | (5,791,742) | 17,552,651 | (6,359,950) | 0 |
| 2006 | 11,447,243 | 26,082,690 | 81,840,264 | (4,022,339) | 15,985,964 | (6,347,742) | 0 |
| 2007 | 16,657,672 | 37,658,094 | 125,592,448 | (2,976,651) | 19,486,653 | (5,872,118) | 0 |
| 2008 | 12,277,457 | 24,908,271 | 77,920,401 | (3,305,736) | 10,680,809 | (3,203,162) | 321,066 |
| 2009 | 7,292,786 | 15,754,537 | 70,994,483 | (3,096,612) | 9,124,096 | (2,225,065) | 2,053 |
| 2010 | 10,771,525 | 24,315,822 | 88,889,226 | (4,913,035) | 16,722,974 | (5,543,596) | 0 |
| 2011 | 14,442,662 | 32,396,776 | 113,544,712 | (6,340,454) | 23,118,118 | (7,675,700) | 495,237 |
| 2012 | 13,351,350 | 30,196,854 | 105,701,725 | (2,424,628) | 16,734,927 | (8,836,129) | 0 |
| 2013 | 12,528,914 | 28,364,100 | 99,759,249 | (1,989,602) | 12,096,909 | (4,750,469) | 0 |
| 2014 | 7,269,863 | 16,449,531 | 57,538,052 | (1,305,981) | 5,142,181 | (1,023,443) | 138,077 |
| 2015 | 10,909,024 | 24,526,221 | 88,680,465 | (2,190,877) | 8,928,050 | (2,009,231) | 855,743 |
| 2016 | 16,592,821 | 37,177,453 | 137,291,060 | (7,658,808) | 23,675,180 | (8,562,408) | 0 |
| 2017 | 23,386,449 | 51,352,504 | 190,603,283 | (14,211,436) | 39,390,522 | (21,146,265) | 628,889 |
| 2018 | 14,109,739 | 31,359,543 | 115,112,008 | (5,257,621) | 19,778,000 | (6,327,347) | 0 |
| 2019 | 19,455,227 | 43,829,750 | 159,478,664 | (8,597,434) | 28,167,696 | (13,046,145) | 0 |
| 2020 | 20,647,311 | 47,117,741 | 172,789,272 | (12,041,624) | 30,729,326 | (15,292,295) | 0 |
| 2021 | 20,908,777 | 47,643,626 | 174,447,232 | (12,143,895) | 30,941,700 | (15,340,439) | 0 |
| 2022 | 21,753,762 | 49,587,466 | 181,639,154 | (10,814,556) | 27,568,434 | (13,693,711) | 0 |
| 2023 | 21,697,346 | 49,454,468 | 181,136,786 | (10,951,633) | 28,052,456 | (13,910,948) | 0 |
| 2024 | 21,280,997 | 48,489,221 | 177,545,219 | (10,498,532) | 26,720,839 | (13,224,081) | 0 |
| 2025 | 21,611,391 | 49,254,991 | 180,393,866 | (10,868,844) | 27,812,637 | (13,784,584) | 0 |
| 2026 | 21,105,686 | 48,082,955 | 176,034,150 | (10,588,921) | 26,984,830 | (13,360,186) | 0 |
| 2027 | 21,687,406 | 49,431,229 | 181,049,661 | (10,806,658) | 27,631,031 | (13,689,922) | 0 |
| 2028 | 21,265,778 | 48,453,948 | 177,414,004 | (10,689,486) | 27,279,241 | (13,512,149) | 0 |
| 2029 | 21,581,475 | 49,184,896 | 180,130,538 | (10,745,374) | 27,472,542 | (13,596,846) | 0 |
| 2030 | 21,147,962 | 48,181,087 | 176,399,683 | (10,639,027) | 27,125,758 | (13,435,831) | 0 |
| 2031 | 22,872,644 | 52,182,533 | 191,299,229 | (11,100,586) | 28,503,950 | (14,139,283) | 0 |
| 2032 | 20,360,589 | 46,358,727 | 169,629,498 | (10,306,791) | 26,120,336 | (12,930,207) | 0 |
| 2033 | 22,769,492 | 51,942,931 | 190,406,096 | (11,132,699) | 28,610,796 | (14,197,300) | 0 |
| 2034 | 20,534,009 | 46,758,837 | 171,111,599 | (10,421,066) | 26,499,430 | (13,107,794) | 0 |
| 2035 | 25,394,079 | 58,054,021 | 213,237,717 | (11,326,991) | 29,163,772 | (14,488,784) | 0 |
| TOTAL | 637,390,087 | 1,435,735,229 | 5,199,031,361 | (289,017,064) | 821,951,205 | (358,521,969) | 6,202,373 |

^aExcludes extra peaking costs assigned directly to contractors. Refer to Appendix B text discussion of Table B-17 under "Project Water Charges."^dThese values represent a proportionate allocation of the total variable OMP&R costs of pumping and recovery plants (Table B-3) associated with net annual withdrawals from storage for Project Transportation Facilities. The allocation is determined annually by applying the following ratio, calculated from the data shown in Table B-6: "Reservoir Storage Changes" (withdrawals, as a positive value) conveyed through each plant, divided by "Total" annual quantity conveyed through each plant, in acre-feet. The costs so determined are accumulated for all upstream plants for each year, for each respective reservoir.

TABLE B-12 Variable OMP&R Costs to be Reimbursed through Variable OMP&R Component of Transportation Charge^a (in dollars)

Sheet 3 of 4

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | |
|---------------|--------------------------------------|---------------------------------------|------------------------------------|---|---|---------------------------------------|--------------------------------|-------------------------------|
| | Reach 26A Devil Canyon Powerplant | Reach EBX2B Greenspot Pump Station | Reach EBX2E Citrus Pump Station | Reach EBX3A Crafton Hills Pump Station | Reach EBX4B Cherry Valley Pump Station | Reach 28J Lake Perris ^d | Reach 29A Oso Pumping Plant | Reach 29G Warne Powerplant |
| [16] | [17] | [18] | [19] | [20] | [21] | [22] | [23] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | (3,024) | 0 | 0 | 0 | 0 | 0 | 79,315 | 0 |
| 1973 | (461,268) | 0 | 0 | 0 | 0 | 0 | 122,787 | 0 |
| 1974 | (546,156) | 0 | 0 | 0 | 0 | 0 | 157,511 | 0 |
| 1975 | (1,095,523) | 0 | 0 | 0 | 0 | 0 | 314,636 | 0 |
| 1976 | (1,566,056) | 0 | 0 | 0 | 0 | 0 | 326,967 | 0 |
| 1977 | (1,222,866) | 0 | 0 | 0 | 0 | 0 | 75,335 | 0 |
| 1978 | (3,085,094) | 0 | 0 | 0 | 0 | 0 | 89,383 | 0 |
| 1979 | (3,466,481) | 0 | 0 | 0 | 0 | 0 | 102,584 | 0 |
| 1980 | (3,318,152) | 0 | 0 | 0 | 0 | 0 | 236,768 | 0 |
| 1981 | (3,842,971) | 0 | 0 | 0 | 0 | 0 | 444,280 | 0 |
| 1982 | (2,736,072) | 0 | 0 | 0 | 0 | 0 | 539,245 | (783,626) |
| 1983 | (5,478,830) | 0 | 0 | 0 | 0 | 0 | 214,069 | (1,488,439) |
| 1984 | (7,350,989) | 0 | 0 | 0 | 0 | 0 | 484,239 | (4,088,209) |
| 1985 | (10,748,103) | 0 | 0 | 0 | 0 | 0 | 874,069 | (5,930,176) |
| 1986 | (11,484,996) | 0 | 0 | 0 | 0 | 0 | 1,269,590 | (5,579,301) |
| 1987 | (10,814,483) | 0 | 0 | 0 | 0 | 53,242 | 1,323,472 | (6,292,822) |
| 1988 | (14,495,967) | 0 | 0 | 0 | 0 | 0 | 1,421,372 | (6,994,588) |
| 1989 | (18,688,631) | 0 | 0 | 0 | 0 | 0 | 2,046,005 | (8,368,716) |
| 1990 | (20,911,839) | 0 | 0 | 0 | 0 | 147,163 | 2,857,442 | (11,011,193) |
| 1991 | (4,884,013) | 0 | 0 | 0 | 0 | 0 | 535,456 | (3,604,791) |
| 1992 | (9,513,281) | 0 | 0 | 0 | 0 | (61,233) | 686,984 | (5,272,726) |
| 1993 | (7,502,549) | 0 | 0 | 0 | 0 | 0 | 51,327 | (3,380,473) |
| 1994 | (11,815,745) | 0 | 0 | 0 | 0 | 80,824 | 1,210,469 | (5,835,219) |
| 1995 | (9,742,248) | 0 | 0 | 0 | 0 | 0 | 151,109 | (1,179,155) |
| 1996 | (12,358,465) | 0 | 0 | 0 | 0 | 0 | 895,929 | (4,248,531) |
| 1997 | (13,293,791) | 0 | 0 | 0 | 0 | 111,776 | 897,657 | (4,797,589) |
| 1998 | (10,108,555) | 0 | 0 | 0 | 0 | 0 | (27,767) | (746,113) |
| 1999 | (14,952,833) | 0 | 0 | 0 | 0 | (41,318) | 680,911 | (5,341,364) |
| 2000 | (25,522,757) | 0 | 0 | 0 | 0 | (110,900) | 1,206,908 | (9,464,490) |
| 2001 | (19,510,278) | 0 | 0 | 0 | 0 | 0 | 6,074,627 | (7,614,510) |
| 2002 | (24,676,763) | 0 | 0 | 0 | 0 | 0 | 3,806,295 | (10,286,903) |
| 2003 | (27,490,216) | 0 | 0 | 0 | 0 | 1,149,466 | 4,337,249 | (9,899,070) |
| 2004 | (31,246,167) | 78,555 | 0 | 68,914 | 7,290 | 0 | 5,407,923 | (11,835,098) |
| 2005 | (28,682,474) | 69,542 | 0 | 48,909 | 2,544 | 5,151,512 | 3,422,443 | (6,683,632) |
| 2006 | (34,389,660) | 123,158 | 0 | 144,035 | 16,226 | 0 | 2,547,697 | (6,870,988) |
| 2007 | (28,529,045) | 248,624 | 0 | 256,311 | 11,163 | 589,896 | 6,194,273 | (9,522,236) |
| 2008 | (16,403,544) | 243,107 | 0 | 327,188 | 7,446 | 0 | 4,426,655 | (7,184,125) |
| 2009 | (13,474,182) | 360,336 | 0 | 391,227 | 7,528 | 418,654 | 4,329,365 | (6,578,744) |
| 2010 | (24,427,811) | 313,515 | 0 | 431,025 | 19,505 | 0 | 3,283,552 | (5,697,650) |
| 2011 | (31,980,782) | 371,784 | 0 | 499,615 | 33,108 | 0 | 3,277,052 | (5,505,320) |
| 2012 | (23,571,258) | 436,935 | 0 | 533,579 | 48,171 | 220,409 | 5,006,339 | (8,230,796) |
| 2013 | (14,097,814) | 488,293 | 0 | 571,363 | 41,120 | 0 | 6,320,329 | (8,740,718) |
| 2014 | (3,836,008) | 318,652 | 0 | 442,376 | 16,646 | 0 | 4,436,778 | (4,122,547) |
| 2015 | (6,410,003) | 343,191 | 0 | 458,377 | 15,061 | 765,726 | 6,819,812 | (6,280,593) |
| 2016 | (21,855,057) | 703,755 | 0 | 779,595 | 48,987 | 0 | 6,117,839 | (6,658,921) |
| 2017 | (37,596,036) | 370,687 | 1,050,626 | 1,235,058 | 86,107 | 7,964,346 | 5,175,240 | (5,788,402) |
| 2018 | (17,953,630) | 7,990 | 1,229,069 | 970,609 | 44,448 | 0 | 4,850,789 | (5,499,310) |
| 2019 | (27,229,300) | 1,149,558 | 792,704 | 551,211 | 62,992 | 0 | 6,167,919 | (6,950,803) |
| 2020 | (26,257,734) | 0 | 495,759 | 471,185 | 83,706 | 0 | 6,202,743 | (6,454,264) |
| 2021 | (26,325,887) | 0 | 536,349 | 471,501 | 83,762 | 0 | 6,271,842 | (6,515,578) |
| 2022 | (22,984,107) | 0 | 540,327 | 474,997 | 84,383 | 0 | 8,102,683 | (8,411,611) |
| 2023 | (23,645,025) | 0 | 541,668 | 476,176 | 84,593 | 0 | 7,841,817 | (8,138,085) |
| 2024 | (23,369,445) | 0 | 541,632 | 476,145 | 84,587 | 0 | 7,977,617 | (8,299,694) |
| 2025 | (23,252,256) | 0 | 541,754 | 476,252 | 84,606 | 0 | 7,851,940 | (8,165,709) |
| 2026 | (23,504,972) | 0 | 541,633 | 476,146 | 84,587 | 0 | 7,685,421 | (7,993,575) |
| 2027 | (23,367,257) | 0 | 541,783 | 476,278 | 84,611 | 0 | 8,002,824 | (8,322,875) |
| 2028 | (23,551,461) | 0 | 541,632 | 476,145 | 84,587 | 0 | 7,724,837 | (8,017,472) |
| 2029 | (23,302,518) | 0 | 542,211 | 476,654 | 84,678 | 0 | 7,959,639 | (8,252,590) |
| 2030 | (23,380,691) | 0 | 541,520 | 476,046 | 84,570 | 0 | 7,670,717 | (7,979,891) |
| 2031 | (23,449,215) | 0 | 541,870 | 476,354 | 84,624 | 0 | 8,879,337 | (9,237,536) |
| 2032 | (22,838,631) | 0 | 540,904 | 475,505 | 84,474 | 0 | 7,306,696 | (7,609,070) |
| 2033 | (24,115,602) | 0 | 541,893 | 476,374 | 84,628 | 0 | 8,709,452 | (9,059,537) |
| 2034 | (22,758,063) | 0 | 541,719 | 476,221 | 84,601 | 0 | 7,320,670 | (7,594,291) |
| 2035 | (24,374,133) | 0 | 541,608 | 476,124 | 84,584 | 0 | 11,897,677 | (12,376,885) |
| TOTAL | (1,054,848,763) | 5,627,681 | 11,686,661 | 15,317,495 | 1,819,922 | 16,439,563 | 238,676,139 | (366,786,550) |

^a Excludes extra peaking costs assigned directly to contractors. Refer to Appendix B text discussion of Table B-17 under "Project Water Charges."^d These values represent a proportionate allocation of the total variable OMP&R costs of pumping and recovery plants (Table B-3) associated with net annual withdrawals from storage for Project Transportation Facilities. The allocation is determined annually by applying the following ratio, calculated from the data shown in Table B-6: "Reservoir Storage Changes" (withdrawals, as a positive value) conveyed through each plant, divided by "Total" annual quantity conveyed through each plant, in acre-feet. The costs so determined are accumulated for all upstream plants for each year, for each respective reservoir.

TABLE B-12 Variable OMP&R Costs to be Reimbursed through Variable OMP&R Component of Transportation Charge^a (in dollars)

Sheet 4 of 4

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | Grand Total |
|---------------|---------------------------------|----------------------|---------------------------|---|---|----------------------|----------------------|
| | Reach 29H | Reach 29J | Reach 30 | Reach 31A | Reach 33A | Total | |
| | Pyramid Lake ^d | Castaic Powerplant | Castaic Lake ^d | Las Perillas and Badger Hill Pumping Plants | Devil's Den, Bluestone, and Polonio Pass Pumping Plants | [29] | |
| [24] | [25] | [26] | [27] | [28] | [29] | [30] | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 36,970 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 57,711 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 74,134 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 142,609 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 192,605 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 13,881 | 236,998 |
| 1968 | 0 | 0 | 0 | 118,676 | 0 | 774,253 | 1,117,913 |
| 1969 | 0 | 0 | 0 | 78,350 | 0 | 507,516 | 773,646 |
| 1970 | 0 | 0 | 0 | 136,429 | 0 | 693,842 | 1,103,798 |
| 1971 | 0 | 0 | 0 | 166,296 | 0 | 1,083,864 | 1,476,135 |
| 1972 | 0 | (211,144) | 0 | 237,638 | 0 | 2,494,486 | 3,107,622 |
| 1973 | 0 | (1,057,564) | 0 | 120,913 | 0 | 2,432,136 | 2,940,075 |
| 1974 | 0 | (1,547,884) | 0 | 118,582 | 0 | 3,107,972 | 3,691,020 |
| 1975 | 0 | (2,455,461) | 0 | 94,848 | 0 | 5,460,134 | 5,824,671 |
| 1976 | 0 | (2,827,557) | 0 | 141,260 | 0 | 7,621,469 | 8,213,686 |
| 1977 | 0 | (3,734,462) | 0 | 71,311 | 0 | 390,887 | 926,518 |
| 1978 | 0 | (1,542,479) | 0 | 179,925 | 0 | 6,714,161 | 7,322,208 |
| 1979 | 0 | (2,773,323) | 0 | 192,126 | 0 | 8,984,155 | 9,605,528 |
| 1980 | 0 | (3,408,863) | 0 | 168,458 | 0 | 9,882,560 | 10,425,874 |
| 1981 | 0 | (2,834,322) | 0 | 169,177 | 0 | 16,972,365 | 17,563,899 |
| 1982 | 0 | (3,463,971) | 0 | 168,390 | 0 | 12,859,335 | 13,477,272 |
| 1983 | 0 | (6,649,626) | 0 | 17,920 | 0 | (7,537,336) | (7,452,772) |
| 1984 | 0 | (4,710,802) | 0 | 112,679 | 0 | (4,435,856) | (4,159,491) |
| 1985 | 0 | (15,698,638) | 0 | 146,843 | 0 | (10,322,390) | (9,861,182) |
| 1986 | 0 | (11,072,448) | 0 | 297,886 | 0 | 10,793,124 | 11,622,736 |
| 1987 | 80,822 | (11,557,616) | (43,085) | 245,082 | 0 | 5,785,662 | 6,701,444 |
| 1988 | 54,038 | (12,295,001) | (210,845) | 214,519 | 0 | 5,286,197 | 6,239,206 |
| 1989 | 84,370 | (14,812,039) | 89,852 | 282,180 | 0 | 23,321,280 | 24,585,082 |
| 1990 | 0 | (20,116,741) | 245,034 | 416,832 | 0 | 46,159,454 | 48,154,174 |
| 1991 | 432,382 | (6,579,194) | 0 | 3,610 | 0 | 2,015,735 | 2,462,222 |
| 1992 | 29,879 | (9,167,653) | (1,141,229) | 101,665 | 0 | (5,884,783) | (5,509,967) |
| 1993 | (675,438) | (7,895,978) | (2,751,590) | (111,306) | 0 | (24,731,032) | (24,907,974) |
| 1994 | 0 | (10,565,940) | (81,262) | 206,086 | 0 | 12,583,232 | 13,500,210 |
| 1995 | 544,099 | (4,049,615) | 0 | 243,434 | 0 | (497,940) | (142,957) |
| 1996 | 0 | (8,457,232) | 0 | 296,170 | 0 | 15,023,644 | 15,870,542 |
| 1997 | 0 | (8,727,328) | (897) | 298,483 | 208,816 | 13,156,005 | 14,336,879 |
| 1998 | (965,988) | (3,360,851) | (2,139,549) | (55,491) | (92,902) | (24,248,768) | (24,405,949) |
| 1999 | 0 | (9,672,802) | 0 | 164,612 | 235,962 | (3,259,953) | (2,766,520) |
| 2000 | 0 | (17,958,033) | 0 | 229,350 | 378,042 | (8,198,096) | (7,179,264) |
| 2001 | 988,149 | (13,495,346) | 2,379,745 | 1,070,732 | 2,140,040 | 202,926,420 | 207,765,070 |
| 2002 | 0 | (18,455,025) | 0 | 544,053 | 1,351,160 | 86,147,416 | 88,828,837 |
| 2003 | 833,202 | (16,903,355) | 963,704 | 636,922 | 1,525,171 | 126,441,150 | 129,407,241 |
| 2004 | 222,007 | (21,110,644) | 685,188 | 672,547 | 1,778,968 | 141,056,166 | 144,109,359 |
| 2005 | 4,755,989 | (12,763,664) | 4,548,906 | 846,063 | 1,714,250 | 162,934,283 | 166,351,708 |
| 2006 | 529,631 | (11,822,176) | 6,080,609 | 851,002 | 1,427,165 | 128,791,477 | 132,062,976 |
| 2007 | 0 | (19,017,327) | 0 | 1,306,508 | 2,313,440 | 196,611,456 | 201,785,466 |
| 2008 | 0 | (14,961,833) | 1,323,734 | 1,129,209 | 1,735,641 | 124,862,871 | 129,123,540 |
| 2009 | 408,122 | (15,570,055) | 0 | 695,160 | 1,210,886 | 90,192,353 | 93,164,913 |
| 2010 | 0 | (10,738,810) | 0 | 902,164 | 1,484,357 | 137,057,594 | 140,020,385 |
| 2011 | 0 | (11,102,175) | 1,987,450 | 1,110,306 | 2,125,280 | 195,892,795 | 199,911,580 |
| 2012 | 179,887 | (15,133,885) | 0 | 975,147 | 1,967,288 | 168,650,238 | 172,640,715 |
| 2013 | 77,300 | (15,520,329) | 463,649 | 1,363,533 | 2,056,793 | 162,940,617 | 169,367,850 |
| 2014 | 0 | (7,773,330) | 2,190,203 | 1,571,144 | 2,121,223 | 101,524,540 | 106,660,064 |
| 2015 | 197,675 | (11,048,588) | 4,976,100 | 1,588,459 | 1,929,629 | 155,141,064 | 161,895,057 |
| 2016 | 428,311 | (11,849,796) | 10,834,559 | 1,529,089 | 3,040,755 | 239,314,458 | 244,402,445 |
| 2017 | 0 | (10,665,326) | 0 | 1,602,997 | 2,554,890 | 325,308,227 | 329,573,467 |
| 2018 | 1,878,345 | (9,835,493) | 121,003 | 1,925,149 | 3,568,530 | 202,148,564 | 208,759,278 |
| 2019 | 0 | (12,187,772) | 0 | 1,336,726 | 3,498,714 | 270,612,030 | 276,043,464 |
| 2020 | 0 | (11,008,600) | 0 | 1,158,772 | 3,934,910 | 286,275,154 | 292,735,150 |
| 2021 | 0 | (11,121,732) | 0 | 1,159,749 | 3,939,328 | 290,118,081 | 296,699,234 |
| 2022 | 0 | (13,564,035) | 0 | 779,140 | 5,144,451 | 309,849,951 | 315,935,152 |
| 2023 | 0 | (13,018,947) | 0 | 781,760 | 5,163,371 | 296,890,351 | 302,999,791 |
| 2024 | 0 | (13,250,963) | 0 | 781,709 | 5,163,029 | 292,739,701 | 298,848,738 |
| 2025 | 0 | (13,034,045) | 0 | 781,884 | 5,164,192 | 300,852,880 | 306,963,292 |
| 2026 | 0 | (12,753,859) | 0 | 781,711 | 5,163,040 | 287,745,406 | 293,854,455 |
| 2027 | 0 | (13,290,073) | 0 | 781,927 | 5,164,474 | 298,531,251 | 304,641,998 |
| 2028 | 0 | (12,820,871) | 0 | 781,710 | 5,163,036 | 292,344,515 | 298,453,559 |
| 2029 | 0 | (13,205,873) | 0 | 782,545 | 5,168,552 | 287,390,905 | 293,506,476 |
| 2030 | 0 | (12,731,595) | 0 | 781,547 | 5,161,961 | 291,763,111 | 297,870,885 |
| 2031 | 0 | (14,784,049) | 0 | 782,052 | 5,165,297 | 312,364,821 | 318,476,542 |
| 2032 | 0 | (12,127,634) | 0 | 780,659 | 5,156,093 | 290,026,187 | 296,279,407 |
| 2033 | 0 | (14,492,782) | 0 | 782,086 | 5,165,518 | 310,695,239 | 316,697,476 |
| 2034 | 0 | (12,132,667) | 0 | 781,835 | 5,163,860 | 281,104,913 | 287,214,933 |
| 2035 | 0 | (20,010,090) | 0 | 781,675 | 5,162,807 | 359,877,671 | 365,986,445 |
| TOTAL | 10,082,783 | (682,507,311) | 30,521,279 | 40,190,603 | 120,418,017 | 8,132,125,053 | 8,334,434,261 |

^aExcludes extra peaking costs assigned directly to contractors. Refer to Appendix B text discussion of Table B-17 under "Project Water Charges."^bThese values represent a proportionate allocation of the total variable OMP&R costs of pumping and recovery plants (Table B-3) associated with net annual withdrawals from storage for Project Transportation Facilities. The allocation is determined annually by applying the following ratio, calculated from the data shown in Table B-6: "Reservoir Storage Changes" (withdrawals, as a positive value) conveyed through each plant, divided by "Total" annual quantity conveyed through each plant, in acre-feet. The costs so determined are accumulated for all upstream plants for each year, for each respective reservoir.

TABLE B-13 Capital and Operating Costs of Project Conservation Facilities to be Reimbursed through Delta Water Charge (in dollars)

| Calendar Year | Initial Project Conservation Facilities (Portions of Upper Feather Lakes, Oroville-Thermalito, and California Aqueduct Facilities) | | | | | Planning and Pre-operating Costs ^{a,f} | Total |
|---------------|---|-----------------------------------|------------------------------|--|------------------------------|---|----------------------|
| | Capital Costs ^a | Capital Cost Credits ^b | Operating Costs ^c | Application of Oroville Power Revenues to: Capital Costs ^d | Operating Costs ^e | | |
| 1952 | [1] 171,322 | [2] 0 | [3] 0 | [4] 0 | [5] 0 | [6] 0 | [7] 171,322 |
| 1953 | 312,190 | 0 | 0 | 0 | 0 | 0 | 312,190 |
| 1954 | 308,624 | 0 | 0 | 0 | 0 | 0 | 308,624 |
| 1955 | 194,645 | 0 | 0 | 0 | 0 | 0 | 194,645 |
| 1956 | 1,357,077 | 0 | 0 | 0 | 0 | 0 | 1,357,077 |
| 1957 | 6,210,709 | 0 | 0 | 0 | 0 | 0 | 6,210,709 |
| 1958 | 9,510,916 | 0 | 0 | 0 | 0 | 0 | 9,510,916 |
| 1959 | 11,390,586 | 0 | 0 | 0 | 0 | 0 | 11,390,586 |
| 1960 | 14,463,274 | (4,850,000) | 0 | 0 | 0 | 0 | 9,613,274 |
| 1961 | 18,729,965 | (431,527) | 0 | 0 | 0 | 0 | 18,298,438 |
| 1962 | 9,099,967 | (479,280) | 0 | 0 | 0 | 0 | 8,620,687 |
| 1963 | 73,098,107 | (478,743) | (14,000) | 0 | 0 | 0 | 72,605,364 |
| 1964 | 62,629,003 | (751,330) | (14,000) | 0 | 0 | 107,780 | 61,971,453 |
| 1965 | 71,048,877 | (763,541) | (14,000) | 0 | 0 | 551,850 | 70,823,186 |
| 1966 | 125,376,541 | (748,649) | (14,000) | 0 | 0 | 1,081,023 | 125,694,915 |
| 1967 | 94,481,603 | (812,145) | (13,446) | 0 | 0 | 1,189,212 | 94,845,224 |
| 1968 | 39,986,145 | (431,574) | 1,303,821 | (951,000) | 0 | 793,399 | 40,700,791 |
| 1969 | 5,367,865 | (259,015) | 2,890,772 | (11,007,000) | 0 | 601,867 | (2,405,511) |
| 1970 | 4,208,411 | (203,733) | 4,818,634 | (14,650,000) | (1,500,000) | 516,659 | (6,810,029) |
| 1971 | 3,956,703 | (193,631) | 6,026,480 | (14,650,000) | (1,500,000) | 408,754 | (5,951,694) |
| 1972 | 4,662,255 | (196,361) | 5,393,011 | (14,650,000) | (1,500,000) | 287,374 | (6,003,721) |
| 1973 | 4,090,078 | (136,997) | 6,135,774 | (14,650,000) | (1,500,000) | 203,384 | (5,857,761) |
| 1974 | 6,852,718 | (137,503) | 6,944,723 | (17,950,000) | (1,500,000) | 201,907 | (5,588,155) |
| 1975 | 8,343,833 | (234,567) | 7,697,390 | (14,650,000) | (1,500,000) | 146,188 | (197,156) |
| 1976 | 6,189,618 | (204,944) | 7,067,037 | (14,650,000) | (1,500,000) | 205,234 | (2,893,055) |
| 1977 | 21,554,452 | (150,214) | 10,547,977 | (14,650,000) | (1,500,000) | 857,419 | 16,659,634 |
| 1978 | 8,031,393 | (64,566) | 12,851,158 | (14,650,000) | (1,500,000) | 2,131,286 | 6,799,271 |
| 1979 | 9,751,861 | 0 | 9,547,014 | (14,650,000) | (1,500,000) | 2,131,884 | 5,280,759 |
| 1980 | 11,345,574 | 0 | 13,258,298 | (14,650,000) | (1,500,000) | 3,638,851 | 12,092,723 |
| 1981 | 11,921,267 | 0 | 10,326,538 | (14,650,000) | (1,500,000) | 4,597,474 | 10,695,279 |
| 1982 | 17,479,059 | 0 | 16,154,872 | (14,650,000) | (1,500,000) | 4,594,682 | 22,078,613 |
| 1983 | 12,763,378 | 0 | 22,251,331 | (34,705,000) | (8,735,000) | 3,751,993 | (4,673,298) |
| 1984 | 9,367,268 | 0 | 22,700,224 | (14,650,000) | (10,348,000) | 2,979,126 | 10,048,618 |
| 1985 | 12,538,173 | 0 | 23,462,283 | (14,650,000) | (8,198,000) | 2,069,024 | 15,221,480 |
| 1986 | 21,586,488 | 0 | 26,479,379 | (14,650,000) | (9,107,000) | 1,602,419 | 25,911,286 |
| 1987 | 32,734,633 | 0 | 23,479,839 | (14,650,000) | (9,451,000) | 1,762,179 | 33,875,651 |
| 1988 | 33,028,679 | 0 | 25,832,491 | (14,650,000) | (8,677,000) | 1,808,899 | 37,343,069 |
| 1989 | 11,075,132 | 0 | 28,442,946 | (14,650,000) | (8,102,000) | 2,678,007 | 19,444,085 |
| 1990 | 28,764,328 | 0 | 37,430,776 | (14,650,000) | (8,498,000) | 1,436,712 | 44,483,816 |
| 1991 | 37,462,303 | 0 | 76,586,450 | (14,650,000) | (9,487,000) | 1,727,664 | 91,639,417 |
| 1992 | 29,169,134 | 0 | 32,280,229 | (14,650,000) | (8,526,000) | 1,707,822 | 39,981,185 |
| 1993 | 22,366,873 | 0 | 36,884,103 | (14,650,000) | (8,768,000) | 1,708,490 | 37,541,465 |
| 1994 | 14,709,626 | 0 | 41,193,693 | (14,650,000) | (7,484,000) | 2,134,392 | 35,903,711 |
| 1995 | 15,120,856 | 0 | 46,162,374 | (14,650,000) | (4,976,939) | 2,042,481 | 43,698,773 |
| 1996 | 11,010,436 | 0 | 50,885,567 | (14,650,000) | (5,503,289) | 2,448,692 | 44,191,406 |
| 1997 | 15,288,268 | 0 | 51,788,497 | (14,650,000) | (5,740,515) | 1,699,730 | 48,385,980 |
| 1998 | 3,873,965 | 0 | 54,726,293 | (14,650,000) | (8,155,000) | 1,193,198 | 36,988,456 |
| 1999 | 7,775,586 | 0 | 56,095,722 | (14,650,000) | (9,198,000) | 9,686 | 40,032,994 |
| 2000 | 10,856,907 | 0 | 56,042,129 | (14,688,338) | (10,297,482) | 13,491 | 41,926,707 |
| 2001 | 10,957,862 | 0 | 75,778,041 | (16,223,803) | (14,328,482) | 23,866 | 56,207,483 |
| 2002 | 20,399,495 | 0 | 67,977,990 | (19,498,891) | (20,826,560) | 24,426 | 48,076,459 |
| 2003 | 23,668,361 | 0 | 77,724,424 | (20,605,664) | (29,982,088) | 9,833 | 50,814,866 |
| 2004 | 21,662,410 | 0 | 91,159,331 | (17,530,688) | (35,845,422) | 7,548 | 59,453,179 |
| 2005 | 6,620,781 | 0 | 104,208,826 | (15,354,462) | (22,004,805) | 0 | 73,470,340 |
| 2006 | 11,457,811 | 0 | 102,690,441 | (15,210,585) | (21,412,577) | 0 | 77,525,090 |
| 2007 | 8,471,999 | 0 | 87,537,371 | (14,734,855) | (17,033,961) | 0 | 64,240,553 |
| 2008 | 7,375,547 | 0 | 105,309,916 | (14,968,129) | (19,570,602) | 0 | 78,146,733 |
| 2009 | 7,616,747 | 0 | 114,572,850 | (15,959,419) | (20,921,647) | 0 | 85,308,530 |
| 2010 | 8,255,941 | 0 | 123,285,802 | (15,958,194) | (20,222,025) | 0 | 95,361,524 |
| 2011 | 13,245,361 | 0 | 127,415,861 | (15,958,715) | (19,207,013) | 0 | 105,495,494 |
| 2012 | 28,044,730 | 0 | 127,004,922 | (16,032,565) | (22,105,563) | 0 | 116,911,523 |
| 2013 | 101,203,243 | 0 | 136,220,114 | (16,034,532) | (20,672,157) | 0 | 200,716,668 |
| 2014 | 83,040,694 | 0 | 147,334,398 | (15,841,275) | (17,712,411) | 0 | 196,821,407 |
| 2015 | 41,611,284 | 0 | 151,992,684 | (20,657,953) | (17,587,782) | 0 | 155,358,233 |
| 2016 | 85,056,832 | 0 | 190,320,177 | (20,646,145) | (16,898,173) | 0 | 237,832,691 |
| 2017 | 213,371,145 | 0 | 160,519,750 | (21,072,456) | (19,503,596) | 0 | 333,314,843 |
| 2018 | 263,507,694 | 0 | 200,853,647 | (23,135,691) | (21,101,688) | 0 | 420,123,963 |
| 2019 | 201,091,075 | 0 | 210,524,155 | (30,140,585) | (30,400,526) | 0 | 351,074,119 |
| 2020 | 257,541,148 | 0 | 210,237,998 | (37,543,470) | (28,942,185) | 0 | 401,293,491 |
| 2021 | 168,471,967 | 0 | 211,750,291 | (39,405,080) | (29,078,861) | 0 | 311,738,317 |
| 2022 | 420,087 | 0 | 220,950,788 | (40,799,587) | (30,546,054) | 0 | 150,025,233 |
| 2023 | 420,087 | 0 | 205,214,042 | (41,191,839) | (30,843,740) | 0 | 133,598,550 |
| 2024 | 420,087 | 0 | 209,130,558 | (40,868,125) | (31,144,403) | 0 | 137,538,117 |
| 2025 | 420,087 | 0 | 207,680,174 | (41,100,856) | (31,448,072) | 0 | 135,551,332 |
| 2026 | 420,087 | 0 | 213,680,578 | (40,927,159) | (31,754,778) | 0 | 141,418,727 |
| 2027 | 420,087 | 0 | 209,498,976 | (40,916,010) | (32,064,552) | 0 | 136,938,501 |
| 2028 | 420,087 | 0 | 217,827,407 | (40,931,079) | (32,377,423) | 0 | 144,938,992 |
| 2029 | 420,087 | 0 | 210,082,331 | (40,805,207) | (32,693,422) | 0 | 137,003,788 |
| 2030 | 420,087 | 0 | 223,239,721 | (47,432,970) | (33,012,582) | 0 | 143,214,256 |
| 2031 | 420,087 | 0 | 218,336,016 | (47,430,994) | (33,334,933) | 0 | 137,990,176 |
| 2032 | 420,087 | 0 | 236,739,254 | (47,603,735) | (33,660,508) | 0 | 155,895,097 |
| 2033 | 420,087 | 0 | 221,555,664 | (47,580,556) | (33,989,338) | 0 | 140,405,857 |
| 2034 | 420,087 | 0 | 227,851,735 | (47,568,571) | (34,321,457) | 0 | 146,381,794 |
| 2035 | 420,087 | 0 | 230,437,094 | (47,548,517) | (34,656,897) | 0 | 148,651,767 |
| TOTAL | 2,580,170,014 | (11,528,320) | 6,710,261,706 | (1,524,719,702) | (1,089,958,512) | 57,085,905 | 6,721,311,091 |

^a Reimbursed through the capital cost component of the Delta Water Charge.^b Negotiated settlements as to the magnitude of SWP planning costs from 1952 through 1978.^c Reimbursed through the minimum OMP&R component of the Delta Water Charge. Credits for Gianelli Pumping-Generating Plant power generation are reflected in these net costs.^d Revenues credited through the capital cost component of the Delta Water Charge.^e Revenues credited through the minimum OMP&R component of the Delta Water Charge.^f Under amendments of Articles 22(e) and 22(g), planning and pre-operating costs of additional Project Conservation Facilities incurred through the previous year reflected in the Delta Water Charge.

Tables B-14 through B-31

Note: Where applicable, the projected data values shown in this appendix are shaded and the bill year data are in **bold** type.

TABLE B-14 Capital Costs of Transportation Facilities Allocated to Each Contractor (in dollars)

Sheet 1 of 4

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA | | | | CENTRAL COASTAL AREA | | |
|---------------|-------------------|---------------------|--------------------|-------------------|-------------------|--------------------|--------------------|----------------------|--------------------|--------------------|
| | Napa | Solano ^a | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | |
| 1952 | 0 | 0 | 0 | 83 | 114 | 410 | 608 | 122 | 224 | 346 |
| 1953 | 0 | 0 | 0 | 323 | 479 | 1,808 | 2,610 | 336 | 620 | 956 |
| 1954 | 0 | 0 | 0 | 819 | 1,306 | 5,150 | 7,275 | 421 | 777 | 1,199 |
| 1955 | 0 | 0 | 0 | 977 | 1,570 | 6,297 | 8,844 | 211 | 390 | 601 |
| 1956 | 0 | 0 | 0 | 8,844 | 14,459 | 63,816 | 87,120 | 227 | 418 | 645 |
| 1957 | 15,199 | 11,436 | 26,634 | 21,564 | 35,240 | 649,596 | 706,401 | 291 | 536 | 827 |
| 1958 | 33,420 | 16,591 | 50,011 | 67,764 | 71,717 | 733,414 | 872,896 | 720 | 1,328 | 2,048 |
| 1959 | 20,697 | 6,591 | 27,288 | 154,255 | 143,730 | 493,050 | 791,035 | 10,636 | 69,139 | 79,775 |
| 1960 | 9,097 | 8,830 | 17,927 | 296,492 | 275,610 | 1,018,661 | 1,590,763 | 15,255 | 99,794 | 115,048 |
| 1961 | 6,950 | 7,445 | 14,395 | 853,506 | 802,675 | 1,914,709 | 3,570,890 | 10,163 | 36,681 | 46,843 |
| 1962 | (194) | (926) | (1,120) | 545,123 | 615,141 | 1,686,041 | 2,846,306 | 17,281 | 39,570 | 56,851 |
| 1963 | 1,319 | 1,111 | 2,430 | 657,426 | 1,281,271 | 3,243,838 | 5,182,534 | 68,821 | 140,841 | 209,662 |
| 1964 | 38,393 | 35,466 | 73,859 | 712,650 | 1,747,783 | 7,251,800 | 9,712,233 | 138,614 | 282,003 | 420,617 |
| 1965 | 198,833 | 62,221 | 261,054 | 360,779 | 606,025 | 3,414,457 | 4,381,262 | 250,706 | 497,152 | 747,859 |
| 1966 | 461,619 | 49,917 | 511,536 | 592,714 | 592,598 | 2,245,215 | 3,430,528 | 587,951 | 1,117,486 | 1,705,437 |
| 1967 | 1,569,498 | 40,379 | 1,609,877 | 796,995 | 803,951 | 2,401,862 | 4,002,808 | 936,412 | 1,762,694 | 2,699,106 |
| 1968 | 859,613 | 61,691 | 921,304 | 736,470 | 696,075 | 1,997,924 | 3,430,469 | 351,131 | 675,220 | 1,026,351 |
| 1969 | 74,388 | 59,318 | 133,706 | 269,698 | 293,275 | 764,950 | 1,327,923 | 76,966 | 164,583 | 241,550 |
| 1970 | 43,361 | 67,877 | 111,238 | 58,676 | 61,200 | 135,569 | 255,445 | 47,891 | 109,224 | 157,115 |
| 1971 | 26,763 | 34,052 | 60,815 | 12,086 | 18,227 | 84,089 | 114,402 | 28,638 | 80,715 | 109,353 |
| 1972 | 19,643 | 18,905 | 38,548 | 12,293 | 12,763 | 63,610 | 88,666 | 19,289 | 50,230 | 69,519 |
| 1973 | 56,510 | 30,874 | 87,384 | 10,494 | 12,136 | 39,380 | 62,010 | 23,010 | 56,178 | 79,189 |
| 1974 | 165,830 | 65,832 | 231,662 | 15,722 | 24,402 | 73,119 | 113,243 | 25,037 | 61,383 | 86,420 |
| 1975 | 91,824 | 89,234 | 181,058 | 16,730 | 15,806 | 41,394 | 73,930 | 14,740 | 61,416 | 76,156 |
| 1976 | 57,765 | 83,651 | 141,416 | 34,004 | 34,663 | 109,610 | 178,277 | 33,638 | 130,440 | 164,078 |
| 1977 | 64,167 | 80,147 | 144,314 | 46,229 | 45,115 | 133,375 | 224,720 | 108,324 | 264,720 | 373,044 |
| 1978 | 69,319 | 81,717 | 151,036 | 71,234 | 66,008 | 174,898 | 312,140 | 21,415 | 103,822 | 125,237 |
| 1979 | 191,273 | 282,907 | 474,180 | 45,468 | 42,943 | 110,665 | 199,077 | 22,941 | 125,669 | 148,610 |
| 1980 | 264,433 | 386,006 | 650,439 | 134,522 | 124,352 | 304,614 | 563,488 | 103,258 | 462,895 | 566,153 |
| 1981 | 227,606 | 383,086 | 610,692 | (33,738) | (29,856) | (65,637) | (129,231) | (15,416) | (135,240) | (150,656) |
| 1982 | 549,164 | 870,611 | 1,419,775 | 7,876 | 8,321 | 27,065 | 43,262 | 4,102 | (58,882) | (54,780) |
| 1983 | 1,254,900 | 1,433,061 | 2,687,961 | 138,413 | 131,515 | 339,246 | 609,175 | 32,196 | 110,287 | 142,483 |
| 1984 | 2,547,878 | 2,750,040 | 5,297,918 | 152,992 | 140,971 | 351,921 | 645,884 | 35,448 | 107,723 | 143,171 |
| 1985 | 7,143,123 | 6,443,613 | 13,586,736 | 19,776 | 19,245 | 53,491 | 92,512 | 17,424 | 78,896 | 96,319 |
| 1986 | 10,565,937 | 16,926,630 | 27,492,567 | 32,034 | 31,581 | 88,070 | 151,684 | 44,135 | 306,452 | 350,588 |
| 1987 | 7,979,832 | 12,599,507 | 20,579,339 | 50,153 | 48,675 | 138,959 | 237,787 | 126,995 | 1,342,116 | 1,469,110 |
| 1988 | 2,312,909 | 4,343,513 | 6,656,422 | 116,181 | 112,294 | 302,461 | 530,935 | 156,473 | 1,479,545 | 1,636,018 |
| 1989 | 1,224,538 | 1,553,352 | 2,777,890 | 108,320 | 102,804 | 260,092 | 471,217 | 152,173 | 1,210,940 | 1,363,112 |
| 1990 | 443,002 | 824,055 | 1,267,057 | 224,283 | 224,188 | 625,213 | 1,073,684 | 222,208 | 1,559,457 | 1,781,665 |
| 1991 | 99,848 | 89,269 | 189,117 | 413,426 | 383,368 | 946,246 | 1,743,040 | 298,398 | 2,184,088 | 2,482,487 |
| 1992 | 57,045 | 62,083 | 119,128 | 182,231 | 169,968 | 442,055 | 794,255 | 361,210 | 3,504,755 | 3,865,965 |
| 1993 | 122,423 | 128,634 | 251,057 | 129,344 | 125,312 | 342,416 | 597,071 | 1,170,649 | 11,997,953 | 13,168,602 |
| 1994 | 71,274 | 83,270 | 154,544 | 46,042 | 58,050 | 229,649 | 333,741 | 4,260,734 | 46,401,596 | 50,662,331 |
| 1995 | 30,605 | 29,271 | 59,876 | 97,808 | 97,063 | 257,484 | 452,355 | 12,268,787 | 155,255,850 | 167,524,637 |
| 1996 | 20,275 | 19,069 | 39,344 | 49,854 | 48,056 | 127,493 | 225,403 | 11,284,548 | 145,409,410 | 156,693,959 |
| 1997 | 20,039 | 107,784 | 127,823 | 82,598 | 78,996 | 209,517 | 371,111 | 3,184,506 | 38,158,718 | 41,343,224 |
| 1998 | 17,423 | 21,572 | 38,995 | 27,302 | 24,121 | 63,057 | 114,480 | 883,110 | 10,563,359 | 11,446,469 |
| 1999 | 67,602 | 106,355 | 173,957 | 74,165 | 73,552 | 208,296 | 356,013 | 928,738 | 9,596,058 | 10,524,796 |
| 2000 | 16,252 | 37,932 | 54,185 | 27,445 | 28,844 | 80,346 | 136,635 | 488,160 | 5,529,102 | 6,017,261 |
| 2001 | 6,598 | 13,750 | 20,347 | 140,394 | 270,055 | 1,856,845 | 2,267,294 | 72,358 | 539,206 | 611,564 |
| 2002 | 19,917 | 45,940 | 65,857 | 809,721 | 1,193,494 | 5,886,086 | 7,889,301 | 69,122 | 387,295 | 456,418 |
| 2003 | 54,235 | 20,712 | 74,947 | 1,157,357 | 1,331,716 | 4,620,228 | 7,109,301 | 19,610 | 118,117 | 137,728 |
| 2004 | 153,240 | 20,534 | 173,774 | 360,395 | 346,065 | 4,106,509 | 4,812,969 | 12,286 | 52,406 | 64,692 |
| 2005 | 60,543 | 62,997 | 123,541 | 358,153 | 339,995 | 1,541,971 | 2,240,119 | (1,979) | (161,490) | (163,469) |
| 2006 | 887,892 | 20,086 | 907,978 | 349,395 | 329,656 | 801,023 | 1,480,075 | 8,438 | 65,059 | 73,497 |
| 2007 | 3,237,236 | 43,135 | 3,280,372 | 793,095 | 732,240 | 1,756,072 | 3,281,407 | 16,262 | 84,170 | 100,432 |
| 2008 | 7,903,036 | 61,877 | 7,964,914 | 1,466,734 | 1,352,530 | 3,236,019 | 6,055,283 | 28,452 | 99,415 | 127,867 |
| 2009 | 1,196,389 | 18,516 | 1,214,905 | 2,984,936 | 2,797,462 | 6,670,882 | 12,453,281 | 8,700 | 49,599 | 58,300 |
| 2010 | 396,691 | 3,243 | 399,934 | 3,858,678 | 3,511,644 | 8,785,770 | 16,156,093 | 75,709 | 136,242 | 211,951 |
| 2011 | 192,850 | 40,149 | 232,999 | 4,038,267 | 3,836,600 | 9,247,564 | 17,122,431 | 109,860 | 232,486 | 342,346 |
| 2012 | 485,208 | 426,760 | 911,967 | 2,717,470 | 2,649,415 | 6,713,706 | 12,080,591 | 76,346 | 336,174 | 412,520 |
| 2013 | 652,391 | 679,649 | 1,332,041 | 1,160,446 | 1,251,281 | 3,887,891 | 6,299,619 | 259,660 | 1,274,653 | 1,534,313 |
| 2014 | 587,364 | 658,937 | 1,246,300 | (252,836) | (174,519) | (198,598) | (625,953) | 334,653 | 1,564,639 | 1,899,292 |
| 2015 | 187,630 | 266,930 | 454,560 | 956,892 | 547,412 | 1,373,109 | 2,877,413 | 254,063 | 1,367,708 | 1,621,771 |
| 2016 | 88,532 | 162,844 | 251,375 | 286,716 | 175,035 | 433,462 | 895,213 | 268,119 | 1,151,612 | 1,419,732 |
| 2017 | 26,944 | 98,292 | 125,236 | 217,034 | 152,879 | 467,134 | 837,047 | 304,526 | 1,074,868 | 1,379,393 |
| 2018 | 24,552 | 60,120 | 84,672 | 818,056 | 487,405 | 1,252,308 | 2,557,769 | 346,629 | 741,134 | 1,087,763 |
| 2019 | 67,247 | 134,616 | 201,863 | 823,340 | 427,127 | 1,736,075 | 2,986,542 | 700,001 | 1,788,416 | 2,488,417 |
| 2020 | 304,543 | 308,516 | 613,059 | 1,067,476 | 631,430 | 2,460,970 | 4,159,877 | 754,366 | 3,951,634 | 4,706,000 |
| 2021 | 1,268,840 | 3,353,304 | 4,622,143 | 1,267,658 | 737,390 | 2,529,994 | 4,535,041 | 1,178,933 | 5,534,260 | 6,713,194 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 56,913,270 | 56,894,887 | 113,808,158 | 33,859,826 | 33,244,014 | 103,355,783 | 170,459,623 | 43,715,135 | 461,385,935 | 505,101,069 |

Note: Allocated capital costs as a result of permanent water transfers under the Monterey Amendment are not reflected in this table.

^a Costs from Table B-10 allocated to Solano County Water Agency are reduced herein by \$2,102,700 in 1986 and \$1,823,500 in 1987 under provisions of Amendment 10 to its water supply contract.

TABLE B-14 Capital Costs of Transportation Facilities Allocated to Each Contractor (in dollars)

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | | | | |
|---------------|-------------------------|---------------------|--------------------------------------|--------------------------|---------------------------------------|--------------------|----------------|----------------|-------------------|--------------------|-------|
| | Dudley Ridge | Empire ^b | Future Contractor San Joaquin Valley | Kern | | | Agricultural | Kings | Oak Flat | Tulare | Total |
| | | | | Municipal and Industrial | Municipal and Industrial ^c | [16] | | | | | |
| 1952 | 389 | 20 | 58 | 938 | 119 | 9,129 | 20 | 12 | 785 | 11,470 | |
| 1953 | 1,076 | 53 | 161 | 2,887 | 345 | 27,383 | 55 | 33 | 2,157 | 34,150 | |
| 1954 | 1,350 | 68 | 201 | 3,373 | 417 | 32,369 | 69 | 43 | 2,718 | 40,608 | |
| 1955 | 677 | 34 | 101 | 1,497 | 197 | 14,721 | 35 | 23 | 1,371 | 18,656 | |
| 1956 | 726 | 34 | 108 | 2,702 | 273 | 24,255 | 35 | 25 | 1,416 | 29,575 | |
| 1957 | 932 | 38 | 139 | 6,048 | 494 | 49,932 | 39 | 29 | 1,707 | 59,359 | |
| 1958 | 2,308 | 102 | 344 | 14,374 | 1,153 | 119,049 | 104 | 61 | 4,368 | 141,862 | |
| 1959 | 7,384 | 364 | 2,517 | 26,218 | 2,597 | 253,891 | 372 | 381 | 14,757 | 308,481 | |
| 1960 | 12,940 | 630 | 3,666 | 34,054 | 4,155 | 352,166 | 644 | 498 | 25,696 | 434,448 | |
| 1961 | 21,848 | 1,063 | 3,954 | 51,407 | 6,500 | 538,707 | 1,087 | 598 | 43,377 | 668,542 | |
| 1962 | 49,320 | 2,410 | 7,867 | 94,933 | 13,834 | 1,017,146 | 2,465 | 1,879 | 98,141 | 1,287,996 | |
| 1963 | 208,757 | 10,687 | 32,172 | 364,014 | 55,715 | 3,934,636 | 10,932 | 5,990 | 425,330 | 5,048,232 | |
| 1964 | 328,286 | 16,961 | 64,890 | 600,152 | 88,904 | 6,636,279 | 17,350 | 11,942 | 672,013 | 8,436,776 | |
| 1965 | 538,215 | 27,481 | 117,996 | 1,098,999 | 152,930 | 11,999,892 | 28,116 | 21,802 | 1,095,126 | 15,080,557 | |
| 1966 | 1,107,757 | 52,586 | 279,172 | 2,218,832 | 339,222 | 24,857,487 | 53,789 | 38,891 | 2,173,090 | 31,120,826 | |
| 1967 | 852,537 | 39,537 | 445,562 | 2,012,744 | 286,990 | 23,629,026 | 40,444 | 34,775 | 1,653,429 | 28,995,045 | |
| 1968 | 198,739 | 9,739 | 166,267 | 1,104,132 | 70,086 | 11,544,942 | 9,962 | 12,238 | 396,075 | 13,512,180 | |
| 1969 | 94,436 | 4,793 | 35,473 | 616,516 | 27,216 | 6,416,147 | 4,903 | 7,302 | 191,574 | 7,398,361 | |
| 1970 | 54,344 | 2,720 | 21,686 | 414,659 | 15,520 | 4,145,046 | 2,782 | 3,999 | 109,470 | 4,770,226 | |
| 1971 | 25,462 | 1,291 | 12,094 | 190,552 | 7,114 | 1,622,274 | 1,320 | 540 | 51,618 | 1,912,264 | |
| 1972 | 11,589 | 589 | 8,354 | 82,886 | 3,409 | 723,623 | 602 | 343 | 23,526 | 854,921 | |
| 1973 | 6,657 | 335 | 10,201 | 39,973 | 1,980 | 458,527 | 343 | 221 | 13,448 | 531,685 | |
| 1974 | 9,478 | 469 | 11,044 | 45,420 | 2,766 | 483,866 | 479 | 326 | 18,979 | 572,828 | |
| 1975 | 13,329 | 677 | 5,246 | 36,467 | 3,710 | 382,743 | 692 | 425 | 27,048 | 470,338 | |
| 1976 | 17,506 | 837 | 12,615 | 53,085 | 5,621 | 654,026 | 856 | 1,152 | 34,455 | 780,152 | |
| 1977 | 9,672 | 436 | 47,790 | 36,478 | 3,753 | 886,672 | 446 | 494 | 18,497 | 1,004,236 | |
| 1978 | 23,499 | (30,406) | 6,178 | 54,219 | 6,579 | 575,169 | 1,209 | 1,402 | 47,446 | 685,296 | |
| 1979 | 25,051 | 1,295 | 5,664 | 53,866 | 6,610 | 559,746 | 1,325 | 1,862 | 51,293 | 706,711 | |
| 1980 | 144,980 | (4,617) | 31,160 | 321,890 | 38,126 | 3,211,810 | 7,682 | 7,144 | 297,215 | 4,055,391 | |
| 1981 | (5,427) | (15,464) | 200 | (44,773) | (1,223) | (385,275) | (296) | 1,752 | (11,324) | (461,830) | |
| 1982 | 49,916 | 2,584 | 6,600 | 83,283 | 13,142 | 654,692 | 2,638 | 1,252 | 102,287 | 916,395 | |
| 1983 | 52,429 | (35,295) | 12,125 | 110,465 | 13,872 | 1,073,500 | 2,769 | 1,327 | 107,337 | 1,338,529 | |
| 1984 | 86,345 | 4,474 | 14,303 | 154,799 | 22,764 | 1,617,225 | 4,572 | 2,678 | 177,020 | 2,084,180 | |
| 1985 | 25,435 | 1,311 | 5,649 | 47,055 | 6,766 | 484,485 | 1,341 | 1,176 | 52,013 | 625,231 | |
| 1986 | 38,309 | (41,067) | 9,862 | 71,661 | 10,320 | 796,097 | 2,009 | 778 | 78,142 | 966,110 | |
| 1987 | 28,769 | 1,476 | 7,004 | 55,537 | 7,969 | 616,845 | 1,509 | 1,491 | 58,679 | 779,279 | |
| 1988 | 52,329 | 2,831 | 17,078 | 70,572 | 12,049 | 909,046 | 2,894 | 4,620 | 109,713 | 1,181,132 | |
| 1989 | 156,099 | 8,019 | 27,551 | 352,103 | 42,943 | 3,834,481 | 8,201 | 12,134 | 318,604 | 4,760,133 | |
| 1990 | 292,361 | 15,142 | 50,360 | 553,394 | 87,199 | 6,094,021 | 15,487 | 22,729 | 599,233 | 7,729,927 | |
| 1991 | 349,413 | 18,103 | 60,419 | 580,572 | 91,765 | 6,447,565 | 18,515 | 23,486 | 716,292 | 8,306,130 | |
| 1992 | 125,891 | 6,439 | 28,019 | 241,559 | 34,559 | 2,711,639 | 6,585 | 10,883 | 256,370 | 3,421,943 | |
| 1993 | 86,113 | 4,375 | 30,245 | 174,630 | 23,840 | 2,059,168 | 4,474 | 4,698 | 174,772 | 2,562,314 | |
| 1994 | 64,762 | 3,323 | 23,894 | 124,518 | 17,633 | 1,488,418 | 3,398 | 2,173 | 132,095 | 1,860,213 | |
| 1995 | 82,969 | (1,000) | 72,734 | 167,698 | 24,390 | 2,472,332 | 4,355 | 2,824 | 169,318 | 2,995,621 | |
| 1996 | 27,611 | (61,913) | 51,990 | 68,870 | 8,812 | 1,233,548 | 1,437 | 1,590 | 56,092 | 1,388,037 | |
| 1997 | 136,503 | 7,041 | 48,721 | 241,400 | 36,417 | 2,951,687 | 7,195 | 3,706 | 279,205 | 3,711,875 | |
| 1998 | 70,737 | (121,004) | 23,083 | 122,934 | 18,622 | 1,474,568 | 3,742 | 1,278 | 144,963 | 1,738,923 | |
| 1999 | 81,197 | 4,192 | 26,645 | 142,983 | 21,661 | 1,715,933 | 4,285 | 3,846 | 166,160 | 2,166,903 | |
| 2000 | 21,089 | 1,073 | 9,822 | 45,704 | 6,013 | 547,927 | 1,096 | (1,081) | 42,826 | 674,466 | |
| 2001 | 17,776 | 907 | 7,862 | 36,078 | 5,062 | 432,671 | 927 | 781 | 36,153 | 538,217 | |
| 2002 | 93,258 | 4,801 | 18,852 | 163,537 | 25,021 | 1,835,443 | 4,909 | 1,470 | 190,549 | 2,337,839 | |
| 2003 | 19,993 | 1,020 | 5,083 | 37,987 | 5,481 | 435,030 | 1,038 | 422 | 40,670 | 546,724 | |
| 2004 | 18,558 | 958 | 4,113 | 34,437 | 4,911 | 374,948 | 980 | 1,518 | 37,972 | 478,394 | |
| 2005 | 56,091 | 2,902 | 9,832 | 96,815 | 14,744 | 1,025,877 | 2,964 | 561 | 114,896 | 1,324,682 | |
| 2006 | 10,670 | 551 | 1,947 | 30,110 | 2,812 | 197,248 | 564 | 732 | 21,841 | 266,475 | |
| 2007 | 15,261 | 772 | 4,166 | 36,509 | 4,188 | 324,461 | 789 | 921 | 30,898 | 417,965 | |
| 2008 | 62,504 | 3,233 | 11,391 | 104,213 | 16,434 | 1,151,588 | 3,304 | 2,079 | 128,030 | 1,482,775 | |
| 2009 | 15,005 | 764 | 3,218 | 48,244 | 4,067 | 302,002 | 782 | 996 | 30,490 | 405,567 | |
| 2010 | 27,175 | 1,409 | 36,027 | 67,589 | 7,106 | 847,559 | 1,442 | 317 | 55,738 | 1,044,363 | |
| 2011 | 36,668 | 1,898 | 50,584 | 71,528 | 9,661 | 1,181,522 | 1,941 | 1,449 | 75,133 | 1,430,383 | |
| 2012 | 42,554 | 2,101 | 23,353 | 90,014 | 11,882 | 1,139,946 | 2,149 | 3,019 | 85,122 | 1,400,140 | |
| 2013 | 187,114 | 9,352 | 70,303 | 385,659 | 53,496 | 4,595,517 | 9,566 | 13,022 | 376,622 | 5,700,651 | |
| 2014 | 197,108 | 10,063 | 95,832 | 366,806 | 53,569 | 4,667,168 | 10,296 | 15,319 | 401,027 | 5,817,187 | |
| 2015 | 125,247 | 6,369 | 60,552 | 255,917 | 34,316 | 3,052,622 | 6,515 | 11,412 | 254,317 | 3,807,266 | |
| 2016 | 157,523 | 8,002 | 83,712 | 512,231 | 42,771 | 6,280,917 | 8,183 | 6,108 | 319,678 | 7,419,125 | |
| 2017 | 244,284 | 12,589 | 110,841 | 437,010 | 65,094 | 5,610,265 | 12,873 | 13,173 | 499,423 | 7,005,553 | |
| 2018 | 340,599 | 17,595 | 158,758 | 598,739 | 90,598 | 7,739,864 | 18,000 | 7,038 | 697,191 | 9,668,384 | |
| 2019 | 354,914 | 18,099 | 300,832 | 862,254 | 120,304 | 11,743,021 | 18,507 | 11,719 | 721,691 | 14,151,341 | |
| 2020 | 463,210 | 23,814 | 187,081 | 903,009 | 129,296 | 11,192,689 | 24,349 | 21,829 | 945,821 | 13,891,098 | |
| 2021 | 779,634 | 39,448 | 335,831 | 1,698,298 | 226,327 | 20,233,114 | 40,316 | 19,290 | 1,579,034 | 24,951,293 | |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| TOTAL | 8,857,237 | 111,511 | 3,439,156 | 19,785,260 | 2,572,986 | 228,322,033 | 454,753 | 390,949 | 17,868,222 | 281,802,107 | |

^b Costs from Table B-10 allocated to Empire West Side Irrigation District are reduced herein by \$31,588 in 1978; \$12,129 in 1980; \$15,173 in 1981; \$38,004 in 1983; \$43,033 in 1986; \$5,261 in 1995; \$63,318 in 1996; and \$124,667 in 1998 in accordance with letters of agreement with the district.

^c Costs related to maximum annual Table A of 15,000 acre-feet under Amendment 18 of the water supply contract with Kern County Water Agency.

TABLE B-14 Capital Costs of Transportation Facilities Allocated to Each Contractor (in dollars)

Sheet 3 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|--------------------|-------------------|--------------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] | [30] | |
| 1952 | 3,158 | 850 | 254 | 1,402 | 70 | 1,695 | 418 | 6,079 | 1,550 | 962 |
| 1953 | 10,026 | 2,668 | 799 | 4,401 | 222 | 5,318 | 1,328 | 19,058 | 4,852 | 3,011 |
| 1954 | 12,742 | 3,465 | 1,031 | 5,714 | 285 | 6,908 | 1,691 | 24,608 | 6,290 | 3,904 |
| 1955 | 5,411 | 1,374 | 401 | 2,267 | 115 | 2,756 | 715 | 9,229 | 2,377 | 1,474 |
| 1956 | 9,775 | 2,196 | 612 | 3,622 | 191 | 4,449 | 1,267 | 13,138 | 3,438 | 2,127 |
| 1957 | 26,306 | 6,343 | 1,816 | 10,461 | 540 | 12,767 | 3,450 | 40,646 | 10,534 | 6,526 |
| 1958 | 49,204 | 11,581 | 3,290 | 19,099 | 991 | 23,360 | 6,414 | 72,708 | 18,898 | 11,701 |
| 1959 | 70,247 | 15,869 | 4,616 | 26,171 | 1,347 | 31,759 | 9,030 | 98,596 | 25,519 | 15,815 |
| 1960 | 84,552 | 22,068 | 6,797 | 36,395 | 1,547 | 43,260 | 10,772 | 147,170 | 37,469 | 23,307 |
| 1961 | 126,542 | 34,613 | 12,530 | 57,086 | 2,245 | 63,709 | 16,437 | 236,164 | 57,707 | 36,153 |
| 1962 | 198,558 | 43,719 | 13,861 | 72,102 | 3,344 | 84,709 | 24,943 | 253,435 | 64,330 | 40,012 |
| 1963 | 580,138 | 116,797 | 33,149 | 192,624 | 9,828 | 234,926 | 73,256 | 610,277 | 160,624 | 99,266 |
| 1964 | 1,094,365 | 209,462 | 55,445 | 345,446 | 18,442 | 429,605 | 137,769 | 1,026,066 | 276,118 | 170,012 |
| 1965 | 1,908,076 | 385,533 | 103,757 | 635,825 | 32,819 | 786,986 | 244,587 | 1,913,090 | 512,862 | 316,082 |
| 1966 | 3,960,302 | 812,655 | 215,858 | 1,340,235 | 69,325 | 1,664,584 | 517,269 | 3,943,586 | 1,062,417 | 654,194 |
| 1967 | 4,976,538 | 1,077,422 | 296,069 | 1,776,892 | 88,301 | 2,182,240 | 653,250 | 5,821,681 | 1,550,239 | 958,406 |
| 1968 | 5,924,474 | 1,350,742 | 368,156 | 2,227,646 | 107,350 | 2,738,009 | 783,940 | 7,982,824 | 2,122,940 | 1,314,841 |
| 1969 | 5,822,708 | 1,690,259 | 539,851 | 2,787,631 | 121,303 | 3,256,507 | 865,455 | 10,988,185 | 2,769,647 | 1,726,891 |
| 1970 | 5,032,959 | 2,050,788 | 695,345 | 3,382,251 | 106,381 | 3,872,367 | 736,775 | 13,795,809 | 3,457,109 | 2,160,122 |
| 1971 | 2,577,507 | 1,071,523 | 338,581 | 1,767,179 | 48,337 | 2,087,223 | 347,057 | 8,137,053 | 1,987,120 | 1,237,573 |
| 1972 | 973,436 | 331,759 | 92,079 | 547,138 | 19,134 | 668,550 | 134,360 | 2,691,137 | 697,957 | 434,507 |
| 1973 | 354,407 | 158,579 | 82,223 | 261,557 | 6,304 | 238,094 | 46,102 | 1,760,570 | 403,582 | 256,711 |
| 1974 | 451,450 | 259,175 | 74,113 | 427,433 | 8,143 | 518,453 | 59,145 | 1,617,394 | 425,927 | 264,349 |
| 1975 | 253,438 | 193,632 | 52,821 | 319,337 | 4,954 | 392,110 | 33,995 | 1,533,664 | 407,913 | 253,838 |
| 1976 | 237,539 | 136,751 | 37,235 | 225,529 | 4,245 | 277,807 | 31,002 | 962,280 | 255,901 | 158,850 |
| 1977 | 199,554 | 91,384 | 25,858 | 150,711 | 3,757 | 183,609 | 26,834 | 591,445 | 155,537 | 96,517 |
| 1978 | 302,111 | 78,573 | 22,226 | 129,584 | 5,233 | 157,815 | 38,654 | 428,989 | 111,769 | 69,152 |
| 1979 | 357,678 | 81,807 | 21,795 | 134,915 | 5,965 | 166,931 | 44,410 | 403,569 | 108,408 | 66,847 |
| 1980 | 1,867,517 | 423,755 | 113,166 | 698,855 | 32,435 | 864,104 | 240,899 | 2,040,757 | 548,085 | 337,811 |
| 1981 | (158,728) | (47,102) | (8,865) | (77,678) | (2,576) | (102,568) | (19,588) | (143,875) | (43,557) | (26,356) |
| 1982 | 1,557,934 | 298,770 | 78,903 | 492,728 | 26,237 | 613,587 | 196,672 | 1,421,407 | 388,261 | 238,792 |
| 1983 | 2,062,512 | 396,033 | 115,678 | 653,134 | 34,699 | 803,945 | 259,939 | 2,126,313 | 581,672 | 357,812 |
| 1984 | 1,518,361 | 297,559 | 85,097 | 490,731 | 27,272 | 606,124 | 188,562 | 1,546,628 | 423,408 | 260,327 |
| 1985 | 896,226 | 217,115 | 62,532 | 358,064 | 13,104 | 441,299 | 107,533 | 1,116,949 | 305,291 | 187,699 |
| 1986 | 841,555 | 221,194 | 58,152 | 364,790 | 9,038 | 454,702 | 93,309 | 1,048,625 | 286,302 | 176,057 |
| 1987 | 333,052 | 166,099 | 43,992 | 273,928 | 5,566 | 340,485 | 40,716 | 783,725 | 213,202 | 131,163 |
| 1988 | 259,234 | 65,831 | 22,723 | 108,570 | 3,384 | 128,339 | 26,743 | 429,498 | 113,644 | 70,260 |
| 1989 | 1,045,999 | 323,138 | 97,036 | 532,920 | 16,777 | 649,616 | 125,344 | 1,375,722 | 372,048 | 227,772 |
| 1990 | 678,053 | 332,566 | 97,789 | 548,468 | 7,335 | 672,344 | 67,179 | 1,509,745 | 409,710 | 251,185 |
| 1991 | 831,687 | 367,196 | 120,925 | 605,579 | 11,966 | 733,443 | 92,625 | 1,979,364 | 540,210 | 331,235 |
| 1992 | 633,272 | 270,826 | 131,328 | 446,647 | 9,556 | 501,634 | 76,760 | 2,093,387 | 573,386 | 351,492 |
| 1993 | 634,283 | 222,347 | 171,095 | 366,700 | 10,194 | 353,470 | 73,955 | 3,848,084 | 1,046,752 | 646,980 |
| 1994 | 467,409 | 132,599 | 93,839 | 218,685 | 7,255 | 218,494 | 53,209 | 2,347,599 | 637,733 | 394,936 |
| 1995 | 459,990 | 132,690 | 78,390 | 218,835 | 7,436 | 232,377 | 54,544 | 1,960,100 | 530,656 | 331,286 |
| 1996 | 299,764 | 110,520 | 44,965 | 182,270 | 4,885 | 211,872 | 35,808 | 4,024,655 | 972,829 | 1,079,629 |
| 1997 | 438,898 | 103,382 | 24,640 | 170,497 | 7,397 | 214,534 | 54,452 | 2,892,626 | 397,103 | 1,914,804 |
| 1998 | 234,379 | 62,492 | 41,136 | 103,063 | 3,989 | 106,009 | 29,551 | 3,683,353 | 303,255 | 3,219,136 |
| 1999 | 268,224 | 89,312 | 40,069 | 147,294 | 4,812 | 167,592 | 35,399 | 4,662,112 | 235,054 | 4,622,213 |
| 2000 | 139,035 | 54,795 | 23,903 | 90,369 | 2,665 | 103,194 | 19,150 | 10,482,917 | 171,107 | 11,737,688 |
| 2001 | 130,754 | 50,816 | 15,641 | 83,805 | 2,989 | 102,254 | 20,949 | 18,225,132 | 96,254 | 21,171,124 |
| 2002 | 199,807 | 40,293 | 12,884 | 66,452 | 3,001 | 80,478 | 22,664 | 9,283,598 | 133,675 | 10,459,310 |
| 2003 | 76,592 | 24,945 | 7,688 | 41,140 | 1,245 | 50,028 | 9,409 | 4,032,931 | 54,302 | 4,493,890 |
| 2004 | 81,688 | 23,476 | 6,416 | 38,716 | 1,445 | 48,028 | 10,585 | 2,099,566 | 42,507 | 2,216,475 |
| 2005 | 232,323 | 47,108 | 14,116 | 77,691 | 4,011 | 93,862 | 29,628 | 989,790 | 71,539 | 770,161 |
| 2006 | 334,422 | 68,325 | 25,180 | 112,684 | 5,626 | 126,956 | 42,114 | 2,017,180 | 113,701 | 1,780,989 |
| 2007 | 258,891 | 57,769 | 22,068 | 95,272 | 4,567 | 111,771 | 33,367 | 2,134,671 | 108,623 | 2,115,573 |
| 2008 | 159,067 | 70,874 | 60,890 | 116,900 | 2,792 | 83,144 | 20,471 | 3,374,236 | 263,890 | 2,811,765 |
| 2009 | 577,477 | 153,560 | 60,337 | 253,262 | 9,826 | 275,417 | 73,122 | 4,779,860 | 271,508 | 4,253,220 |
| 2010 | 644,764 | 193,723 | 62,817 | 319,495 | 10,809 | 371,033 | 81,051 | 5,464,064 | 285,792 | 5,295,499 |
| 2011 | 341,088 | 230,769 | 59,398 | 380,581 | 5,742 | 474,797 | 42,964 | 7,766,777 | 287,922 | 8,034,505 |
| 2012 | 257,613 | 343,375 | 87,824 | 566,289 | 5,062 | 708,509 | 35,082 | 12,009,741 | 445,112 | 12,375,165 |
| 2013 | 789,946 | 348,815 | 91,411 | 575,262 | 15,285 | 718,195 | 106,713 | 34,509,949 | 488,498 | 38,758,009 |
| 2014 | 875,295 | 248,206 | 64,409 | 409,340 | 15,980 | 512,246 | 114,774 | 30,956,905 | 409,695 | 35,045,545 |
| 2015 | 1,060,376 | 271,969 | 69,820 | 448,527 | 20,067 | 561,547 | 148,294 | 17,643,119 | 387,061 | 19,408,804 |
| 2016 | 1,347,481 | 273,837 | 70,586 | 451,610 | 23,485 | 566,177 | 175,530 | 19,800,860 | 382,436 | 21,977,655 |
| 2017 | 796,463 | 169,629 | 41,176 | 279,751 | 13,654 | 353,412 | 101,164 | 6,659,934 | 194,383 | 7,151,493 |
| 2018 | 1,140,278 | 226,628 | 68,953 | 373,756 | 19,183 | 457,183 | 143,650 | 4,738,117 | 440,007 | 3,949,022 |
| 2019 | 1,615,157 | 396,587 | 136,360 | 654,072 | 29,164 | 748,801 | 211,069 | 3,372,471 | 774,564 | 661,005 |
| 2020 | 1,881,761 | 402,665 | 124,502 | 664,084 | 32,384 | 797,283 | 240,202 | 2,844,461 | 663,899 | 599,151 |
| 2021 | 3,879,783 | 822,272 | 231,110 | 1,356,097 | 66,633 | 1,662,066 | 494,704 | 4,859,428 | 1,207,010 | 939,839 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 67,592,882 | 18,948,343 | 5,970,649 | 31,249,887 | 1,207,093 | 37,354,289 | 8,860,591 | 313,830,929 | 32,827,563 | 241,493,270 |

TABLE B-14 Capital Costs of Transportation Facilities Allocated to Each Contractor (in dollars)

Sheet 4 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | South Bay Area Future Contractor | Grand Total |
|---------------|--------------------------------------|---------------------------|-------------------|----------------------|--------------------|----------|----------------|----------------|----------------------------------|----------------------|
| | Santa Clarita ^{d,e} | Metropolitan ^f | Ventura | Total | Yuba City | Butte | Plumas | Total | | |
| [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] | [40] | |
| 1952 | 1,042 | 69,020 | 370 | 86,871 | 0 | 0 | 0 | 0 | 59 | 99,353 |
| 1953 | 3,327 | 217,634 | 1,187 | 273,833 | 0 | 0 | 0 | 0 | 264 | 311,812 |
| 1954 | 4,193 | 279,967 | 1,496 | 352,294 | 0 | 0 | 0 | 0 | 766 | 402,143 |
| 1955 | 1,881 | 111,602 | 670 | 140,272 | 0 | 0 | 0 | 0 | 969 | 169,342 |
| 1956 | 3,590 | 179,335 | 1,299 | 225,040 | 0 | 0 | 0 | 0 | 9,172 | 351,551 |
| 1957 | 9,255 | 516,050 | 3,367 | 648,059 | 0 | 0 | 0 | 0 | 23,172 | 1,464,452 |
| 1958 | 17,599 | 945,684 | 6,390 | 1,186,917 | 0 | 0 | 2 | 2 | 32,888 | 2,286,623 |
| 1959 | 29,740 | 1,364,298 | 9,894 | 1,702,901 | 0 | 0 | 14 | 14 | 57,918 | 2,967,412 |
| 1960 | 38,760 | 1,914,521 | 12,798 | 2,379,418 | 0 | 0 | 28 | 28 | 123,202 | 4,660,833 |
| 1961 | 54,262 | 3,212,125 | 18,770 | 3,928,343 | 0 | 0 | 10 | 10 | 316,220 | 8,545,244 |
| 1962 | 85,352 | 3,543,471 | 29,069 | 4,456,905 | 0 | 0 | 32 | 32 | 228,202 | 8,875,171 |
| 1963 | 255,252 | 11,185,928 | 86,807 | 13,638,873 | 0 | 0 | 51 | 51 | 528,496 | 24,610,278 |
| 1964 | 501,858 | 18,065,455 | 164,709 | 22,494,750 | 0 | 0 | 7,791 | 7,791 | 590,034 | 41,736,060 |
| 1965 | 947,523 | 33,763,577 | 307,475 | 41,858,192 | 0 | 0 | 3,139 | 3,139 | 332,680 | 62,664,743 |
| 1966 | 2,150,972 | 74,485,027 | 681,898 | 91,558,323 | 0 | 0 | (48) | (48) | 783,728 | 129,110,330 |
| 1967 | 4,100,531 | 130,599,417 | 1,279,076 | 155,360,062 | 0 | 0 | 47 | 47 | 1,479,421 | 194,146,365 |
| 1968 | 3,998,942 | 147,502,290 | 1,360,687 | 177,782,842 | 0 | 0 | 51,573 | 51,573 | 1,254,192 | 197,978,911 |
| 1969 | 3,079,426 | 140,096,646 | 1,085,026 | 174,739,535 | 0 | 0 | 234,232 | 234,232 | 398,183 | 184,473,490 |
| 1970 | 3,277,778 | 161,983,078 | 1,147,609 | 201,698,371 | 0 | 0 | 16,227 | 16,227 | 74,028 | 207,082,650 |
| 1971 | 2,146,954 | 133,903,316 | 738,822 | 156,388,246 | 0 | 0 | 27,204 | 27,204 | 12,457 | 158,624,739 |
| 1972 | 283,257 | 43,931,880 | 66,878 | 50,872,072 | 0 | 0 | 9 | 9 | 13,182 | 51,936,917 |
| 1973 | 914,303 | 39,723,010 | 290,020 | 44,495,462 | 0 | 0 | 25 | 25 | 8,099 | 45,263,853 |
| 1974 | 280,861 | 18,896,593 | 86,362 | 23,369,399 | 0 | 0 | 45 | 45 | 28,570 | 24,402,166 |
| 1975 | 246,492 | 16,732,939 | 83,975 | 20,509,109 | 0 | 0 | 21 | 21 | 8,226 | 21,318,838 |
| 1976 | 255,238 | 13,545,451 | 84,623 | 16,212,450 | 0 | 0 | 51 | 51 | 16,486 | 17,492,910 |
| 1977 | 371,469 | 11,769,352 | 110,833 | 13,776,859 | 0 | 0 | 28 | 28 | 21,181 | 15,544,382 |
| 1978 | 470,176 | 15,781,696 | 174,876 | 17,770,853 | 0 | 0 | 38 | 38 | 28,876 | 19,073,475 |
| 1979 | 938,985 | 27,627,424 | 343,361 | 30,302,093 | 0 | 0 | 23 | 23 | 26,668 | 31,857,362 |
| 1980 | 1,777,294 | 59,493,774 | 641,586 | 69,080,039 | 0 | 0 | 26 | 26 | 59,169 | 74,974,704 |
| 1981 | 610,795 | 15,661,179 | 224,257 | 15,865,338 | 0 | 0 | 34 | 34 | (6,746) | 15,727,602 |
| 1982 | 861,928 | 30,873,857 | 316,107 | 37,365,183 | 0 | 0 | 11 | 11 | 16,086 | 39,705,931 |
| 1983 | 521,349 | 25,056,047 | 187,121 | 33,156,253 | 0 | 0 | 19 | 19 | 72,225 | 38,006,645 |
| 1984 | 295,783 | 16,317,441 | 103,160 | 22,160,455 | 0 | 0 | 26 | 26 | 83,252 | 30,414,886 |
| 1985 | 158,810 | 10,243,779 | 56,162 | 14,164,564 | 0 | 0 | 29 | 29 | 16,338 | 28,581,730 |
| 1986 | 104,860 | 8,365,310 | 34,777 | 12,058,671 | 0 | 0 | 31 | 31 | 16,248 | 41,035,899 |
| 1987 | 105,625 | 6,955,356 | 36,142 | 9,429,050 | 0 | 0 | 32 | 32 | 29,062 | 32,523,660 |
| 1988 | 174,155 | 6,626,545 | 57,117 | 8,086,041 | 0 | 0 | 55 | 55 | 50,083 | 18,140,686 |
| 1989 | 434,394 | 18,531,680 | 153,200 | 23,885,645 | 0 | 0 | 44 | 44 | 43,324 | 33,301,366 |
| 1990 | 374,313 | 17,430,869 | 125,376 | 22,504,929 | 0 | 0 | 63 | 63 | 96,419 | 34,453,743 |
| 1991 | 401,961 | 20,792,168 | 132,558 | 26,940,915 | 0 | 0 | 54 | 54 | 149,922 | 39,811,664 |
| 1992 | 356,952 | 21,196,762 | 116,999 | 26,758,999 | 0 | 0 | 42 | 42 | 80,900 | 35,041,233 |
| 1993 | 332,089 | 29,471,748 | 105,693 | 37,283,389 | 0 | 0 | 30 | 30 | 59,324 | 53,921,787 |
| 1994 | 165,607 | 16,392,019 | 50,941 | 21,180,326 | 0 | 0 | 14 | 14 | 34,208 | 74,225,377 |
| 1995 | 293,308 | 16,078,395 | 72,214 | 20,450,221 | 0 | 0 | 3 | 3 | 42,395 | 191,525,108 |
| 1996 | 206,742 | 23,237,696 | 49,282 | 30,460,917 | 0 | 0 | 0 | 0 | 21,388 | 188,829,048 |
| 1997 | 249,699 | 13,530,777 | 72,335 | 20,071,144 | 0 | 0 | 3 | 3 | 34,976 | 65,660,155 |
| 1998 | 202,650 | 11,284,364 | 65,745 | 19,339,120 | 0 | 0 | 7 | 7 | 11,234 | 32,689,229 |
| 1999 | 175,939 | 9,063,618 | 54,504 | 19,566,143 | 0 | 0 | 2 | 2 | 34,616 | 32,822,429 |
| 2000 | 77,889 | 5,393,221 | 24,010 | 28,319,941 | 0 | 0 | 24 | 24 | 16,912 | 35,219,423 |
| 2001 | 44,790 | 2,988,800 | 13,047 | 42,946,356 | 0 | 0 | 20 | 20 | 68,013 | 46,451,811 |
| 2002 | 121,849 | 5,787,234 | 39,607 | 26,250,853 | 0 | 0 | 14 | 14 | 382,151 | 37,382,432 |
| 2003 | 42,072 | 5,783,732 | 13,689 | 14,631,665 | 0 | 0 | 0 | 0 | 590,294 | 23,090,658 |
| 2004 | 46,992 | 4,555,521 | 15,942 | 9,187,357 | 0 | 0 | 0 | 0 | 156,414 | 14,873,600 |
| 2005 | 126,137 | 7,322,277 | 42,941 | 9,821,584 | 0 | 0 | 0 | 0 | 123,949 | 13,470,406 |
| 2006 | 246,722 | 13,867,322 | 90,203 | 18,831,425 | 0 | 0 | 5 | 5 | 120,330 | 21,679,785 |
| 2007 | 182,329 | 11,723,751 | 65,425 | 16,914,077 | 0 | 0 | 0 | 0 | 266,740 | 24,260,993 |
| 2008 | 175,464 | 11,885,796 | 60,480 | 19,085,769 | 0 | 0 | 4 | 4 | 493,279 | 35,209,891 |
| 2009 | 339,521 | 22,108,510 | 122,280 | 33,277,900 | 0 | 0 | 6 | 6 | 1,018,818 | 48,428,777 |
| 2010 | 340,756 | 18,059,829 | 107,451 | 31,237,085 | 0 | 0 | (2) | (2) | 6,354,636 | 55,404,059 |
| 2011 | 219,260 | 12,727,509 | 55,576 | 30,626,887 | 0 | 0 | 0 | 0 | 2,566,258 | 52,321,305 |
| 2012 | 144,365 | 17,420,517 | 42,735 | 44,441,389 | 0 | 0 | 0 | 0 | 1,004,833 | 60,251,441 |
| 2013 | 377,704 | 28,351,615 | 110,781 | 105,242,183 | 0 | 0 | 0 | 0 | 546,046 | 120,654,854 |
| 2014 | 463,423 | 21,851,728 | 126,201 | 91,093,748 | 0 | 0 | 0 | 0 | (16,925) | 99,413,650 |
| 2015 | 532,068 | 41,016,634 | 162,974 | 81,731,260 | 0 | 0 | 0 | 0 | 277,916 | 90,770,186 |
| 2016 | 700,858 | 64,440,012 | 216,631 | 110,427,159 | 0 | 0 | 0 | 0 | 98,270 | 120,510,874 |
| 2017 | 554,382 | 35,199,660 | 153,788 | 51,668,888 | 0 | 0 | 0 | 0 | 77,988 | 61,094,105 |
| 2018 | 793,115 | 35,520,295 | 221,204 | 48,091,391 | 0 | 0 | 0 | 0 | 219,614 | 61,709,593 |
| 2019 | 1,380,789 | 55,586,750 | 351,349 | 65,918,137 | 0 | 0 | 0 | 0 | 228,012 | 85,974,311 |
| 2020 | 1,669,388 | 73,256,583 | 501,785 | 83,678,147 | 0 | 0 | 0 | 0 | 375,130 | 107,423,310 |
| 2021 | 3,139,200 | 145,055,317 | 940,771 | 164,654,230 | 0 | 0 | 0 | 0 | 802,559 | 206,278,460 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 43,992,344 | 2,068,452,783 | 14,312,493 | 2,886,093,116 | 0 | 0 | 341,139 | 341,139 | 23,112,999 | 3,980,718,212 |

^d Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.^e Costs from Table B-10 allocated to Santa Clarita Valley Water Agency are reduced herein by \$14,088 in 1978 in accordance with a letter of agreement with the agency.^f Costs from Table B-10 allocated to The Metropolitan Water District of Southern California are reduced herein by \$16,425,374 in 1972 under provisions of Amendment 7 to its water supply contract.

TABLE B-15 Capital Cost Component of Transportation Charge for Each Contractor (in dollars)^{a,b,c}

Sheet 1 of 4

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA | | | | CENTRAL COASTAL AREA | | |
|---------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|-------------------|-------------------|
| | Napa | Solano | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 147,972 | 105,673 | 364,827 | 618,472 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 208,371 | 170,929 | 530,036 | 909,335 | 6,696 | 21,667 | 28,363 |
| 1965 | 0 | 0 | 0 | 274,717 | 259,943 | 899,371 | 1,434,031 | 13,756 | 36,029 | 49,785 |
| 1966 | 18,063 | 0 | 18,063 | 310,035 | 290,808 | 1,073,270 | 1,674,113 | 26,524 | 61,349 | 87,873 |
| 1967 | 41,574 | 0 | 41,574 | 380,137 | 320,989 | 1,187,619 | 1,888,745 | 56,469 | 118,263 | 174,731 |
| 1968 | 121,509 | 0 | 121,509 | 496,392 | 361,935 | 1,309,946 | 2,168,273 | 104,160 | 208,037 | 312,197 |
| 1969 | 165,289 | 0 | 165,289 | 598,112 | 397,386 | 1,411,701 | 2,407,198 | 122,043 | 242,426 | 364,469 |
| 1970 | 169,077 | 0 | 169,077 | 632,269 | 412,322 | 1,450,660 | 2,495,251 | 125,963 | 250,808 | 376,771 |
| 1971 | 171,286 | 0 | 171,286 | 639,287 | 415,439 | 1,457,564 | 2,512,290 | 128,402 | 256,371 | 384,773 |
| 1972 | 172,649 | 0 | 172,649 | 641,062 | 416,368 | 1,461,847 | 2,519,276 | 129,861 | 260,482 | 390,343 |
| 1973 | 173,649 | 31,366 | 205,015 | 642,601 | 417,018 | 1,465,086 | 2,524,705 | 130,843 | 263,040 | 393,883 |
| 1974 | 176,527 | 32,938 | 209,466 | 643,765 | 417,636 | 1,467,092 | 2,528,493 | 132,015 | 265,901 | 397,916 |
| 1975 | 184,973 | 36,291 | 221,264 | 646,425 | 418,879 | 1,470,816 | 2,536,119 | 133,290 | 269,028 | 402,318 |
| 1976 | 189,650 | 40,836 | 230,485 | 647,885 | 419,684 | 1,472,924 | 2,540,492 | 134,041 | 272,155 | 406,196 |
| 1977 | 192,592 | 45,096 | 237,688 | 650,708 | 421,449 | 1,478,507 | 2,550,664 | 135,754 | 278,799 | 414,553 |
| 1978 | 195,860 | 49,178 | 245,038 | 654,463 | 423,747 | 1,485,299 | 2,563,509 | 141,271 | 292,281 | 433,552 |
| 1979 | 199,390 | 53,340 | 252,730 | 659,876 | 427,108 | 1,494,207 | 2,581,191 | 142,362 | 297,569 | 439,930 |
| 1980 | 209,132 | 67,748 | 276,880 | 663,871 | 429,296 | 1,499,843 | 2,593,010 | 143,530 | 303,969 | 447,499 |
| 1981 | 222,599 | 87,408 | 310,007 | 674,099 | 435,629 | 1,515,357 | 2,625,085 | 148,789 | 327,544 | 476,333 |
| 1982 | 234,191 | 106,918 | 341,110 | 672,372 | 434,108 | 1,512,014 | 2,618,494 | 148,004 | 320,657 | 468,660 |
| 1983 | 262,160 | 151,259 | 413,419 | 673,972 | 434,532 | 1,513,393 | 2,621,897 | 148,213 | 317,658 | 465,870 |
| 1984 | 326,072 | 224,245 | 550,317 | 684,941 | 441,230 | 1,530,671 | 2,656,842 | 149,853 | 323,275 | 473,127 |
| 1985 | 455,836 | 364,305 | 820,141 | 697,309 | 448,410 | 1,548,594 | 2,694,313 | 151,658 | 328,761 | 480,419 |
| 1986 | 819,636 | 692,479 | 1,512,115 | 699,478 | 449,390 | 1,551,318 | 2,700,186 | 152,545 | 332,779 | 485,324 |
| 1987 | 1,360,688 | 1,559,243 | 2,919,931 | 702,289 | 451,007 | 1,555,828 | 2,709,125 | 154,805 | 348,472 | 503,277 |
| 1988 | 1,771,651 | 2,028,121 | 3,979,772 | 706,684 | 453,514 | 1,562,985 | 2,723,182 | 161,346 | 417,591 | 578,937 |
| 1989 | 1,891,484 | 2,433,160 | 4,324,645 | 715,527 | 459,332 | 1,578,655 | 2,753,514 | 169,453 | 494,247 | 663,699 |
| 1990 | 1,955,330 | 2,514,151 | 4,469,481 | 723,669 | 464,692 | 1,592,216 | 2,780,577 | 177,387 | 557,384 | 734,771 |
| 1991 | 1,978,582 | 2,557,403 | 4,535,985 | 740,502 | 476,459 | 1,625,032 | 2,841,992 | 189,050 | 639,235 | 828,285 |
| 1992 | 1,983,860 | 2,562,121 | 4,545,981 | 770,278 | 496,722 | 1,675,047 | 2,942,047 | 204,822 | 754,678 | 959,500 |
| 1993 | 1,986,897 | 2,565,427 | 4,552,324 | 784,289 | 505,773 | 1,698,585 | 2,988,648 | 224,056 | 941,300 | 1,165,356 |
| 1994 | 1,993,467 | 2,572,330 | 4,565,797 | 794,414 | 512,498 | 1,716,961 | 3,023,873 | 286,878 | 1,585,162 | 1,872,040 |
| 1995 | 1,997,323 | 2,576,836 | 4,574,159 | 798,756 | 515,639 | 1,729,387 | 3,043,781 | 517,412 | 4,095,799 | 4,613,211 |
| 1996 | 1,998,994 | 2,578,433 | 4,577,427 | 806,408 | 520,936 | 1,743,439 | 3,070,783 | 1,187,010 | 12,569,247 | 13,756,257 |
| 1997 | 2,000,110 | 2,579,484 | 4,579,594 | 810,332 | 523,583 | 1,750,461 | 3,084,376 | 1,808,545 | 20,578,178 | 22,386,724 |
| 1998 | 2,001,225 | 2,585,478 | 4,586,703 | 816,871 | 527,976 | 1,762,113 | 3,106,960 | 1,985,644 | 22,700,288 | 24,685,933 |
| 1999 | 2,002,204 | 2,586,690 | 4,588,893 | 819,036 | 529,331 | 1,765,656 | 3,114,023 | 2,035,260 | 23,293,767 | 25,329,027 |
| 2000 | 2,006,043 | 2,592,730 | 4,598,773 | 982,156 | 533,508 | 1,777,485 | 3,293,150 | 2,088,005 | 23,838,744 | 25,926,748 |
| 2001 | 2,327,908 | 2,784,459 | 5,112,367 | 1,041,548 | 535,165 | 1,782,101 | 3,358,814 | 2,116,046 | 24,156,352 | 26,272,398 |
| 2002 | 2,328,347 | 2,785,299 | 5,113,646 | 1,053,665 | 550,866 | 1,890,059 | 3,494,591 | 2,120,253 | 24,187,702 | 26,307,955 |
| 2003 | 2,329,691 | 2,788,108 | 5,117,800 | 1,126,189 | 621,150 | 2,236,683 | 3,984,022 | 2,124,324 | 24,210,510 | 26,334,833 |
| 2004 | 2,333,375 | 2,789,402 | 5,122,777 | 1,243,201 | 700,643 | 2,512,474 | 4,456,318 | 2,125,494 | 24,217,560 | 26,343,054 |
| 2005 | 2,343,923 | 2,790,740 | 5,134,663 | 1,274,497 | 721,599 | 2,761,150 | 4,757,246 | 2,126,238 | 24,220,734 | 26,346,972 |
| 2006 | 2,348,175 | 2,794,973 | 5,143,147 | 1,304,141 | 742,505 | 2,855,962 | 4,902,608 | 2,126,116 | 24,210,804 | 26,336,921 |
| 2007 | 2,411,210 | 2,796,343 | 5,207,553 | 1,333,495 | 763,106 | 2,906,021 | 5,002,622 | 2,126,644 | 24,214,870 | 26,341,514 |
| 2008 | 2,645,025 | 2,799,340 | 5,444,365 | 1,400,880 | 809,662 | 3,017,673 | 5,228,216 | 2,127,678 | 24,220,221 | 26,347,899 |
| 2009 | 3,226,400 | 2,803,665 | 6,030,065 | 1,527,810 | 897,252 | 3,227,237 | 5,652,299 | 2,129,520 | 24,226,659 | 26,356,180 |
| 2010 | 3,316,155 | 2,805,001 | 6,121,156 | 1,792,221 | 1,081,998 | 3,667,787 | 6,542,006 | 2,130,095 | 24,229,935 | 26,360,030 |
| 2011 | 3,346,543 | 2,805,240 | 6,151,784 | 2,480,969 | 1,318,810 | 4,260,266 | 8,060,045 | 2,135,200 | 24,239,123 | 26,374,323 |
| 2012 | 3,361,666 | 2,808,266 | 6,169,933 | 2,936,421 | 1,583,384 | 4,897,983 | 9,417,788 | 2,142,776 | 24,255,155 | 26,397,931 |
| 2013 | 3,400,771 | 2,841,109 | 6,241,880 | 3,051,358 | 1,664,841 | 5,007,350 | 9,723,550 | 2,148,169 | 24,278,899 | 26,427,068 |
| 2014 | 3,454,741 | 2,894,482 | 6,349,222 | 3,114,623 | 1,690,262 | 5,123,884 | 9,928,769 | 2,160,289 | 24,349,603 | 26,509,892 |
| 2015 | 3,504,689 | 2,947,371 | 6,452,060 | 3,028,182 | 1,588,247 | 4,739,755 | 9,356,184 | 2,178,159 | 24,451,794 | 26,629,953 |
| 2016 | 3,500,557 | 2,969,176 | 6,469,733 | 3,087,618 | 1,599,389 | 4,671,223 | 9,358,230 | 2,184,886 | 24,531,426 | 26,716,313 |
| 2017 | 3,481,852 | 2,982,817 | 6,464,669 | 3,048,020 | 1,583,076 | 4,591,219 | 9,222,314 | 2,176,186 | 24,565,758 | 26,741,944 |
| 2018 | 3,393,575 | 2,991,229 | 6,384,804 | 2,956,281 | 1,554,670 | 4,507,208 | 9,018,159 | 2,153,473 | 24,564,150 | 26,717,623 |
| 2019 | 3,346,219 | 2,996,631 | 6,342,850 | 2,943,268 | 1,560,729 | 4,512,105 | 9,016,101 | 2,165,110 | 24,592,879 | 26,757,988 |
| 2020 | 3,348,722 | 3,009,289 | 6,358,011 | 3,002,524 | 1,583,685 | 4,627,162 | 9,213,371 | 2,223,291 | 24,743,156 | 26,966,447 |
| 2021 | 3,378,436 | 3,040,274 | 6,418,710 | 3,129,584 | 1,639,141 | 4,848,543 | 9,617,268 | 2,290,828 | 25,104,156 | 27,394,985 |
| 2022 | 3,518,285 | 3,382,365 | 6,900,650 | 3,329,996 | 1,710,042 | 5,090,709 | 10,130,746 | 2,404,211 | 25,639,141 | 28,043,352 |
| 2023 | 3,517,142 | 3,348,833 | 6,865,975 | 3,328,698 | 1,709,392 | 5,087,469 | 10,125,559 | 2,403,228 | 25,636,583 | 28,039,811 |
| 2024 | 3,515,862 | 3,347,199 | 6,861,061 | 3,327,751 | 1,708,774 | 5,085,463 | 10,121,989 | 2,402,056 | 25,633,722 | 28,035,778 |
| 2025 | 3,504,247 | 3,343,622 | 6,847,868 | 3,325,495 | 1,707,531 | 5,081,739 | 10,114,766 | 2,400,781 | 25,630,596 | 28,031,377 |
| 2026 | 3,498,903 | 3,338,868 | 6,837,771 | 3,324,224 | 1,706,726 | 5,079,631 | 10,110,582 | 2,400,030 | 25,627,468 | 28,027,498 |
| 2027 | 3,495,532 | 3,334,433 | 6,829,965 | 3,321,653 | 1,704,961 | 5,074,049 | 10,100,663 | 2,398,317 | 25,620,824 | 28,019,142 |
| 2028 | 3,491,792 | 3,330,174 | 6,821,966 | 3,318,220 | 1,702,663 | 5,067,256 | 10,088,139 | 2,392,800 | 25,607,342 | 28,000,142 |
| 2029 | 3,487,754 | 3,325,806 | 6,813,560 | 3,313,121 | 1,699,301 | 5,058,348 | 10,070,771 | 2,391,710 | 25,602,054 | 27,993,764 |
| 2030 | 3,476,598 | 3,310,344 | 6,786,942 | 3,309,447 | 1,697,114 | 5,052,712 | 10,059,274 | 2,390,541 | 25,595,654 | 27,986,195 |
| 2031 | 3,461,181 | 3,289,278 | 6,750,459 | 3,299,583 | 1,690,781 | 5,037,198 | 10,027,562 | 2,385,282 | 25,572,079 | 27,957,361 |
| 2032 | 3,447,884 | 3,268,333 | 6,716,217 | 3,301,644 | 1,692,301 | 5,040,541 | 10,034,487 | 2,386,067 | 25,578,967 | 27,965,034 |
| 2033 | 3,415,825 | 3,220,882 | 6,636,707 | 3,300,424 | 1,691,878 | 5,039,163 | 10,031,464 | 2,385,858 | 25,581,965 | 27,967,824 |
| 2034 | 3,342,728 | 3,144,266 | 6,486,994 | 3,289,696 | 1,685,180 | 5,021,885 | 9,996,761 | 2,384,219 | 25,576, | |

TABLE B-15 Capital Cost Component of Transportation Charge for Each Contractor (in dollars)^{a,b,c}

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | | | |
|---------------|-------------------------|----------------|--------------------------------------|--------------------------|---------------------------------------|--------------------|------------------|----------------|-------------------|--------------------|
| | Dudley Ridge | Empire | Future Contractor San Joaquin Valley | Kern | | | Kings | Oak Flat | Tulare | Total |
| | | | | Municipal and Industrial | Municipal and Industrial ^d | Agricultural | | | | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 2,725 | 0 | 0 | 0 | 0 | 0 | 0 | 2,725 |
| 1965 | 0 | 0 | 6,029 | 64,284 | 9,284 | 0 | 0 | 0 | 0 | 79,598 |
| 1966 | 0 | 0 | 12,039 | 120,256 | 17,073 | 0 | 0 | 0 | 0 | 149,368 |
| 1967 | 0 | 0 | 26,257 | 233,262 | 34,350 | 0 | 0 | 0 | 0 | 293,869 |
| 1968 | 82,534 | 2,008 | 48,950 | 335,771 | 48,966 | 448,068 | 9,407 | 5,032 | 69,648 | 1,050,384 |
| 1969 | 82,679 | 6,024 | 57,418 | 392,005 | 52,536 | 920,188 | 10,158 | 5,470 | 263,526 | 1,790,003 |
| 1970 | 90,615 | 6,024 | 59,224 | 423,404 | 53,922 | 1,119,224 | 10,446 | 5,689 | 195,015 | 1,963,563 |
| 1971 | 103,312 | 6,024 | 60,329 | 444,522 | 54,712 | 1,486,523 | 10,612 | 6,126 | 207,523 | 2,379,683 |
| 1972 | 115,433 | 6,024 | 60,945 | 454,227 | 55,075 | 2,225,939 | 10,694 | 11,740 | 640,196 | 3,580,272 |
| 1973 | 126,976 | 6,024 | 61,370 | 458,449 | 55,248 | 2,567,283 | 10,736 | 6,783 | 247,618 | 3,540,487 |
| 1974 | 192,715 | 6,024 | 61,890 | 460,485 | 55,349 | 2,874,976 | 10,770 | 7,594 | 411,005 | 4,080,807 |
| 1975 | 234,069 | 6,024 | 62,452 | 462,798 | 55,490 | 3,443,430 | 10,812 | 7,824 | 490,426 | 4,773,325 |
| 1976 | 178,465 | 6,024 | 62,720 | 464,655 | 55,679 | 3,711,990 | 10,853 | 8,837 | 350,840 | 4,850,062 |
| 1977 | 175,458 | 6,024 | 63,362 | 467,359 | 55,965 | 4,067,271 | 10,914 | 8,095 | 335,449 | 5,189,897 |
| 1978 | 187,578 | 0 | 65,796 | 469,216 | 56,156 | 4,521,117 | 11,019 | 8,533 | 359,897 | 5,679,313 |
| 1979 | 222,462 | 6,024 | 66,111 | 471,978 | 56,491 | 4,964,385 | 11,086 | 8,752 | 405,046 | 6,212,335 |
| 1980 | 236,637 | 6,024 | 66,399 | 474,721 | 56,828 | 5,417,262 | 11,157 | 12,471 | 407,656 | 6,689,155 |
| 1981 | 236,637 | 6,024 | 67,986 | 491,115 | 58,770 | 5,928,789 | 11,565 | 9,408 | 432,104 | 7,242,398 |
| 1982 | 236,637 | 6,024 | 67,996 | 488,835 | 58,707 | 6,400,910 | 11,552 | 9,846 | 455,983 | 7,736,491 |
| 1983 | 247,603 | 6,024 | 68,332 | 493,076 | 59,377 | 6,938,403 | 11,685 | 8,248 | 54,286 | 7,887,035 |
| 1984 | 260,301 | 6,024 | 68,950 | 498,702 | 60,083 | 7,282,593 | 11,834 | 10,502 | 355,980 | 8,554,969 |
| 1985 | 272,421 | 6,024 | 69,678 | 506,586 | 61,243 | 7,754,700 | 12,069 | 10,721 | 258,972 | 8,952,415 |
| 1986 | 284,542 | 6,024 | 69,966 | 508,983 | 61,587 | 7,879,550 | 12,141 | 11,158 | 552,638 | 9,386,589 |
| 1987 | 296,662 | 6,024 | 70,471 | 512,652 | 62,116 | 8,699,887 | 12,251 | 11,377 | 576,517 | 10,247,957 |
| 1988 | 308,783 | 6,024 | 70,832 | 515,513 | 62,526 | 9,145,079 | 12,334 | 11,815 | 600,397 | 10,733,302 |
| 1989 | 320,903 | 6,024 | 71,717 | 519,169 | 63,150 | 9,466,222 | 12,501 | 12,252 | 624,845 | 11,096,783 |
| 1990 | 166,512 | 6,024 | 73,153 | 537,527 | 65,389 | 9,799,882 | 12,936 | 12,471 | 673,741 | 11,347,636 |
| 1991 | 308,269 | 6,024 | 75,796 | 566,573 | 69,966 | 9,799,882 | 13,762 | 12,471 | 673,741 | 11,526,485 |
| 1992 | 333,024 | 6,024 | 78,990 | 597,260 | 74,817 | 9,799,882 | 14,756 | 12,471 | 673,741 | 11,590,965 |
| 1993 | 333,024 | 6,024 | 80,482 | 610,123 | 76,657 | 9,799,882 | 15,124 | 12,471 | 673,741 | 11,607,528 |
| 1994 | 333,024 | 6,024 | 82,105 | 619,494 | 77,936 | 9,799,882 | 15,397 | 12,471 | 673,741 | 11,620,074 |
| 1995 | 333,024 | 6,024 | 83,398 | 626,231 | 78,890 | 9,799,882 | 15,608 | 12,471 | 673,741 | 11,629,269 |
| 1996 | 308,033 | 6,024 | 87,367 | 635,384 | 80,221 | 9,463,127 | 15,961 | 12,471 | 673,741 | 11,282,330 |
| 1997 | 308,033 | 6,024 | 90,231 | 639,177 | 80,707 | 9,394,272 | 16,133 | 12,471 | 673,741 | 11,220,788 |
| 1998 | 308,032 | 6,024 | 92,940 | 652,602 | 82,732 | 9,142,121 | 16,588 | 12,471 | 673,741 | 10,987,252 |
| 1999 | 308,032 | 6,024 | 94,237 | 659,509 | 83,778 | 9,142,121 | 16,823 | 12,471 | 673,741 | 10,996,737 |
| 2000 | 308,032 | 6,024 | 95,750 | 667,629 | 85,008 | 8,493,531 | 17,096 | 12,471 | 673,741 | 10,359,283 |
| 2001 | 308,032 | 6,024 | 96,315 | 670,255 | 85,354 | 8,354,688 | 17,172 | 12,471 | 673,741 | 10,224,051 |
| 2002 | 331,404 | 6,024 | 96,772 | 672,352 | 85,648 | 8,354,688 | 17,237 | 12,471 | 632,792 | 10,209,387 |
| 2003 | 331,404 | 6,024 | 97,882 | 681,983 | 87,121 | 8,354,688 | 17,536 | 12,471 | 630,456 | 10,219,565 |
| 2004 | 331,404 | 6,024 | 98,185 | 684,250 | 87,449 | 8,341,997 | 46,799 | 12,471 | 543,448 | 10,152,027 |
| 2005 | 331,404 | 6,024 | 98,434 | 686,336 | 87,746 | 8,341,997 | 46,862 | 12,471 | 543,448 | 10,154,721 |
| 2006 | 331,404 | 6,024 | 99,039 | 692,288 | 88,653 | 8,341,997 | 48,827 | 12,471 | 541,668 | 10,162,371 |
| 2007 | 331,404 | 6,024 | 99,161 | 694,170 | 88,828 | 8,341,997 | 48,863 | 12,471 | 541,668 | 10,164,586 |
| 2008 | 331,404 | 6,024 | 99,425 | 696,491 | 89,095 | 8,341,997 | 48,918 | 12,471 | 541,668 | 10,167,493 |
| 2009 | 331,404 | 6,024 | 100,163 | 703,240 | 90,159 | 8,341,997 | 49,136 | 12,471 | 541,668 | 10,176,262 |
| 2010 | 291,003 | 6,024 | 100,376 | 706,426 | 90,427 | 8,158,759 | 49,190 | 12,471 | 500,792 | 9,915,469 |
| 2011 | 291,003 | 6,024 | 102,805 | 710,984 | 90,907 | 8,158,759 | 49,363 | 12,471 | 500,792 | 9,923,108 |
| 2012 | 291,003 | 6,024 | 106,293 | 715,917 | 91,573 | 8,158,759 | 49,606 | 12,471 | 500,792 | 9,932,438 |
| 2013 | 291,003 | 6,024 | 107,943 | 722,275 | 92,412 | 8,158,759 | 49,800 | 12,471 | 500,792 | 9,941,478 |
| 2014 | 279,500 | 6,024 | 110,313 | 750,222 | 96,289 | 8,158,759 | 50,601 | 12,471 | 492,319 | 9,956,497 |
| 2015 | 262,186 | 6,024 | 114,147 | 713,262 | 90,995 | 8,158,759 | 51,541 | 12,471 | 492,319 | 9,901,704 |
| 2016 | 262,186 | 6,024 | 112,784 | 676,928 | 85,839 | 8,158,759 | 52,154 | 12,471 | 492,319 | 9,859,464 |
| 2017 | 262,186 | 6,024 | 105,198 | 604,508 | 71,952 | 8,158,759 | 52,969 | 12,471 | 492,319 | 9,766,386 |
| 2018 | 262,186 | 6,024 | 91,598 | 537,844 | 62,674 | 8,158,759 | 44,833 | 12,471 | 492,319 | 9,668,708 |
| 2019 | 262,186 | 6,024 | 96,650 | 532,602 | 66,821 | 8,158,759 | 45,937 | 12,471 | 492,319 | 9,673,768 |
| 2020 | 264,091 | 6,024 | 121,532 | 577,698 | 76,107 | 8,553,853 | 48,061 | 12,471 | 492,319 | 10,152,156 |
| 2021 | 264,091 | 6,024 | 137,781 | 640,344 | 87,311 | 8,553,853 | 50,538 | 12,471 | 492,319 | 10,244,732 |
| 2022 | 264,091 | 6,024 | 169,879 | 796,072 | 108,995 | 8,553,853 | 55,134 | 12,471 | 492,319 | 10,458,838 |
| 2023 | 264,091 | 6,024 | 169,454 | 791,850 | 108,821 | 8,553,853 | 55,091 | 12,471 | 492,319 | 10,453,975 |
| 2024 | 264,091 | 6,024 | 168,934 | 789,814 | 108,721 | 8,553,853 | 55,058 | 12,471 | 492,319 | 10,451,285 |
| 2025 | 264,091 | 6,024 | 168,372 | 787,501 | 108,580 | 8,553,853 | 55,016 | 12,471 | 492,319 | 10,448,226 |
| 2026 | 264,091 | 6,024 | 168,104 | 785,644 | 108,391 | 8,553,853 | 54,975 | 12,471 | 492,319 | 10,445,872 |
| 2027 | 264,091 | 6,024 | 167,462 | 782,940 | 108,104 | 8,553,853 | 54,913 | 12,471 | 492,319 | 10,442,178 |
| 2028 | 264,091 | 6,024 | 165,028 | 781,082 | 107,913 | 8,553,853 | 54,808 | 12,471 | 492,319 | 10,437,590 |
| 2029 | 264,091 | 6,024 | 164,713 | 778,321 | 107,578 | 8,553,853 | 54,742 | 12,471 | 492,319 | 10,434,112 |
| 2030 | 264,091 | 6,024 | 164,425 | 775,578 | 107,242 | 8,553,853 | 54,671 | 12,471 | 492,319 | 10,430,673 |
| 2031 | 264,091 | 6,024 | 162,838 | 759,184 | 105,300 | 8,553,853 | 54,262 | 12,471 | 492,319 | 10,410,342 |
| 2032 | 264,091 | 6,024 | 162,828 | 761,464 | 105,362 | 8,553,853 | 54,276 | 12,471 | 492,319 | 10,412,687 |
| 2033 | 264,091 | 6,024 | 162,491 | 757,223 | 104,693 | 8,553,853 | 54,143 | 12,471 | 492,319 | 10,407,307 |
| 2034 | 264,091 | 6,024 | 161,874 | 751,596 | 103,986 | 8,553,853 | 53,994 | 12,471 | 492,319 | 10,400,209 |
| 2035 | 264,091 | 6,024 | 161,145 | 743,713 | 102,827 | 8,553,853 | 53,758 | 12,471 | 492,319 | 10,390,201 |
| TOTAL | 17,779,623 | 399,592 | 6,914,735 | 42,455,891 | 5,466,657 | 505,263,537 | 2,117,563 | 771,939 | 33,731,461 | 614,900,999 |

^aUnadjusted for prior overpayments or underpayments of charges.^bDetermined at the current Project Interest Rate of 4.610 percent per annum.^cReflects the transfers of permanent aqueduct capacity among contractors.^dCharges under Amendment 18 of the water supply contract with Kern County Water Agency.

TABLE B-15 Capital Cost Component of Transportation Charge for Each Contractor (in dollars)^{a,b,c}

Sheet 3 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|--------------------|-------------------|--------------------|------------------|------------------|----------------|-------------------|------------------|-------------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] | [30] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 34,411 | 0 | 0 | 726 | 0 | 0 | 0 | 51,729 | 0 | 0 |
| 1964 | 64,494 | 19,542 | 4,370 | 38,211 | 1,143 | 31,079 | 8,205 | 82,811 | 34,987 | 21,735 |
| 1965 | 121,484 | 34,348 | 7,194 | 42,701 | 2,082 | 55,096 | 15,222 | 135,069 | 35,344 | 21,866 |
| 1966 | 221,012 | 62,476 | 12,478 | 76,886 | 3,753 | 99,564 | 27,679 | 232,502 | 61,465 | 37,964 |
| 1967 | 427,622 | 121,269 | 23,472 | 148,839 | 7,284 | 193,330 | 54,023 | 433,350 | 115,574 | 71,283 |
| 1968 | 689,327 | 206,952 | 38,551 | 245,877 | 11,781 | 322,011 | 87,293 | 729,849 | 194,527 | 120,094 |
| 1969 | 1,003,797 | 318,583 | 57,301 | 368,426 | 17,249 | 485,280 | 127,219 | 1,136,415 | 302,649 | 187,059 |
| 1970 | 1,312,832 | 451,031 | 84,796 | 520,243 | 23,427 | 675,801 | 171,297 | 1,691,461 | 443,708 | 275,010 |
| 1971 | 1,581,850 | 595,102 | 120,210 | 700,914 | 28,845 | 894,822 | 208,821 | 2,394,083 | 619,778 | 385,025 |
| 1972 | 1,720,363 | 671,098 | 137,454 | 795,465 | 31,306 | 1,014,863 | 226,497 | 2,808,504 | 720,983 | 448,055 |
| 1973 | 1,772,377 | 696,065 | 142,143 | 825,044 | 32,281 | 1,054,311 | 233,340 | 2,945,564 | 756,530 | 470,185 |
| 1974 | 1,791,355 | 707,278 | 146,331 | 839,031 | 32,602 | 1,069,167 | 235,688 | 3,035,230 | 777,084 | 483,259 |
| 1975 | 1,815,881 | 724,295 | 150,105 | 861,611 | 33,017 | 1,099,601 | 238,700 | 3,117,604 | 798,777 | 496,722 |
| 1976 | 1,829,760 | 736,112 | 152,796 | 878,290 | 33,269 | 1,121,547 | 240,431 | 3,195,714 | 819,552 | 509,650 |
| 1977 | 1,842,615 | 744,718 | 154,692 | 890,124 | 33,485 | 1,137,831 | 242,010 | 3,244,723 | 832,585 | 517,741 |
| 1978 | 1,853,320 | 750,463 | 156,009 | 898,031 | 33,676 | 1,149,382 | 243,377 | 3,274,845 | 840,506 | 522,656 |
| 1979 | 1,869,355 | 756,140 | 157,141 | 904,987 | 33,943 | 1,159,884 | 245,346 | 3,296,693 | 846,199 | 526,178 |
| 1980 | 1,888,324 | 762,012 | 158,251 | 912,220 | 34,247 | 1,170,906 | 247,607 | 3,317,247 | 851,720 | 529,583 |
| 1981 | 1,987,339 | 796,384 | 164,015 | 950,529 | 35,899 | 1,223,376 | 259,877 | 3,421,183 | 879,634 | 546,787 |
| 1982 | 1,978,809 | 789,720 | 163,563 | 945,667 | 35,768 | 1,217,645 | 258,879 | 3,413,856 | 877,416 | 545,445 |
| 1983 | 2,061,590 | 809,319 | 167,582 | 971,692 | 37,104 | 1,253,103 | 268,895 | 3,486,248 | 897,190 | 557,607 |
| 1984 | 2,171,231 | 834,564 | 173,473 | 1,006,034 | 38,871 | 1,294,093 | 282,134 | 3,594,542 | 926,815 | 575,830 |
| 1985 | 2,251,676 | 851,720 | 177,807 | 1,031,452 | 40,260 | 1,327,705 | 291,738 | 3,673,311 | 948,379 | 589,089 |
| 1986 | 2,299,323 | 863,875 | 180,992 | 1,049,921 | 40,927 | 1,361,217 | 297,214 | 3,730,198 | 963,927 | 598,648 |
| 1987 | 2,344,046 | 876,261 | 183,970 | 1,068,826 | 41,390 | 1,377,991 | 301,992 | 3,783,895 | 978,588 | 607,664 |
| 1988 | 2,362,143 | 885,509 | 186,235 | 1,083,080 | 41,677 | 1,397,491 | 304,089 | 3,824,257 | 989,568 | 614,418 |
| 1989 | 2,376,030 | 889,631 | 187,412 | 1,088,857 | 41,852 | 1,405,673 | 305,475 | 3,846,509 | 995,456 | 618,059 |
| 1990 | 2,432,706 | 912,986 | 192,472 | 1,118,024 | 42,727 | 1,444,103 | 312,010 | 3,918,238 | 1,014,854 | 629,934 |
| 1991 | 2,469,661 | 932,659 | 197,604 | 1,147,282 | 43,112 | 1,480,538 | 315,536 | 3,997,480 | 1,036,359 | 643,118 |
| 1992 | 2,514,880 | 953,475 | 203,996 | 1,179,589 | 43,744 | 1,520,032 | 320,432 | 4,102,102 | 1,064,912 | 660,626 |
| 1993 | 2,549,874 | 969,784 | 210,989 | 1,203,773 | 44,253 | 1,547,718 | 324,519 | 4,213,571 | 1,095,444 | 679,343 |
| 1994 | 2,585,113 | 983,985 | 220,171 | 1,223,934 | 44,800 | 1,567,859 | 328,488 | 4,420,076 | 1,151,617 | 714,062 |
| 1995 | 2,611,217 | 992,587 | 225,248 | 1,236,069 | 45,193 | 1,580,418 | 331,367 | 4,547,097 | 1,186,123 | 735,431 |
| 1996 | 2,637,094 | 1,001,843 | 229,526 | 1,248,440 | 45,599 | 1,594,141 | 334,344 | 4,654,074 | 1,215,084 | 753,512 |
| 1997 | 2,654,359 | 1,010,118 | 232,003 | 1,258,944 | 45,868 | 1,606,941 | 336,316 | 4,875,746 | 1,268,666 | 812,976 |
| 1998 | 2,679,335 | 1,017,568 | 233,373 | 1,268,786 | 46,279 | 2,132,672 | 339,344 | 5,036,613 | 1,290,750 | 919,464 |
| 1999 | 2,692,811 | 1,022,130 | 235,684 | 1,274,800 | 46,503 | 2,140,101 | 341,005 | 5,243,553 | 1,307,788 | 1,100,324 |
| 2000 | 2,708,447 | 1,028,194 | 237,960 | 1,283,376 | 46,776 | 2,151,003 | 406,117 | 5,508,323 | 1,321,137 | 1,362,827 |
| 2001 | 2,716,761 | 1,032,076 | 239,333 | 1,288,723 | 46,930 | 2,157,953 | 407,321 | 6,110,494 | 1,330,966 | 2,037,076 |
| 2002 | 2,742,188 | 1,035,440 | 240,242 | 1,293,682 | 47,103 | 2,164,463 | 408,595 | 7,170,115 | 1,336,562 | 3,267,979 |
| 2003 | 2,754,126 | 1,038,552 | 241,001 | 1,297,752 | 47,280 | 2,170,224 | 410,030 | 7,716,814 | 1,344,434 | 3,883,914 |
| 2004 | 2,758,862 | 1,098,262 | 241,460 | 1,300,295 | 47,354 | 2,173,781 | 410,649 | 7,957,548 | 1,347,676 | 4,152,164 |
| 2005 | 2,763,974 | 6,718,977 | 241,849 | 2,061,704 | 47,442 | 2,177,406 | 411,365 | 8,084,691 | 1,350,250 | 4,286,386 |
| 2006 | 2,778,646 | 6,787,984 | 242,717 | 2,075,530 | 47,688 | 2,185,333 | 413,412 | 8,145,551 | 1,354,649 | 4,333,741 |
| 2007 | 2,800,444 | 6,917,263 | 244,290 | 2,099,752 | 48,040 | 2,198,620 | 416,609 | 8,271,611 | 1,361,754 | 4,445,041 |
| 2008 | 2,817,583 | 7,042,060 | 245,693 | 2,122,376 | 48,330 | 2,209,477 | 419,124 | 8,407,335 | 1,368,660 | 4,579,551 |
| 2009 | 2,828,079 | 7,133,861 | 249,637 | 2,141,770 | 48,511 | 2,215,654 | 420,531 | 8,625,849 | 1,385,750 | 4,761,640 |
| 2010 | 2,867,984 | 7,525,765 | 253,621 | 2,243,922 | 49,160 | 2,284,004 | 426,388 | 8,941,515 | 1,403,681 | 5,042,526 |
| 2011 | 2,913,591 | 7,700,044 | 257,857 | 2,287,845 | 49,889 | 2,319,963 | 433,007 | 9,309,991 | 1,422,953 | 5,399,634 |
| 2012 | 2,938,784 | 7,847,826 | 261,954 | 2,332,188 | 50,285 | 2,357,913 | 436,518 | 9,845,592 | 1,442,809 | 5,953,698 |
| 2013 | 2,924,511 | 8,035,213 | 268,157 | 2,380,279 | 50,643 | 2,410,647 | 439,271 | 10,642,119 | 1,461,146 | 6,819,613 |
| 2014 | 2,973,962 | 8,353,055 | 270,411 | 2,454,371 | 50,608 | 2,434,019 | 438,775 | 13,111,861 | 1,488,365 | 9,623,224 |
| 2015 | 2,984,293 | 8,507,051 | 272,385 | 2,487,077 | 50,859 | 2,468,717 | 440,429 | 15,365,656 | 1,504,822 | 12,225,190 |
| 2016 | 2,969,005 | 9,025,602 | 272,458 | 2,559,062 | 50,727 | 2,473,154 | 439,589 | 16,622,089 | 1,508,403 | 13,698,450 |
| 2017 | 2,873,009 | 9,954,224 | 267,057 | 2,654,544 | 49,057 | 2,431,455 | 427,347 | 17,990,121 | 1,484,596 | 15,406,486 |
| 2018 | 2,678,180 | 10,203,428 | 255,356 | 2,624,220 | 45,680 | 2,314,403 | 399,187 | 18,239,901 | 1,421,586 | 15,944,273 |
| 2019 | 2,463,091 | 10,165,942 | 242,478 | 2,541,533 | 41,846 | 2,165,143 | 366,473 | 18,236,850 | 1,350,937 | 16,213,621 |
| 2020 | 2,301,524 | 10,205,983 | 227,081 | 2,467,447 | 38,256 | 2,043,595 | 336,027 | 17,980,995 | 1,278,594 | 16,184,312 |
| 2021 | 2,211,841 | 10,280,153 | 203,216 | 2,374,182 | 35,842 | 1,889,282 | 317,394 | 17,542,231 | 1,164,108 | 16,129,875 |
| 2022 | 2,463,002 | 11,119,414 | 208,484 | 2,528,076 | 39,871 | 1,978,282 | 351,095 | 17,601,170 | 1,180,480 | 16,158,396 |
| 2023 | 2,410,989 | 10,415,654 | 203,795 | 2,406,809 | 38,896 | 1,932,885 | 343,058 | 17,464,110 | 1,144,933 | 16,136,266 |
| 2024 | 2,392,011 | 10,299,086 | 199,607 | 2,378,591 | 38,575 | 1,916,349 | 340,247 | 17,374,444 | 1,124,378 | 16,123,192 |
| 2025 | 2,367,484 | 10,183,832 | 195,832 | 2,342,742 | 38,160 | 1,884,579 | 336,671 | 17,292,070 | 1,102,686 | 16,109,729 |
| 2026 | 2,353,606 | 10,079,963 | 193,142 | 2,313,629 | 37,908 | 1,861,862 | 334,652 | 17,213,960 | 1,081,910 | 16,096,801 |
| 2027 | 2,340,750 | 10,003,612 | 191,246 | 2,292,643 | 37,692 | 1,845,423 | 332,840 | 17,164,951 | 1,068,877 | 16,088,710 |
| 2028 | 2,330,045 | 9,966,394 | 189,929 | 2,280,485 | 37,501 | 1,834,563 | 331,323 | 17,134,829 | 1,060,956 | 16,083,795 |
| 2029 | 2,314,011 | 9,934,064 | 188,797 | 2,269,929 | 37,234 | 1,824,177 | 329,110 | 17,112,981 | 1,055,263 | 16,080,273 |
| 2030 | 2,295,042 | 9,907,477 | 187,687 | 2,259,898 | 36,930 | 1,813,277 | 326,596 | 17,092,427 | 1,049,742 | 16,076,868 |
| 2031 | 2,196,027 | 9,768,866 | 181,923 | 2,207,510 | 35,278 | 1,751,281 | 312,434 | 16,988,491 | 1,021,828 | 16,059,664 |
| 2032 | 2,204,556 | 9,781,669 | 182,375 | 2,213,201 | 35,409 | 1,762,510 | 314,066 | 16,995,818 | 1,024,047 | 16,061,006 |
| 2033 | 2,121,775 | 9,700,138 | 178,356 | 2,178,810 | 34,073 | 1,725,099 | 303,401 | 16,923,426 | 1,004,272 | 16,048,844 |
| 2034 | 2,012,134 | 9,587,582 | 172,465 | 2,132,675 | 32,306 | 1,677,021 | 289,412 | 16,815,133 | 974,648 | 16,030,621 |
| 2035 | 1,931,690 | 9,503,656 | 168,131 | 2,098,238 | 30,917 | 1,643,337 | 279,514 | 16,736,363 | 953,084 | 16,017,362 |
| TOTAL | 160,001,421 | 313,639,965 | 13,587,392 | 109,578,187 | 2,744,272 | | | | | |

TABLE B-15 Capital Cost Component of Transportation Charge for Each Contractor (in dollars)^{a,b,c}

Sheet 4 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | South Bay Area Future Contractor | Grand Total |
|---------------|--------------------------------------|----------------------|-------------------|----------------------|--------------------|----------|----------------|----------------|----------------------------------|----------------------|
| | Santa Clarita ^e | Metropolitan | Ventura | Total | Yuba City | Butte | Plumas | Total | | |
| 1961 | [31] | [32] | 0 | 0 | [35] | [36] | 0 | 0 | [39] | [40] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 690,812 | 0 | 777,678 | 0 | 0 | 0 | 0 | 0 | 1,396,150 |
| 1964 | 27,447 | 1,260,513 | 9,378 | 1,603,916 | 0 | 0 | 0 | 0 | 0 | 2,544,339 |
| 1965 | 53,007 | 2,180,589 | 17,766 | 2,721,767 | 0 | 0 | 405 | 405 | 0 | 4,285,586 |
| 1966 | 101,264 | 3,900,172 | 33,426 | 4,870,643 | 0 | 0 | 565 | 565 | 0 | 6,800,626 |
| 1967 | 210,814 | 7,693,703 | 68,155 | 9,568,718 | 0 | 0 | 562 | 562 | 0 | 11,968,199 |
| 1968 | 420,944 | 14,345,147 | 133,299 | 17,545,653 | 0 | 0 | 564 | 564 | 0 | 21,198,579 |
| 1969 | 625,972 | 21,857,456 | 202,599 | 26,690,005 | 0 | 0 | 3,191 | 3,191 | 0 | 31,420,155 |
| 1970 | 783,380 | 28,992,595 | 257,859 | 35,683,439 | 0 | 0 | 15,121 | 15,121 | 0 | 40,703,222 |
| 1971 | 951,376 | 37,242,413 | 316,307 | 46,039,546 | 0 | 0 | 15,947 | 15,947 | 0 | 51,503,526 |
| 1972 | 1,062,850 | 44,062,125 | 353,935 | 54,053,498 | 0 | 0 | 17,332 | 17,332 | 0 | 60,733,370 |
| 1973 | 1,078,260 | 46,299,581 | 357,342 | 56,663,021 | 0 | 0 | 17,333 | 17,333 | 0 | 63,344,445 |
| 1974 | 1,125,712 | 48,322,678 | 372,112 | 58,937,527 | 0 | 0 | 17,334 | 17,334 | 0 | 66,171,543 |
| 1975 | 1,141,653 | 49,285,084 | 376,511 | 60,139,561 | 0 | 0 | 17,337 | 17,337 | 0 | 68,089,923 |
| 1976 | 1,154,981 | 50,137,295 | 380,788 | 61,190,183 | 0 | 0 | 17,338 | 17,338 | 0 | 69,234,757 |
| 1977 | 1,169,003 | 50,827,166 | 385,097 | 62,021,791 | 0 | 0 | 17,340 | 17,340 | 0 | 70,431,933 |
| 1978 | 1,189,229 | 51,426,581 | 390,742 | 62,728,817 | 0 | 0 | 17,342 | 17,342 | 0 | 71,667,571 |
| 1979 | 1,214,452 | 52,230,344 | 399,649 | 63,640,310 | 0 | 0 | 17,344 | 17,344 | 0 | 73,143,840 |
| 1980 | 1,263,580 | 53,637,412 | 417,136 | 65,190,244 | 0 | 0 | 17,345 | 17,345 | 0 | 75,214,133 |
| 1981 | 1,355,570 | 56,667,437 | 449,812 | 68,737,842 | 0 | 0 | 17,346 | 17,346 | 0 | 79,409,011 |
| 1982 | 1,388,038 | 57,465,063 | 461,234 | 69,541,102 | 0 | 0 | 17,348 | 17,348 | 0 | 80,723,204 |
| 1983 | 1,433,485 | 59,037,472 | 477,333 | 71,458,621 | 0 | 0 | 17,348 | 17,348 | 0 | 82,864,190 |
| 1984 | 1,461,017 | 60,313,580 | 486,863 | 73,159,045 | 0 | 0 | 17,349 | 17,349 | 0 | 85,411,650 |
| 1985 | 1,477,442 | 61,144,629 | 492,117 | 74,297,324 | 0 | 0 | 17,351 | 17,351 | 0 | 87,261,961 |
| 1986 | 1,486,878 | 61,666,346 | 494,977 | 75,034,444 | 0 | 0 | 17,352 | 17,352 | 0 | 89,136,010 |
| 1987 | 1,493,622 | 62,094,710 | 496,758 | 75,649,713 | 0 | 0 | 17,354 | 17,354 | 0 | 92,047,357 |
| 1988 | 1,500,344 | 62,452,912 | 498,619 | 76,140,344 | 0 | 0 | 17,355 | 17,355 | 0 | 94,172,893 |
| 1989 | 1,510,293 | 62,796,236 | 501,579 | 76,563,063 | 0 | 0 | 17,358 | 17,358 | 0 | 95,419,062 |
| 1990 | 1,533,901 | 63,762,459 | 509,566 | 77,823,980 | 0 | 0 | 17,360 | 17,360 | 0 | 97,173,805 |
| 1991 | 1,553,548 | 64,677,355 | 516,147 | 79,010,399 | 0 | 0 | 17,364 | 17,364 | 0 | 98,760,510 |
| 1992 | 1,574,794 | 65,776,353 | 523,154 | 80,438,089 | 0 | 0 | 17,367 | 17,367 | 0 | 100,493,949 |
| 1993 | 1,593,801 | 66,905,041 | 529,383 | 81,867,494 | 0 | 0 | 17,369 | 17,369 | 0 | 102,198,719 |
| 1994 | 1,611,623 | 68,486,622 | 535,055 | 83,873,405 | 0 | 0 | 17,370 | 17,370 | 0 | 104,972,560 |
| 1995 | 1,620,583 | 69,373,540 | 537,812 | 85,022,684 | 0 | 0 | 17,371 | 17,371 | 0 | 108,900,476 |
| 1996 | 1,636,591 | 70,251,056 | 541,753 | 86,143,057 | 0 | 0 | 17,371 | 17,371 | 0 | 118,847,225 |
| 1997 | 1,647,978 | 71,530,953 | 544,467 | 87,825,335 | 0 | 0 | 17,371 | 17,371 | 0 | 129,114,189 |
| 1998 | 1,661,865 | 72,283,436 | 548,490 | 89,457,976 | 0 | 0 | 0 | 0 | 0 | 132,824,822 |
| 1999 | 1,673,250 | 72,917,423 | 552,184 | 90,547,556 | 0 | 0 | 0 | 0 | 0 | 134,576,235 |
| 2000 | 2,827,207 | 73,432,162 | 555,279 | 92,868,808 | 0 | 0 | 0 | 0 | 0 | 137,046,762 |
| 2001 | 2,833,148 | 73,741,965 | 556,658 | 94,499,404 | 0 | 0 | 0 | 0 | 0 | 139,467,034 |
| 2002 | 2,836,441 | 73,915,736 | 557,417 | 97,015,964 | 0 | 0 | 0 | 0 | 0 | 142,141,543 |
| 2003 | 2,844,956 | 74,256,539 | 559,749 | 98,565,372 | 0 | 0 | 17,375 | 17,375 | 0 | 144,238,966 |
| 2004 | 2,848,179 | 74,601,782 | 560,566 | 99,498,580 | 0 | 0 | 17,375 | 17,375 | 0 | 145,590,133 |
| 2005 | 2,852,108 | 68,499,909 | 561,532 | 100,057,592 | 0 | 0 | 17,375 | 17,375 | 0 | 146,468,570 |
| 2006 | 2,862,860 | 68,876,841 | 564,172 | 100,669,125 | 0 | 0 | 17,375 | 17,375 | 0 | 147,231,547 |
| 2007 | 2,888,471 | 69,605,880 | 569,809 | 101,867,584 | 0 | 0 | 17,376 | 17,376 | 0 | 148,601,235 |
| 2008 | 2,907,130 | 70,216,830 | 573,969 | 102,958,118 | 0 | 0 | 17,376 | 17,376 | 0 | 150,163,467 |
| 2009 | 2,922,953 | 70,888,202 | 577,886 | 104,200,324 | 0 | 0 | 17,376 | 17,376 | 0 | 152,432,506 |
| 2010 | 2,959,338 | 72,113,606 | 585,961 | 106,697,471 | 0 | 0 | 17,376 | 17,376 | 0 | 155,653,509 |
| 2011 | 2,995,611 | 73,157,328 | 593,207 | 108,840,921 | 0 | 0 | 17,376 | 17,376 | 0 | 159,367,557 |
| 2012 | 3,017,002 | 73,889,550 | 597,040 | 110,971,157 | 0 | 0 | 17,376 | 17,376 | 0 | 162,906,624 |
| 2013 | 3,030,492 | 74,246,181 | 600,058 | 113,308,329 | 0 | 0 | 17,376 | 17,376 | 0 | 165,659,681 |
| 2014 | 3,028,900 | 75,382,413 | 598,708 | 120,208,671 | 0 | 0 | 17,376 | 17,376 | 0 | 172,970,429 |
| 2015 | 3,040,161 | 75,925,119 | 599,721 | 125,871,480 | 0 | 0 | 16,972 | 16,972 | 0 | 178,228,352 |
| 2016 | 3,038,554 | 76,766,861 | 596,567 | 130,020,523 | 0 | 0 | 16,812 | 16,812 | 0 | 182,441,075 |
| 2017 | 2,969,479 | 77,000,665 | 579,002 | 134,087,041 | 0 | 0 | 16,814 | 16,814 | 0 | 186,299,169 |
| 2018 | 2,737,192 | 72,878,178 | 526,473 | 130,268,058 | 0 | 0 | 16,812 | 16,812 | 0 | 182,074,163 |
| 2019 | 2,525,853 | 68,337,787 | 476,012 | 125,127,567 | 0 | 0 | 14,185 | 14,185 | 0 | 176,932,460 |
| 2020 | 2,441,642 | 65,995,221 | 451,921 | 121,952,597 | 0 | 0 | 2,256 | 2,256 | 0 | 174,644,838 |
| 2021 | 2,383,504 | 64,355,653 | 440,020 | 119,327,300 | 0 | 0 | 1,429 | 1,429 | 0 | 173,004,424 |
| 2022 | 2,599,108 | 70,769,883 | 494,033 | 127,491,293 | 0 | 0 | 44 | 44 | 0 | 183,024,923 |
| 2023 | 2,591,383 | 69,302,909 | 490,627 | 124,882,313 | 0 | 0 | 43 | 43 | 0 | 180,367,677 |
| 2024 | 2,532,510 | 67,399,397 | 475,856 | 122,594,243 | 0 | 0 | 42 | 42 | 0 | 178,064,397 |
| 2025 | 2,514,646 | 66,548,497 | 471,458 | 121,388,385 | 0 | 0 | 40 | 40 | 0 | 176,830,662 |
| 2026 | 2,496,397 | 65,800,772 | 467,181 | 120,331,784 | 0 | 0 | 39 | 39 | 0 | 175,753,545 |
| 2027 | 2,477,886 | 65,187,797 | 462,871 | 119,495,299 | 0 | 0 | 36 | 36 | 0 | 174,887,282 |
| 2028 | 2,450,050 | 64,624,107 | 457,226 | 118,781,203 | 0 | 0 | 35 | 35 | 0 | 174,129,074 |
| 2029 | 2,411,737 | 63,850,596 | 448,320 | 117,856,492 | 0 | 0 | 33 | 33 | 0 | 173,168,732 |
| 2030 | 2,334,523 | 62,467,041 | 430,832 | 116,278,342 | 0 | 0 | 32 | 32 | 0 | 171,541,457 |
| 2031 | 2,191,470 | 59,555,335 | 398,156 | 112,668,263 | 0 | 0 | 30 | 30 | 0 | 167,814,017 |
| 2032 | 2,139,965 | 58,750,742 | 386,735 | 111,852,098 | 0 | 0 | 29 | 29 | 0 | 166,980,553 |
| 2033 | 2,067,414 | 57,248,629 | 370,635 | 109,904,873 | 0 | 0 | 28 | 28 | 0 | 164,948,204 |
| 2034 | 2,025,177 | 56,071,627 | 361,105 | 108,181,904 | 0 | 0 | 27 | 27 | 0 | 163,026,462 |
| 2035 | 2,003,456 | 55,316,366 | 355,851 | 107,037,965 | 0 | 0 | 26 | 26 | 0 | 161,533,642 |
| TOTAL | 138,415,452 | 4,264,972,397 | 32,522,021 | 6,270,284,237 | 0 | 0 | 781,778 | 781,778 | 0 | 8,639,794,396 |

^aUnadjusted for prior overpayments or underpayments of charges.^bDetermined at the current Project Interest Rate of 4.610 percent per annum.^cReflects the transfers of permanent aqueduct capacity among contractors.^eCastaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-16A Minimum OMP&R Component of Transportation Charge for Each Contractor (in dollars)

Sheet 1 of 4

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA | | | CENTRAL COASTAL AREA | | | |
|---------------|-------------------|--------------------|--------------------|------------------|--------------------|-------------------|----------------------|--------------------|-------------------|--------------------|
| | Napa | Solano | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] |
| 1961 | 0 | 0 | 0 | 0 | 9,699 | 8,868 | 21,132 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 38,048 | 34,788 | 82,896 | 155,732 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 41,148 | 38,323 | 91,320 | 170,791 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 78,529 | 75,616 | 195,793 | 349,937 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 79,753 | 78,779 | 218,543 | 377,076 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 127,896 | 123,667 | 335,224 | 586,787 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 130 | 126,058 | 120,563 | 333,506 | 580,128 | 11,800 |
| 1968 | 130 | 0 | 130 | 0 | 130 | 122,407 | 117,483 | 334,366 | 574,256 | 21,770 |
| 1969 | 80,875 | 0 | 80,875 | 0 | 80,875 | 145,411 | 138,050 | 372,585 | 656,046 | 63,113 |
| 1970 | 94,872 | 0 | 94,872 | 0 | 94,872 | 128,993 | 120,245 | 320,664 | 569,902 | 74,187 |
| 1971 | 45,579 | 0 | 45,579 | 0 | 45,579 | 113,071 | 108,346 | 296,004 | 517,421 | 74,011 |
| 1972 | 37,895 | 0 | 37,895 | 0 | 37,895 | 122,407 | 117,483 | 334,366 | 574,256 | 79,196 |
| 1973 | 32,993 | 0 | 32,993 | 0 | 32,993 | 122,738 | 116,785 | 325,726 | 565,250 | 75,714 |
| 1974 | 46,498 | 0 | 46,498 | 0 | 46,498 | 154,435 | 146,929 | 403,080 | 704,444 | 76,530 |
| 1975 | 37,707 | 0 | 37,707 | 0 | 37,707 | 189,175 | 182,087 | 513,823 | 885,086 | 92,605 |
| 1976 | 60,786 | 0 | 60,786 | 0 | 60,786 | 203,064 | 193,435 | 524,813 | 921,312 | 94,935 |
| 1977 | 78,400 | 0 | 78,400 | 0 | 78,400 | 179,869 | 169,065 | 500,101 | 849,035 | 102,945 |
| 1978 | 56,318 | 0 | 56,318 | 0 | 56,318 | 239,301 | 228,855 | 647,828 | 1,115,984 | 104,060 |
| 1979 | 73,852 | 0 | 73,852 | 0 | 73,852 | 236,986 | 232,105 | 666,742 | 1,135,833 | 100,748 |
| 1980 | 81,769 | 0 | 81,769 | 0 | 81,769 | 389,575 | 372,185 | 1,010,830 | 1,772,591 | 126,328 |
| 1981 | 101,340 | 0 | 101,340 | 0 | 101,340 | 317,408 | 302,272 | 834,257 | 1,453,937 | 140,208 |
| 1982 | 191,987 | 0 | 191,987 | 0 | 191,987 | 386,742 | 369,633 | 1,098,844 | 1,855,219 | 142,045 |
| 1983 | 80,215 | 0 | 80,215 | 0 | 80,215 | 438,536 | 428,973 | 1,269,373 | 2,136,882 | 171,001 |
| 1984 | 106,485 | 0 | 106,485 | 0 | 106,485 | 591,243 | 565,721 | 1,817,629 | 2,974,593 | 201,768 |
| 1985 | 215,341 | 0 | 215,341 | 0 | 215,341 | 674,975 | 655,490 | 1,840,211 | 3,170,677 | 242,935 |
| 1986 | 203,704 | 0 | 203,704 | 0 | 203,704 | 613,273 | 583,077 | 1,784,056 | 2,980,407 | 233,000 |
| 1987 | 295,505 | 0 | 295,505 | 0 | 295,505 | 687,629 | 652,468 | 2,000,817 | 3,340,914 | 230,484 |
| 1988 | 312,677 | (58) | 312,619 | 0 | 312,619 | 676,847 | 655,274 | 1,910,092 | 3,242,213 | 258,807 |
| 1989 | 403,330 | 688,185 | 1,091,515 | 0 | 1,091,515 | 716,831 | 712,354 | 1,897,149 | 3,326,335 | 244,772 |
| 1990 | 658,942 | 674,944 | 1,333,886 | 0 | 1,333,886 | 782,589 | 780,305 | 2,129,966 | 3,692,860 | 310,222 |
| 1991 | 726,717 | 860,903 | 1,587,620 | 0 | 1,587,620 | 543,178 | 524,741 | 1,520,569 | 2,588,488 | 302,369 |
| 1992 | 483,580 | 712,313 | 1,195,893 | 0 | 1,195,893 | 796,058 | 855,050 | 2,253,496 | 3,904,605 | 346,220 |
| 1993 | 524,000 | 708,129 | 1,232,129 | 0 | 1,232,129 | 1,280,736 | 1,261,431 | 3,338,742 | 5,880,908 | 386,060 |
| 1994 | 573,814 | 658,274 | 1,232,087 | 0 | 1,232,087 | 1,368,665 | 1,312,746 | 3,560,310 | 6,241,720 | 481,022 |
| 1995 | 539,407 | 660,770 | 1,200,177 | 0 | 1,200,177 | 1,232,272 | 1,187,201 | 3,216,470 | 5,635,943 | 477,929 |
| 1996 | 604,992 | 1,011,298 | 1,616,291 | 0 | 1,616,291 | 1,185,220 | 1,124,968 | 3,007,330 | 5,317,518 | 649,161 |
| 1997 | 563,579 | 741,881 | 1,305,460 | 0 | 1,305,460 | 1,029,670 | 968,999 | 2,667,649 | 4,666,319 | 406,652 |
| 1998 | 461,844 | 661,193 | 1,123,037 | 0 | 1,123,037 | 1,064,729 | 1,174,897 | 3,502,733 | 5,742,360 | 810,087 |
| 1999 | 613,368 | 1,006,577 | 1,619,945 | 0 | 1,619,945 | 1,243,942 | 1,285,417 | 5,135,770 | 7,665,129 | 795,894 |
| 2000 | 775,919 | 1,493,379 | 2,269,298 | 0 | 2,269,298 | 2,174,141 | 2,195,595 | 3,754,193 | 7,223,929 | 699,789 |
| 2001 | 651,209 | 1,444,040 | 2,095,249 | 0 | 2,095,249 | 4,194,363 | 4,038,206 | 3,544,596 | 8,777,165 | 723,649 |
| 2002 | 1,096,940 | 1,871,456 | 2,968,396 | 0 | 2,968,396 | 8,256,339 | 8,156,061 | 6,055,048 | 15,667,449 | 754,997 |
| 2003 | 1,168,611 | 2,247,438 | 3,416,049 | 0 | 3,416,049 | 4,901,790 | 4,057,275 | 3,547,976 | 9,507,041 | 803,484 |
| 2004 | 1,618,197 | 2,345,860 | 3,964,058 | 0 | 3,964,058 | 2,574,388 | 2,176,799 | 3,528,163 | 7,379,350 | 799,132 |
| 2005 | 916,728 | 1,796,605 | 2,713,333 | 0 | 2,713,333 | 2,391,493 | 1,129,780 | 2,947,359 | 6,468,631 | 848,861 |
| 2006 | 817,736 | 1,387,085 | 2,204,821 | 0 | 2,204,821 | 2,485,436 | 1,206,355 | 3,274,616 | 6,966,407 | 747,607 |
| 2007 | 775,581 | 1,515,649 | 2,291,230 | 0 | 2,291,230 | 3,227,830 | 1,570,041 | 4,009,703 | 8,807,574 | 828,292 |
| 2008 | 1,053,601 | 1,426,052 | 2,479,653 | 0 | 2,479,653 | 3,633,841 | 1,769,386 | 4,491,428 | 9,894,655 | 1,250,946 |
| 2009 | 1,122,119 | 1,795,003 | 2,917,122 | 0 | 2,917,122 | 3,283,903 | 1,489,956 | 4,215,131 | 8,988,991 | 1,090,335 |
| 2010 | 1,192,985 | 3,194,425 | 4,387,410 | 0 | 4,387,410 | 3,137,663 | 1,538,620 | 4,237,360 | 8,913,644 | 1,404,722 |
| 2011 | 1,571,362 | 3,660,619 | 5,231,981 | 0 | 5,231,981 | 3,520,622 | 1,698,478 | 4,537,475 | 9,756,575 | 1,448,698 |
| 2012 | 2,065,436 | 3,562,780 | 5,628,216 | 0 | 5,628,216 | 3,711,359 | 1,772,355 | 6,749,398 | 12,233,112 | 1,442,890 |
| 2013 | 1,508,690 | 3,072,447 | 4,581,137 | 0 | 4,581,137 | 4,220,749 | 1,993,565 | 5,971,884 | 12,186,198 | 1,691,219 |
| 2014 | 1,940,988 | 3,785,988 | 5,726,976 | 0 | 5,726,976 | 4,746,393 | 2,196,963 | 7,318,789 | 14,262,146 | 1,537,540 |
| 2015 | 2,173,227 | 3,624,316 | 5,797,543 | 0 | 5,797,543 | 5,823,368 | 2,159,435 | 8,345,483 | 16,328,286 | 2,029,742 |
| 2016 | 2,698,238 | 4,402,811 | 7,101,049 | 0 | 7,101,049 | 5,209,970 | 1,947,576 | 13,613,547 | 20,771,092 | 1,885,222 |
| 2017 | 1,850,877 | 2,896,162 | 4,747,038 | 0 | 4,747,038 | 5,880,607 | 2,251,650 | 10,322,948 | 18,455,205 | 2,261,861 |
| 2018 | 2,697,474 | 3,728,185 | 6,425,659 | 0 | 6,425,659 | 7,736,002 | 2,855,344 | 10,421,301 | 21,012,646 | 2,378,051 |
| 2019 | 3,361,419 | 4,452,572 | 7,813,991 | 0 | 7,813,991 | 7,360,096 | 2,728,908 | 8,284,162 | 18,373,166 | 2,269,782 |
| 2020 | 2,675,524 | 5,133,417 | 7,808,940 | 7,340,554 | 7,340,554 | 2,735,263 | 8,207,969 | 18,283,786 | 2,191,717 | 11,822,244 |
| 2021 | 2,729,923 | 4,143,544 | 6,873,467 | 0 | 6,873,467 | 7,822,759 | 2,889,267 | 8,596,214 | 19,308,241 | 2,151,387 |
| 2022 | 2,951,676 | 4,622,546 | 7,574,222 | 0 | 7,574,222 | 7,583,335 | 2,812,563 | 8,446,980 | 18,842,878 | 2,226,480 |
| 2023 | 2,954,742 | 4,625,251 | 7,579,993 | 0 | 7,579,993 | 7,585,699 | 2,802,414 | 8,440,318 | 18,828,431 | 2,225,962 |
| 2024 | 2,984,290 | 4,671,503 | 7,655,793 | 0 | 7,655,793 | 7,661,557 | 2,830,438 | 8,524,722 | 19,016,717 | 2,248,222 |
| 2025 | 3,014,133 | 4,718,217 | 7,732,350 | 0 | 7,732,350 | 7,738,172 | 2,858,742 | 8,609,969 | 19,206,883 | 2,270,704 |
| 2026 | 3,044,274 | 4,765,401 | 7,809,674 | 0 | 7,809,674 | 7,815,554 | 2,887,330 | 8,696,068 | 19,398,951 | 2,293,411 |
| 2027 | 3,074,717 | 4,813,053 | 7,887,770 | 0 | 7,887,770 | 7,893,709 | 2,916,203 | 8,783,029 | 19,592,942 | 2,316,345 |
| 2028 | 3,105,464 | 4,861,184 | 7,966,648 | 0 | 7,966,648 | 7,972,647 | 2,945,365 | 8,870,860 | 19,788,872 | 2,339,509 |
| 2029 | 3,136,519 | 4,909,797 | 8,046,315 | 0 | 8,046,315 | 8,052,373 | 2,974,819 | 8,959,568 | 19,986,759 | 2,362,904 |
| 2030 | 3,167,884 | 4,958,894 | 8,126,778 | 0 | 8,126,778 | 8,132,896 | 3,004,567 | 9,049,163 | 20,186,626 | 2,386,533 |
| 2031 | 3,199,562 | 5,008,484 | 8,208,046 | 0 | 8,208,046 | 8,214,226 | 3,034,613 | 9,139,655 | 20,388,493 | 2,410,398 |
| 2032 | 3,231,558 | 5,058,568 | 8,290,126 | 0 | 8,290,126 | 8,296,368 | 3,064,959 | 9,231,051 | 20,592,378 | 2,434,502 |
| 2033 | 3,263,874 | 5,109,154 | 8,373,028 | 0 | 8,373,028 | 8,379,331 | 3,095,608 | 9,323,362 | 20,798,302 | 2,458,847 |
| 2034 | 3,296,512 | 5,160,245 | 8,456,757 | 0 | 8,456,757 | 8,463,125 | 3,126,564 | 9,416,596 | 21,006,285 | 2,483,436 |
| 2035 | 3,329,477 | 5,211,848 | 8,541,325 | 0 | 8,541,325 | 8,547,756 | 3,157,830 | 9,510,762 | 21,216,349 | 2,508,270 |
| TOTAL | 88,605,965 | 139,858,385 | 228,464,350 | | 234,327,117 | 99,476,087 | 312,957,284 | 646,760,489 | 72,112,256 | 353,071,285 |
| | | | | | | | | | | 425,183,542 |

TABLE B-16A Minimum OMP&R Component of Transportation Charge for Each Contractor (in dollars)

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | | |
|---------------|-------------------------|------------------|--------------------------------------|--------------------------|--------------------|------------------|------------------|-------------------|----------------------|
| | Dudley Ridge | Empire | Future Contractor San Joaquin Valley | Kern | | Kings | Oak Flat | Tulare | Total |
| | | | | Municipal and Industrial | Agricultural | | | | |
| [11] | [12] | [13] | [14] | [15] | [16] | [17] | [18] | [19] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 37,806 | 1,963 | 5,639 | 60,701 | 678,086 | 2,008 | 2,073 | 77,591 | 865,867 |
| 1969 | 45,479 | 2,235 | 30,158 | 80,554 | 1,197,126 | 2,286 | 2,085 | 90,773 | 1,450,698 |
| 1970 | 46,969 | 2,292 | 35,450 | 96,673 | 1,381,493 | 2,344 | 2,158 | 93,408 | 1,660,786 |
| 1971 | 47,997 | 2,314 | 35,366 | 106,654 | 1,643,163 | 2,366 | 2,288 | 94,874 | 1,935,021 |
| 1972 | 49,866 | 2,414 | 37,844 | 122,313 | 1,729,169 | 2,469 | 2,254 | 98,777 | 2,045,106 |
| 1973 | 50,006 | 2,385 | 36,180 | 125,553 | 1,719,873 | 2,440 | 2,310 | 98,330 | 2,037,076 |
| 1974 | 52,818 | 2,556 | 36,570 | 135,661 | 1,823,065 | 2,614 | 2,529 | 104,609 | 2,160,424 |
| 1975 | 66,963 | 3,243 | 44,251 | 162,738 | 2,235,242 | 3,317 | 3,191 | 132,663 | 2,651,608 |
| 1976 | 66,504 | 3,328 | 45,364 | 159,303 | 2,215,999 | 3,404 | 2,919 | 133,940 | 2,630,761 |
| 1977 | 75,595 | 3,812 | 49,192 | 189,661 | 2,522,290 | 3,898 | 3,708 | 152,838 | 3,000,994 |
| 1978 | 70,688 | 3,503 | 49,725 | 174,897 | 2,427,163 | 3,583 | 3,644 | 141,672 | 2,874,875 |
| 1979 | 68,879 | 3,436 | 48,142 | 173,677 | 2,378,315 | 3,514 | 3,492 | 138,493 | 2,817,948 |
| 1980 | 95,898 | 4,722 | 59,551 | 235,741 | 3,146,570 | 4,830 | 4,777 | 191,582 | 3,743,671 |
| 1981 | 118,448 | 5,965 | 66,183 | 266,353 | 3,440,557 | 6,099 | 5,187 | 239,323 | 4,148,116 |
| 1982 | 134,083 | 6,711 | 67,061 | 311,879 | 3,848,922 | 6,862 | 6,382 | 270,061 | 4,651,960 |
| 1983 | 184,902 | 9,242 | 80,869 | 426,485 | 5,030,031 | 9,450 | 8,494 | 372,182 | 6,121,656 |
| 1984 | 194,228 | 9,656 | 95,555 | 471,854 | 5,636,134 | 9,874 | 8,719 | 389,892 | 6,815,912 |
| 1985 | 200,694 | 9,957 | 115,227 | 486,162 | 6,042,593 | 10,182 | 8,982 | 402,457 | 7,276,254 |
| 1986 | 207,028 | 10,302 | 110,479 | 530,803 | 6,372,710 | 10,536 | 10,341 | 415,776 | 7,667,975 |
| 1987 | 205,002 | 10,259 | 109,401 | 533,451 | 6,378,437 | 10,493 | 10,517 | 412,889 | 7,670,450 |
| 1988 | 203,711 | 10,223 | 122,903 | 516,432 | 6,388,497 | 10,455 | 10,341 | 410,868 | 7,673,430 |
| 1989 | 224,049 | 11,269 | 116,197 | 564,169 | 6,747,046 | 11,526 | 11,102 | 452,406 | 8,137,763 |
| 1990 | 271,051 | 13,666 | 148,238 | 664,040 | 8,111,616 | 13,976 | 13,206 | 547,974 | 9,783,767 |
| 1991 | 275,748 | 13,854 | 144,486 | 662,755 | 8,111,610 | 14,168 | 13,218 | 556,474 | 9,792,313 |
| 1992 | 317,889 | 16,027 | 162,466 | 764,224 | 9,115,453 | 16,393 | 18,209 | 642,672 | 11,053,333 |
| 1993 | 359,879 | 17,989 | 184,477 | 831,662 | 10,372,245 | 18,399 | 19,560 | 724,397 | 12,528,608 |
| 1994 | 309,084 | 15,486 | 224,254 | 738,619 | 9,789,833 | 15,839 | 16,434 | 622,879 | 11,732,427 |
| 1995 | 395,441 | 19,918 | 220,899 | 898,339 | 11,190,121 | 20,373 | 21,551 | 799,070 | 13,565,713 |
| 1996 | 362,623 | 19,968 | 301,835 | 902,162 | 11,872,821 | 20,424 | 21,664 | 796,711 | 14,298,209 |
| 1997 | 366,476 | 20,154 | 186,450 | 942,987 | 10,558,144 | 20,613 | 19,344 | 806,084 | 12,920,252 |
| 1998 | 453,033 | 24,560 | 288,906 | 1,098,213 | 12,207,920 | 25,122 | 21,594 | 995,194 | 15,114,543 |
| 1999 | 384,169 | 21,168 | 275,698 | 980,700 | 11,106,789 | 21,650 | 21,913 | 844,306 | 13,656,391 |
| 2000 | 384,704 | 21,155 | 206,915 | 1,023,474 | 9,953,977 | 21,656 | 22,822 | 844,517 | 12,479,220 |
| 2001 | 463,709 | 25,514 | 231,713 | 1,211,557 | 11,265,338 | 26,105 | 31,783 | 1,018,354 | 14,274,074 |
| 2002 | 426,218 | 21,572 | 223,769 | 1,080,828 | 10,227,640 | 22,080 | 25,646 | 813,668 | 12,841,421 |
| 2003 | 494,752 | 25,202 | 242,078 | 1,177,971 | 11,268,413 | 25,794 | 30,739 | 944,655 | 14,209,603 |
| 2004 | 442,084 | 22,638 | 244,298 | 1,124,290 | 10,636,869 | 61,698 | 25,464 | 731,713 | 13,289,054 |
| 2005 | 427,271 | 21,928 | 257,146 | 1,013,649 | 10,307,500 | 59,685 | 24,396 | 708,154 | 12,819,729 |
| 2006 | 464,852 | 23,774 | 196,463 | 1,110,491 | 10,335,918 | 71,780 | 26,398 | 766,334 | 12,996,010 |
| 2007 | 526,700 | 26,710 | 234,958 | 1,268,343 | 11,678,136 | 82,403 | 27,127 | 863,703 | 14,708,080 |
| 2008 | 627,455 | 32,345 | 372,292 | 1,529,635 | 15,128,002 | 101,760 | 32,608 | 1,039,664 | 18,863,761 |
| 2009 | 514,790 | 26,167 | 337,157 | 1,264,156 | 12,740,010 | 83,938 | 26,766 | 845,433 | 15,838,417 |
| 2010 | 501,428 | 29,133 | 406,670 | 1,319,450 | 13,177,342 | 94,478 | 27,763 | 870,341 | 16,426,605 |
| 2011 | 602,556 | 35,288 | 403,873 | 1,642,282 | 15,527,243 | 111,607 | 39,523 | 1,051,564 | 19,413,936 |
| 2012 | 570,781 | 33,336 | 361,512 | 1,611,300 | 15,258,051 | 104,078 | 31,093 | 994,257 | 18,964,407 |
| 2013 | 651,052 | 38,151 | 411,826 | 1,714,323 | 16,650,093 | 118,153 | 30,981 | 1,136,651 | 20,751,231 |
| 2014 | 684,834 | 41,357 | 520,553 | 1,826,415 | 18,743,367 | 131,404 | 43,932 | 1,215,673 | 23,207,534 |
| 2015 | 648,166 | 42,294 | 639,716 | 1,814,953 | 19,493,086 | 137,174 | 44,332 | 1,238,110 | 24,057,831 |
| 2016 | 662,111 | 43,524 | 371,705 | 1,860,700 | 17,734,210 | 130,579 | 45,262 | 1,271,289 | 22,119,380 |
| 2017 | 580,534 | 37,888 | 375,359 | 1,616,393 | 15,896,647 | 115,941 | 42,350 | 1,109,086 | 19,774,199 |
| 2018 | 661,467 | 43,255 | 497,443 | 1,828,757 | 18,795,567 | 134,636 | 47,301 | 1,265,419 | 23,273,846 |
| 2019 | 824,050 | 53,929 | 522,183 | 2,275,647 | 22,537,771 | 164,354 | 55,742 | 1,577,312 | 28,010,987 |
| 2020 | 824,860 | 53,587 | 509,736 | 2,241,612 | 23,263,064 | 162,989 | 60,363 | 1,567,299 | 28,683,511 |
| 2021 | 763,875 | 49,581 | 498,296 | 2,145,686 | 22,259,622 | 151,813 | 51,012 | 1,450,518 | 27,370,403 |
| 2022 | 814,363 | 52,889 | 515,173 | 2,243,420 | 23,270,128 | 161,316 | 56,263 | 1,547,027 | 28,660,578 |
| 2023 | 822,507 | 53,418 | 520,324 | 2,193,860 | 23,502,830 | 162,929 | 56,825 | 1,562,497 | 28,875,191 |
| 2024 | 830,732 | 53,952 | 525,528 | 2,215,799 | 23,737,858 | 164,559 | 57,394 | 1,578,122 | 29,163,943 |
| 2025 | 839,039 | 54,492 | 530,783 | 2,237,957 | 23,975,237 | 166,204 | 57,968 | 1,593,903 | 29,455,583 |
| 2026 | 847,429 | 55,037 | 536,091 | 2,260,337 | 24,214,988 | 167,866 | 58,547 | 1,609,842 | 29,750,138 |
| 2027 | 855,904 | 55,587 | 541,452 | 2,282,940 | 24,457,139 | 169,545 | 59,133 | 1,625,941 | 30,047,639 |
| 2028 | 864,463 | 56,143 | 546,866 | 2,305,769 | 24,701,711 | 171,240 | 59,724 | 1,642,200 | 30,348,117 |
| 2029 | 873,107 | 56,704 | 552,335 | 2,328,827 | 24,948,727 | 172,953 | 60,321 | 1,658,622 | 30,651,597 |
| 2030 | 881,838 | 57,272 | 557,858 | 2,352,115 | 25,198,214 | 174,682 | 60,925 | 1,675,208 | 30,958,113 |
| 2031 | 890,657 | 57,844 | 563,437 | 2,375,637 | 25,450,197 | 176,429 | 61,534 | 1,691,961 | 31,267,695 |
| 2032 | 899,563 | 58,423 | 569,071 | 2,399,393 | 25,704,698 | 178,193 | 62,149 | 1,708,880 | 31,580,371 |
| 2033 | 908,559 | 59,007 | 574,762 | 2,423,387 | 25,961,746 | 179,975 | 62,771 | 1,725,969 | 31,896,175 |
| 2034 | 917,645 | 59,597 | 580,509 | 2,447,621 | 26,221,362 | 181,775 | 63,398 | 1,743,229 | 32,215,136 |
| 2035 | 926,821 | 60,193 | 586,315 | 2,472,097 | 26,483,577 | 183,593 | 64,032 | 1,760,661 | 32,537,289 |
| TOTAL | 30,863,881 | 1,843,465 | 19,301,178 | 80,656,489 | 858,125,311 | 4,836,874 | 1,938,573 | 58,698,938 | 1,056,264,709 |

TABLE B-16A Minimum OMP&R Component of Transportation Charge for Each Contractor (in dollars)

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|--------------------|-------------------|--------------------|------------------|--------------------|-------------------|--------------------|--------------------|--------------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| | [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 65,074 | 11,697 | 2,958 | 19,291 | 1,089 | 24,380 | 8,173 | 52,315 | 14,399 | 8,821 |
| 1969 | 86,339 | 15,522 | 3,925 | 25,598 | 1,445 | 32,348 | 10,844 | 69,419 | 19,106 | 11,704 |
| 1970 | 107,807 | 19,392 | 4,904 | 31,981 | 1,804 | 40,391 | 13,540 | 86,727 | 23,865 | 14,623 |
| 1971 | 178,820 | 32,228 | 8,150 | 53,151 | 2,992 | 66,999 | 22,459 | 144,136 | 39,636 | 24,302 |
| 1972 | 363,555 | 106,740 | 30,967 | 176,037 | 6,601 | 213,032 | 48,102 | 548,123 | 144,113 | 89,131 |
| 1973 | 404,661 | 121,341 | 34,674 | 200,116 | 7,346 | 243,320 | 53,975 | 724,535 | 190,156 | 117,779 |
| 1974 | 434,868 | 130,627 | 37,062 | 215,432 | 7,677 | 262,735 | 56,383 | 786,107 | 207,019 | 128,169 |
| 1975 | 504,791 | 151,031 | 43,176 | 249,082 | 9,082 | 303,108 | 65,580 | 905,424 | 238,842 | 147,899 |
| 1976 | 559,013 | 160,686 | 44,454 | 265,004 | 10,030 | 325,512 | 73,253 | 964,524 | 256,570 | 158,664 |
| 1977 | 675,504 | 184,813 | 47,743 | 304,792 | 11,890 | 381,161 | 87,355 | 1,069,446 | 289,793 | 178,774 |
| 1978 | 600,343 | 187,028 | 54,156 | 308,449 | 10,711 | 373,192 | 78,304 | 1,148,279 | 300,751 | 186,384 |
| 1979 | 661,123 | 196,264 | 52,211 | 323,677 | 12,124 | 401,469 | 87,126 | 1,125,452 | 302,508 | 186,688 |
| 1980 | 858,039 | 253,090 | 71,921 | 417,398 | 15,435 | 508,379 | 112,853 | 1,518,405 | 401,223 | 248,399 |
| 1981 | 1,001,503 | 284,970 | 73,534 | 469,970 | 18,046 | 588,024 | 131,992 | 1,548,350 | 420,523 | 259,244 |
| 1982 | 1,128,643 | 320,938 | 89,560 | 529,292 | 20,193 | 649,204 | 148,012 | 1,870,559 | 497,871 | 307,955 |
| 1983 | 1,744,932 | 450,049 | 119,275 | 742,218 | 30,643 | 922,072 | 225,793 | 2,373,149 | 639,682 | 394,524 |
| 1984 | 2,105,780 | 548,784 | 150,179 | 905,055 | 36,810 | 1,112,196 | 271,187 | 3,018,294 | 803,394 | 496,808 |
| 1985 | 2,157,936 | 584,697 | 157,841 | 964,282 | 38,972 | 1,191,309 | 277,250 | 3,230,403 | 860,780 | 531,765 |
| 1986 | 2,311,841 | 618,750 | 162,748 | 1,020,438 | 40,051 | 1,268,806 | 295,987 | 3,318,638 | 893,069 | 551,066 |
| 1987 | 2,366,343 | 628,222 | 167,262 | 1,036,061 | 41,773 | 1,283,836 | 307,844 | 3,400,838 | 913,933 | 564,352 |
| 1988 | 2,303,274 | 649,276 | 175,694 | 1,070,784 | 40,604 | 1,321,553 | 298,438 | 3,587,873 | 960,968 | 593,787 |
| 1989 | 2,280,051 | 613,266 | 169,993 | 1,011,401 | 39,501 | 1,240,888 | 292,775 | 3,499,964 | 932,519 | 576,852 |
| 1990 | 2,636,186 | 708,829 | 201,242 | 1,169,006 | 45,472 | 1,424,445 | 336,069 | 4,084,211 | 1,078,392 | 667,687 |
| 1991 | 2,737,441 | 763,989 | 210,644 | 1,259,974 | 48,936 | 1,546,583 | 358,165 | 4,348,900 | 1,150,633 | 711,803 |
| 1992 | 2,781,586 | 750,248 | 198,232 | 1,237,307 | 49,829 | 1,538,733 | 362,844 | 4,131,745 | 1,115,632 | 688,558 |
| 1993 | 3,109,819 | 850,589 | 234,719 | 1,402,796 | 56,125 | 1,722,415 | 411,539 | 5,023,595 | 1,338,111 | 828,208 |
| 1994 | 2,825,193 | 794,991 | 225,121 | 1,311,100 | 51,259 | 1,634,886 | 376,180 | 4,794,820 | 1,267,565 | 783,691 |
| 1995 | 3,121,440 | 848,101 | 231,718 | 1,398,686 | 58,749 | 1,766,297 | 444,998 | 4,828,432 | 1,272,345 | 785,191 |
| 1996 | 3,093,678 | 862,720 | 228,008 | 1,422,789 | 56,813 | 1,817,427 | 423,444 | 4,707,473 | 1,256,549 | 773,653 |
| 1997 | 3,250,394 | 918,428 | 281,067 | 1,514,687 | 59,547 | 1,853,224 | 446,127 | 5,705,741 | 1,477,757 | 917,372 |
| 1998 | 3,876,512 | 1,070,517 | 299,639 | 1,765,491 | 73,835 | 3,207,848 | 561,246 | 6,076,375 | 1,634,942 | 1,000,558 |
| 1999 | 3,832,428 | 1,114,208 | 311,154 | 1,837,547 | 75,908 | 3,226,793 | 549,879 | 6,454,799 | 1,738,148 | 1,066,898 |
| 2000 | 3,754,814 | 1,036,009 | 291,775 | 1,708,586 | 68,491 | 3,000,971 | 595,130 | 5,876,356 | 1,572,153 | 964,297 |
| 2001 | 4,461,346 | 1,111,786 | 298,240 | 1,833,547 | 80,861 | 3,287,877 | 700,113 | 5,761,358 | 1,556,933 | 950,095 |
| 2002 | 3,640,157 | 1,017,608 | 282,351 | 1,678,238 | 62,563 | 2,999,667 | 549,514 | 5,628,813 | 1,510,431 | 922,155 |
| 2003 | 4,067,155 | 1,123,306 | 298,428 | 1,852,545 | 68,043 | 3,294,891 | 608,571 | 6,599,195 | 1,603,982 | 1,514,563 |
| 2004 | 4,445,363 | 1,441,872 | 322,934 | 1,908,976 | 76,808 | 3,426,245 | 676,950 | 7,222,154 | 1,765,191 | 1,435,520 |
| 2005 | 3,834,679 | 5,894,144 | 289,387 | 2,247,118 | 66,837 | 2,910,013 | 581,713 | 6,801,176 | 1,600,286 | 1,587,811 |
| 2006 | 4,077,652 | 8,417,014 | 307,949 | 2,810,598 | 74,588 | 3,150,305 | 639,536 | 7,009,938 | 1,689,767 | 1,457,120 |
| 2007 | 4,478,493 | 8,628,156 | 328,253 | 2,900,437 | 78,700 | 3,338,098 | 682,104 | 8,088,064 | 1,891,562 | 1,840,905 |
| 2008 | 4,923,821 | 9,721,152 | 372,047 | 3,295,931 | 81,977 | 4,110,652 | 745,871 | 9,321,943 | 2,039,147 | 2,501,079 |
| 2009 | 4,548,886 | 8,685,341 | 355,012 | 2,992,610 | 77,708 | 3,711,399 | 688,795 | 9,045,955 | 1,987,277 | 2,389,707 |
| 2010 | 4,160,791 | 9,304,954 | 360,331 | 3,205,855 | 73,337 | 3,785,510 | 623,159 | 8,934,352 | 1,963,570 | 2,579,299 |
| 2011 | 4,890,733 | 10,750,343 | 411,549 | 3,647,626 | 85,879 | 4,332,302 | 763,416 | 9,485,178 | 2,160,182 | 2,657,976 |
| 2012 | 5,436,688 | 11,281,801 | 454,502 | 3,925,892 | 97,136 | 4,573,187 | 834,154 | 10,766,479 | 2,363,902 | 2,639,486 |
| 2013 | 6,336,620 | 11,872,727 | 491,356 | 4,286,981 | 111,656 | 5,188,886 | 969,918 | 11,787,737 | 2,633,789 | 2,717,756 |
| 2014 | 6,954,450 | 15,374,349 | 528,643 | 5,012,825 | 116,460 | 5,844,643 | 1,040,611 | 12,786,813 | 2,863,506 | 3,090,302 |
| 2015 | 6,443,858 | 13,220,645 | 523,788 | 4,710,465 | 110,179 | 5,998,427 | 936,537 | 12,798,471 | 2,954,391 | 3,110,579 |
| 2016 | 6,411,217 | 12,952,225 | 541,373 | 4,602,681 | 104,827 | 5,470,798 | 932,504 | 13,121,330 | 2,984,370 | 3,308,865 |
| 2017 | 5,882,647 | 9,808,780 | 500,212 | 3,906,396 | 97,416 | 4,961,494 | 858,456 | 13,626,107 | 2,724,434 | 3,505,868 |
| 2018 | 6,446,154 | 14,746,279 | 521,348 | 4,630,497 | 108,278 | 5,278,958 | 947,087 | 15,043,582 | 2,915,446 | 4,154,707 |
| 2019 | 7,787,736 | 16,805,785 | 632,033 | 5,564,283 | 129,022 | 6,466,515 | 1,137,128 | 17,983,541 | 3,573,559 | 5,016,620 |
| 2020 | 7,589,829 | 16,142,755 | 598,618 | 5,393,497 | 125,939 | 6,514,888 | 1,108,016 | 18,529,434 | 3,440,512 | 5,756,931 |
| 2021 | 7,651,882 | 16,434,177 | 615,922 | 5,496,216 | 126,876 | 6,584,789 | 1,116,363 | 18,329,584 | 3,520,047 | 5,420,541 |
| 2022 | 7,752,207 | 16,623,642 | 621,632 | 5,538,749 | 128,521 | 6,648,609 | 1,131,554 | 18,462,812 | 3,546,091 | 5,451,869 |
| 2023 | 7,697,732 | 16,789,878 | 622,563 | 5,594,136 | 129,806 | 6,633,259 | 1,123,459 | 18,553,941 | 3,581,552 | 5,490,621 |
| 2024 | 7,774,709 | 16,957,777 | 628,789 | 5,650,077 | 131,104 | 6,699,592 | 1,134,693 | 18,739,477 | 3,617,368 | 5,545,527 |
| 2025 | 7,852,456 | 17,127,355 | 635,077 | 5,706,578 | 132,415 | 6,766,588 | 1,146,040 | 18,926,873 | 3,653,541 | 5,600,982 |
| 2026 | 7,930,981 | 17,298,628 | 641,427 | 5,763,644 | 133,739 | 6,834,254 | 1,157,500 | 19,116,143 | 3,690,077 | 5,656,993 |
| 2027 | 8,010,290 | 17,471,615 | 647,842 | 5,821,281 | 135,077 | 6,902,596 | 1,169,075 | 19,307,304 | 3,726,978 | 5,713,563 |
| 2028 | 8,090,393 | 17,646,331 | 654,320 | 5,879,493 | 136,428 | 6,971,622 | 1,180,766 | 19,500,377 | 3,764,247 | 5,770,698 |
| 2029 | 8,171,297 | 17,822,794 | 660,863 | 5,938,288 | 137,792 | 7,041,338 | 1,192,574 | 19,695,380 | 3,801,890 | 5,828,405 |
| 2030 | 8,253,010 | 18,001,022 | 667,472 | 5,997,671 | 139,170 | 7,111,752 | 1,204,500 | 19,892,334 | 3,839,909 | 5,886,688 |
| 2031 | 8,335,540 | 18,181,032 | 674,147 | 6,057,648 | 140,561 | 7,182,869 | 1,216,545 | 20,091,258 | 3,878,308 | 5,945,556 |
| 2032 | 8,418,896 | 18,362,842 | 680,888 | 6,118,224 | 141,967 | 7,254,698 | 1,228,710 | 20,292,170 | 3,917,091 | 6,005,011 |
| 2033 | 8,503,085 | 18,546,471 | 687,697 | 6,179,407 | 143,387 | 7,327,245 | 1,240,997 | 20,495,093 | 3,956,262 | 6,065,062 |
| 2034 | 8,588,115 | 18,731,935 | 694,574 | 6,241,201 | 144,821 | 7,400,517 | 1,253,407 | 20,700,044 | 3,995,824 | 6,125,712 |
| 2035 | 8,673,997 | 18,919,255 | 701,520 | 6,303,613 | 146,269 | 7,474,523 | 1,265,941 | 20,907,043 | 4,035,783 | 6,186,970 |
| TOTAL | 286,442,599 | 469,203,816 | 22,668,792 | 185,060,704 | 4,925,927 | 228,972,539 | 41,619,125 | 594,374,859 | 127,000,149 | 154,797,143 |

TABLE B-16A Minimum OMP&R Component of Transportation Charge for Each Contractor (in dollars)

Sheet 4 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | South Bay Area Future Contractor | Grand Total |
|---------------|--------------------------------------|----------------------|-------------------|----------------------|--------------------|----------|----------------|----------------|----------------------------------|-----------------------|
| | Santa Clarita ^a | Metropolitan | Ventura | Total | Yuba City | Butte | Plumas | Total | | |
| [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,219 | 42,918 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,626 | 168,358 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13,938 | 184,729 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28,937 | 378,874 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31,321 | 408,397 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47,718 | 634,505 |
| 1968 | 28,085 | 972,734 | 9,504 | 1,218,520 | 0 | 0 | 0 | 0 | 46,945 | 2,745,160 |
| 1969 | 70,342 | 1,295,607 | 12,610 | 1,654,810 | 0 | 0 | 0 | 0 | 52,963 | 4,074,939 |
| 1970 | 84,577 | 1,624,569 | 15,746 | 2,069,923 | 0 | 0 | 0 | 0 | 69,744 | 4,676,282 |
| 1971 | 105,979 | 2,716,584 | 26,118 | 3,421,555 | 0 | 0 | 54 | 54 | 55,532 | 6,185,714 |
| 1972 | 202,625 | 8,038,463 | 68,369 | 10,035,857 | 0 | 40 | 40 | 80,412 | 12,998,869 | |
| 1973 | 222,765 | 9,890,316 | 78,313 | 12,289,296 | 0 | 1 | 1 | 54,219 | 15,194,233 | |
| 1974 | 235,528 | 11,581,491 | 83,453 | 14,166,551 | 0 | 143 | 143 | 76,783 | 17,372,561 | |
| 1975 | 289,501 | 13,584,548 | 101,893 | 16,593,957 | 0 | 1,069 | 1,069 | 84,547 | 20,517,423 | |
| 1976 | 262,420 | 12,862,489 | 94,799 | 16,037,419 | 0 | 139 | 139 | 106,717 | 20,027,213 | |
| 1977 | 335,749 | 16,203,699 | 121,966 | 19,892,683 | 0 | 892 | 892 | 98,618 | 24,213,489 | |
| 1978 | 376,946 | 17,811,770 | 132,435 | 21,568,747 | 0 | 39 | 39 | 100,786 | 26,012,786 | |
| 1979 | 349,072 | 16,414,289 | 126,756 | 20,238,761 | 0 | 3,235 | 3,235 | 119,352 | 24,675,598 | |
| 1980 | 415,571 | 20,926,898 | 154,096 | 25,901,706 | 0 | 416 | 416 | 178,812 | 32,038,398 | |
| 1981 | 511,087 | 23,731,024 | 186,592 | 29,224,860 | 0 | 3,847 | 3,847 | 185,347 | 35,516,366 | |
| 1982 | 557,494 | 27,994,510 | 209,141 | 34,323,374 | 0 | 11,075 | 11,075 | 173,894 | 41,611,655 | |
| 1983 | 832,687 | 38,953,367 | 326,258 | 47,754,649 | 0 | 1,928 | 1,928 | 220,926 | 56,802,781 | |
| 1984 | 943,524 | 45,597,671 | 382,104 | 56,371,786 | 0 | 3,765 | 3,765 | 225,959 | 67,072,552 | |
| 1985 | 1,055,744 | 50,064,444 | 416,652 | 61,532,075 | 0 | 2,888 | 2,888 | 340,322 | 73,228,724 | |
| 1986 | 1,102,466 | 52,858,915 | 442,334 | 64,885,109 | 0 | 2,787 | 2,787 | 279,227 | 76,682,113 | |
| 1987 | 1,032,918 | 50,737,631 | 411,276 | 62,892,287 | 0 | 2,388 | 2,388 | 345,116 | 75,240,981 | |
| 1988 | 1,042,113 | 51,262,231 | 406,248 | 63,712,844 | 0 | 545 | 545 | 365,207 | 76,126,695 | |
| 1989 | 1,088,176 | 52,638,942 | 431,020 | 64,815,349 | 0 | 1,800 | 1,800 | 422,329 | 78,708,338 | |
| 1990 | 1,275,150 | 61,053,824 | 494,721 | 75,175,234 | 0 | 788 | 788 | 474,284 | 91,448,066 | |
| 1991 | 1,454,172 | 60,874,529 | 470,139 | 75,935,908 | 0 | 3,654 | 3,654 | 214,683 | 91,098,893 | |
| 1992 | 1,579,025 | 67,460,598 | 502,131 | 82,396,469 | 0 | 647 | 647 | 443,676 | 100,077,320 | |
| 1993 | 1,689,775 | 68,749,547 | 538,751 | 85,955,990 | 0 | 3,630 | 3,630 | 599,571 | 107,321,034 | |
| 1994 | 1,608,731 | 63,898,029 | 473,897 | 80,045,461 | 0 | 2,279 | 2,279 | 609,966 | 101,233,250 | |
| 1995 | 1,720,649 | 68,079,888 | 523,512 | 85,080,005 | 0 | 2,906 | 2,906 | 534,971 | 107,378,966 | |
| 1996 | 1,966,634 | 72,757,439 | 561,100 | 89,927,727 | 0 | 8,007 | 8,007 | 571,857 | 113,585,948 | |
| 1997 | 1,810,292 | 75,655,465 | 564,455 | 94,454,555 | 0 | 7,449 | 7,449 | 428,638 | 114,939,131 | |
| 1998 | 2,050,254 | 80,540,695 | 608,294 | 102,766,204 | 0 | 0 | 0 | 465,095 | 129,072,817 | |
| 1999 | 2,108,765 | 86,320,578 | 637,626 | 109,274,730 | 0 | 0 | 0 | 584,116 | 136,697,736 | |
| 2000 | 3,382,326 | 82,505,333 | 636,095 | 105,392,336 | 0 | 0 | 0 | 0 | 131,148,648 | |
| 2001 | 3,773,156 | 92,945,584 | 709,090 | 117,469,986 | 0 | 0 | 0 | 0 | 0 | 146,246,848 |
| 2002 | 3,495,707 | 85,413,719 | 657,483 | 107,858,407 | 0 | 0 | 0 | 0 | 0 | 143,375,836 |
| 2003 | 3,392,356 | 82,357,577 | 621,295 | 107,401,907 | 0 | 3,425 | 3,425 | 0 | 0 | 138,781,813 |
| 2004 | 4,032,309 | 99,543,042 | 761,679 | 127,059,044 | 0 | 3,455 | 3,455 | 0 | 0 | 155,848,398 |
| 2005 | 3,548,174 | 74,184,438 | 652,293 | 104,198,067 | 0 | 3,452 | 3,452 | 0 | 0 | 130,734,153 |
| 2006 | 3,239,106 | 76,415,491 | 601,238 | 109,890,305 | 0 | 3,905 | 3,905 | 0 | 0 | 136,434,374 |
| 2007 | 4,391,916 | 105,213,069 | 864,216 | 142,723,972 | 0 | 3,517 | 3,517 | 0 | 0 | 172,954,800 |
| 2008 | 5,291,459 | 113,726,782 | 982,517 | 157,114,378 | 0 | 5,035 | 5,035 | 0 | 0 | 194,939,674 |
| 2009 | 4,472,549 | 99,958,381 | 828,989 | 139,742,607 | 0 | 844 | 844 | 0 | 0 | 173,120,230 |
| 2010 | 4,303,103 | 98,290,086 | 792,503 | 138,376,850 | 0 | 1,071 | 1,071 | 0 | 0 | 175,710,220 |
| 2011 | 4,716,434 | 105,527,704 | 849,564 | 150,278,887 | 0 | 2,754 | 2,754 | 0 | 0 | 192,694,341 |
| 2012 | 5,144,866 | 118,316,284 | 954,791 | 166,789,168 | 0 | 1,093 | 1,093 | 0 | 0 | 212,304,548 |
| 2013 | 5,999,311 | 132,919,529 | 1,124,279 | 186,440,545 | 0 | 289 | 289 | 0 | 0 | 234,442,654 |
| 2014 | 6,414,853 | 145,793,432 | 1,170,884 | 206,991,771 | 0 | 116 | 116 | 0 | 0 | 257,557,848 |
| 2015 | 5,994,662 | 131,705,660 | 1,045,841 | 189,553,504 | 0 | 117 | 117 | 0 | 0 | 246,234,895 |
| 2016 | 5,715,739 | 131,621,254 | 1,062,538 | 188,829,722 | 0 | 5,403 | 5,403 | 0 | 0 | 251,846,448 |
| 2017 | 5,795,484 | 134,596,517 | 1,125,410 | 187,389,221 | 0 | 113 | 113 | 0 | 0 | 247,121,224 |
| 2018 | 6,019,902 | 140,464,511 | 1,103,526 | 202,380,275 | 0 | 47,581 | 47,581 | 0 | 0 | 269,236,100 |
| 2019 | 7,184,105 | 169,206,661 | 1,341,215 | 242,828,202 | 0 | 2,747 | 2,747 | 0 | 0 | 311,635,236 |
| 2020 | 7,142,906 | 166,609,997 | 1,339,134 | 240,292,455 | 0 | 2,948 | 2,948 | 0 | 0 | 309,085,601 |
| 2021 | 7,221,167 | 169,446,157 | 1,360,158 | 243,323,879 | 0 | 2,800 | 2,800 | 0 | 0 | 310,661,399 |
| 2022 | 7,253,819 | 170,090,104 | 1,360,042 | 244,609,650 | 0 | 2,860 | 2,860 | 0 | 0 | 313,966,170 |
| 2023 | 7,239,601 | 170,049,034 | 1,373,642 | 244,879,224 | 0 | 2,889 | 2,889 | 0 | 0 | 314,520,235 |
| 2024 | 7,311,997 | 171,749,523 | 1,387,379 | 247,328,011 | 0 | 2,918 | 2,918 | 0 | 0 | 317,665,433 |
| 2025 | 7,385,117 | 173,467,020 | 1,401,253 | 249,801,295 | 0 | 2,947 | 2,947 | 0 | 0 | 320,842,090 |
| 2026 | 7,458,968 | 175,201,690 | 1,415,265 | 252,299,310 | 0 | 2,976 | 2,976 | 0 | 0 | 324,050,512 |
| 2027 | 7,533,558 | 176,953,707 | 1,429,418 | 254,822,303 | 0 | 3,006 | 3,006 | 0 | 0 | 327,291,017 |
| 2028 | 7,608,893 | 178,723,244 | 1,443,712 | 257,370,524 | 0 | 3,036 | 3,036 | 0 | 0 | 330,563,928 |
| 2029 | 7,684,982 | 180,510,476 | 1,458,149 | 259,944,228 | 0 | 3,067 | 3,067 | 0 | 0 | 333,869,564 |
| 2030 | 7,761,832 | 182,315,579 | 1,472,731 | 262,543,669 | 0 | 3,097 | 3,097 | 0 | 0 | 337,208,257 |
| 2031 | 7,839,450 | 184,138,736 | 1,487,458 | 265,169,108 | 0 | 3,128 | 3,128 | 0 | 0 | 340,580,343 |
| 2032 | 7,917,845 | 185,980,121 | 1,502,332 | 267,820,796 | 0 | 3,160 | 3,160 | 0 | 0 | 343,986,142 |
| 2033 | 7,997,023 | 187,839,925 | 1,517,356 | 270,499,010 | 0 | 3,191 | 3,191 | 0 | 0 | 347,426,011 |
| 2034 | 8,076,993 | 189,718,322 | 1,532,529 | 273,203,994 | 0 | 3,223 | 3,223 | 0 | 0 | 350,900,264 |
| 2035 | 8,157,763 | 191,615,507 | 1,547,855 | 275,936,037 | 0 | 3,255 | 3,255 | 0 | 0 | 354,409,271 |
| TOTAL | 246,308,247 | 6,308,266,981 | 50,526,168 | 8,720,167,048 | 0 | 0 | 199,829 | 199,829 | 8,748,370 | 11,085,788,336 |

^a Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-16B Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities^{a,b,c} (in dollars)

Sheet 1 of 4

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA | | | | CENTRAL COASTAL AREA | | |
|---------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|----------------------|-------------------|-------------------|
| | Napa | Solano | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| [1] | [2] | [3] | | [4] | [5] | [6] | [7] | [8] | [9] | [10] |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 10,070 | 0 | 10,070 | 47,473 | 31,446 | 863,937 | 942,856 | 0 | 0 | 0 |
| 1984 | 29,957 | 0 | 29,957 | 157,280 | 77,388 | 2,040,188 | 2,274,856 | 0 | 0 | 0 |
| 1985 | 54,709 | 0 | 54,709 | 458,427 | 582,679 | 2,696,450 | 3,737,556 | 0 | 0 | 0 |
| 1986 | 45,887 | 0 | 45,887 | 312,938 | 365,147 | 2,595,765 | 3,273,850 | 0 | 0 | 0 |
| 1987 | 90,385 | 0 | 90,385 | 622,029 | 674,111 | 2,306,079 | 3,602,219 | 0 | 0 | 0 |
| 1988 | 115,970 | 114,196 | 230,166 | 616,865 | 804,606 | 2,116,236 | 3,537,707 | 0 | 0 | 0 |
| 1989 | 64,584 | 138,240 | 202,824 | 407,353 | 396,069 | 1,389,347 | 2,192,769 | 0 | 0 | 0 |
| 1990 | 77,126 | 138,805 | 215,931 | 535,269 | 514,372 | 1,490,250 | 2,539,891 | 0 | 0 | 0 |
| 1991 | 35,178 | 245,181 | 280,359 | 355,578 | 477,883 | 1,065,488 | 1,898,949 | 0 | 165,930 | 165,930 |
| 1992 | 74,573 | 230,716 | 305,289 | 405,244 | 529,119 | 1,183,466 | 2,117,829 | 0 | 0 | 0 |
| 1993 | 89,214 | 247,977 | 337,191 | 841,383 | 256,930 | 1,552,562 | 2,650,875 | 0 | 0 | 0 |
| 1994 | 111,942 | 229,598 | 341,540 | 501,812 | 559,683 | 1,395,238 | 2,456,733 | 0 | 0 | 0 |
| 1995 | 96,842 | 235,605 | 332,447 | 833,227 | 492,578 | 796,524 | 2,122,329 | 0 | 0 | 0 |
| 1996 | 63,698 | 205,414 | 269,112 | 367,297 | 304,845 | 1,189,291 | 1,861,433 | 711 | 105 | 816 |
| 1997 | 48,518 | 193,255 | 241,773 | 455,751 | 294,951 | 1,220,497 | 1,971,199 | 44,788 | 298,986 | 343,774 |
| 1998 | 82,317 | 251,217 | 333,534 | 380,321 | 380,282 | 1,103,662 | 1,864,265 | 198,376 | 1,028,220 | 1,226,596 |
| 1999 | 58,017 | 195,562 | 253,579 | 559,900 | 446,655 | 1,039,572 | 2,046,127 | 147,204 | 791,946 | 939,150 |
| 2000 | 28,759 | 128,393 | 157,152 | 374,808 | 237,138 | 748,820 | 1,360,766 | 82,628 | 474,268 | 556,896 |
| 2001 | 81,666 | 157,196 | 238,862 | 396,340 | 233,205 | 673,431 | 1,302,976 | 134,574 | 595,294 | 729,868 |
| 2002 | 40,236 | 127,750 | 167,986 | 383,365 | 229,280 | 519,819 | 1,132,464 | 91,639 | 583,933 | 675,572 |
| 2003 | 37,618 | 92,735 | 130,353 | 301,657 | 180,804 | 643,729 | 1,126,190 | 78,771 | 477,048 | 555,819 |
| 2004 | 50,289 | 128,180 | 178,469 | 447,802 | 210,093 | 546,342 | 1,204,237 | 92,836 | 662,110 | 754,946 |
| 2005 | 53,455 | 149,328 | 202,783 | 452,896 | 265,252 | 772,420 | 1,490,568 | 106,901 | 587,036 | 693,937 |
| 2006 | 59,239 | 127,708 | 186,947 | 476,295 | 277,304 | 798,098 | 1,551,697 | 109,498 | 605,502 | 715,000 |
| 2007 | 82,724 | 182,954 | 265,678 | 445,250 | 246,862 | 740,211 | 1,432,323 | 103,331 | 759,114 | 862,445 |
| 2008 | 200,185 | 304,502 | 504,687 | 861,568 | 428,737 | 1,074,975 | 2,365,280 | 184,501 | 997,507 | 1,182,008 |
| 2009 | 167,186 | 237,569 | 404,755 | 708,409 | 418,456 | 1,279,442 | 2,406,307 | 209,684 | 853,143 | 1,062,827 |
| 2010 | 186,503 | 221,486 | 407,989 | 876,092 | 407,548 | 1,266,270 | 2,549,910 | 203,422 | 963,122 | 1,166,544 |
| 2011 | 121,673 | 145,499 | 267,172 | 685,604 | 372,699 | 1,174,038 | 2,232,341 | 147,645 | 829,034 | 976,679 |
| 2012 | 130,199 | 185,005 | 315,204 | 830,163 | 319,227 | 1,135,648 | 2,285,038 | 186,059 | 920,215 | 1,106,274 |
| 2013 | 114,869 | 172,310 | 287,179 | 609,808 | 327,688 | 1,046,787 | 1,984,283 | 121,826 | 607,752 | 729,578 |
| 2014 | 97,013 | 94,810 | 191,823 | 317,446 | 235,476 | 541,866 | 1,094,788 | 83,501 | 442,785 | 526,286 |
| 2015 | 35,066 | 47,874 | 82,940 | 140,365 | 92,557 | 306,876 | 539,798 | 38,476 | 155,225 | 193,701 |
| 2016 | 4,534 | 8,280 | 12,814 | 30,111 | 17,686 | 63,625 | 111,422 | 5,487 | 33,137 | 38,624 |
| 2017 | 3,166 | 6,232 | 9,398 | 20,284 | 13,600 | 45,497 | 79,381 | 3,418 | 19,553 | 22,971 |
| 2018 | 2,352 | 4,574 | 6,926 | 14,870 | 9,855 | 33,351 | 58,076 | 2,489 | 14,450 | 16,939 |
| 2019 | 3,501 | 6,740 | 10,241 | 21,844 | 14,547 | 48,677 | 85,068 | 3,696 | 20,660 | 24,256 |
| 2020 | 6,485 | 12,359 | 18,844 | 40,766 | 27,265 | 90,567 | 158,598 | 7,429 | 38,814 | 46,243 |
| 2021 | 20,547 | 9,592 | 30,138 | 79,102 | 39,131 | 104,925 | 223,157 | 53,916 | 115,773 | 169,689 |
| 2022 | 289 | 135 | 424 | 1,114 | 556 | 1,478 | 3,148 | 765 | 1,630 | 2,396 |
| 2023 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2024 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2025 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2026 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2027 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2028 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2029 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2030 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2031 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2032 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2033 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2034 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| 2035 | 289 | 135 | 424 | 1,114 | 559 | 1,478 | 3,151 | 768 | 1,630 | 2,399 |
| TOTAL | 2,680,303 | 4,978,733 | 7,659,036 | 16,388,588 | 11,800,979 | 39,720,653 | 67,910,220 | 2,453,557 | 13,063,488 | 15,517,045 |

^a 1983 through 2018 changes are debt service only and do not include bond cover.^b 2009 through 2020 charges include Reid Gardner separation costs that are allocated to SWP water contractors based on theoretical energy use over the facility service life, 1983–2013.^c Costs allocated to contractors in 1989 through 2002 are reduced by credits for Off-Aqueduct Power Facility costs allocated to the pumping of non-SWP water.

TABLE B-16B Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities^{a,b,c} (in dollars)

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | |
|---------------|-------------------------|----------------|--------------------------|--------------------|----------------|----------------|-------------------|--------------------|
| | Dudley Ridge | Empire | Kern | | Kings | Oak Flat | Tulare | Total |
| | | | Municipal and Industrial | Agricultural | | | | |
| [11] | [12] | [13] | [14] | [15] | [16] | [17] | [18] | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 159,191 | 0 | 34,366 | 2,964,185 | 13,174 | 9,673 | 3,733 | 3,184,322 |
| 1984 | 389,518 | 0 | 816,103 | 9,095,509 | 26,774 | 33,576 | 49,601 | 10,411,081 |
| 1985 | 527,952 | 59,322 | 1,053,957 | 11,978,046 | 38,810 | 42,297 | 1,253,257 | 14,953,641 |
| 1986 | 552,172 | 12,858 | 885,988 | 11,788,714 | 40,659 | 38,275 | 872,008 | 14,190,674 |
| 1987 | 450,941 | 24,936 | 1,192,388 | 10,448,063 | 39,134 | 37,538 | 911,938 | 13,104,938 |
| 1988 | 425,261 | 31,146 | 1,130,988 | 9,910,050 | 35,851 | 26,779 | 850,225 | 12,410,300 |
| 1989 | 331,852 | 17,226 | 607,908 | 7,400,983 | 22,959 | 24,306 | 754,007 | 9,159,241 |
| 1990 | 219,381 | 7,731 | 428,482 | 5,216,562 | 12,089 | 12,046 | 344,943 | 6,241,234 |
| 1991 | 13,048 | 3,111 | 570,942 | 146,276 | 0 | 1,354 | 30,685 | 765,416 |
| 1992 | 244,630 | 13,395 | 706,155 | 5,788,599 | 18,587 | 15,716 | 480,903 | 7,267,985 |
| 1993 | 471,706 | 25,543 | 1,202,455 | 11,405,212 | 37,276 | 36,803 | 1,159,908 | 14,338,903 |
| 1994 | 262,029 | 15,161 | 901,463 | 6,786,208 | 19,257 | 19,061 | 567,521 | 8,570,700 |
| 1995 | 626,214 | 16,830 | 1,486,494 | 12,489,555 | 41,275 | 36,377 | 1,051,178 | 15,747,923 |
| 1996 | 407,919 | 13,446 | 1,226,968 | 9,219,091 | 28,668 | 24,001 | 1,691,135 | 12,611,228 |
| 1997 | 423,144 | (6) | 794,476 | 7,471,645 | (31) | 22,025 | 137,304 | 8,848,557 |
| 1998 | 471,993 | 4,597 | 837,228 | 8,366,817 | 127 | 25,458 | 175,371 | 9,881,591 |
| 1999 | 360,554 | 19,182 | 874,948 | 7,723,883 | 24,159 | 20,065 | 1,749,925 | 10,772,716 |
| 2000 | 193,895 | 5,762 | 392,659 | 4,215,772 | 11,530 | 9,847 | 667,127 | 5,496,592 |
| 2001 | 200,485 | 6,563 | 113,854 | 2,948,087 | 7,528 | 11,821 | 287,409 | 3,575,747 |
| 2002 | 153,306 | 4,540 | 308,554 | 2,797,916 | 9,223 | 10,767 | 299,940 | 3,584,246 |
| 2003 | 125,188 | 3,901 | 301,142 | 2,626,386 | 10,030 | 7,904 | 287,531 | 3,362,082 |
| 2004 | 168,005 | 12,193 | 457,106 | 2,914,113 | 30,989 | 10,807 | 278,204 | 3,871,417 |
| 2005 | 315,142 | 14,807 | 358,007 | 5,609,958 | 76,490 | 11,047 | 540,681 | 6,926,132 |
| 2006 | 287,977 | 13,112 | 401,503 | 5,488,668 | 38,075 | 11,559 | 432,313 | 6,673,207 |
| 2007 | 189,684 | 8,758 | 242,253 | 3,662,405 | 24,280 | 10,224 | 365,975 | 4,503,579 |
| 2008 | 184,682 | 7,887 | 381,864 | 3,930,067 | 31,949 | 11,276 | 282,379 | 4,830,104 |
| 2009 | 181,200 | 8,817 | 63,082 | 4,518,839 | 28,827 | 11,595 | 314,621 | 5,126,981 |
| 2010 | 250,194 | 27,117 | 96,128 | 5,774,210 | 40,474 | 16,580 | 488,098 | 6,692,801 |
| 2011 | 362,592 | 11,506 | 290,168 | 7,797,111 | 39,939 | 11,233 | 338,448 | 8,850,997 |
| 2012 | 139,042 | 16,387 | 281,108 | 5,881,018 | 53,747 | 16,121 | 654,940 | 7,042,363 |
| 2013 | 174,617 | 9,247 | 247,481 | 4,100,710 | 25,730 | 11,818 | 300,486 | 4,870,089 |
| 2014 | 121,811 | 4,353 | 114,780 | 2,211,296 | 10,098 | 7,131 | 151,394 | 2,620,863 |
| 2015 | 57,355 | 2,365 | 89,264 | 1,214,150 | 5,119 | 3,182 | 93,155 | 1,464,590 |
| 2016 | 14,059 | 654 | 23,321 | 308,938 | 1,447 | 850 | 26,898 | 376,167 |
| 2017 | 11,439 | 483 | 19,972 | 241,980 | 1,103 | 687 | 21,598 | 297,262 |
| 2018 | 8,235 | 350 | 14,164 | 173,285 | 790 | 495 | 15,503 | 212,822 |
| 2019 | 12,217 | 522 | 21,683 | 258,385 | 1,186 | 732 | 23,335 | 318,060 |
| 2020 | 22,640 | 966 | 40,319 | 478,378 | 2,193 | 1,373 | 43,039 | 588,908 |
| 2021 | 18,611 | 1,173 | 63,374 | 438,258 | 3,713 | 1,520 | 34,191 | 560,839 |
| 2022 | 262 | 17 | 893 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2023 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2024 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2025 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2026 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2027 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2028 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2029 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2030 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2031 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2032 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2033 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2034 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| 2035 | 262 | 17 | 892 | 6,172 | 52 | 21 | 482 | 7,898 |
| TOTAL | 9,533,550 | 426,172 | 19,085,589 | 205,875,735 | 853,960 | 604,218 | 18,037,648 | 254,416,873 |

^a 1983 through 2018 charges are debt service only and do not include bond cover.^b 2009 through 2020 charges include Reid Gardner separation costs that are allocated to SWP water contractors based on theoretical energy use over the facility service life, 1983–2013.^c Costs allocated to contractors in 1989 through 2002 are reduced by credits for Off-Aqueduct Power Facility costs allocated to the pumping of non-SWP water.

TABLE B-16B Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities^{a,b,c} (in dollars)

Sheet 3 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|-------------------|------------------|-------------------|----------------|-------------------|-------------------|-------------------|-------------------|------------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| [19] | [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 1,083,881 | 565,798 | 35,432 | 894,572 | 1,250 | 0 | 0 | 233,134 | 28,548 | 0 |
| 1984 | 2,499,848 | 1,427,428 | 102,114 | 2,263,172 | 77 | 0 | 0 | 502,967 | 693,074 | 0 |
| 1985 | 3,749,257 | 2,032,672 | 170,137 | 3,230,451 | 0 | 0 | 157,601 | 884,188 | 601,583 | 0 |
| 1986 | 3,159,857 | 2,097,408 | 173,460 | 3,340,188 | 15,873 | 0 | 301,486 | 739,563 | 1,088,901 | 0 |
| 1987 | 3,167,759 | 1,991,841 | 190,149 | 3,230,424 | 95,994 | 1,786 | 258,719 | 1,951,799 | 1,091,691 | 0 |
| 1988 | 2,688,113 | 1,940,156 | 187,156 | 3,194,137 | 30,395 | 846 | 126,639 | 2,000,664 | 839,774 | 0 |
| 1989 | 2,357,669 | 1,326,863 | 132,076 | 2,218,516 | 50,948 | 13,206 | 493,424 | 1,257,332 | 792,087 | 0 |
| 1990 | 2,528,625 | 1,463,452 | 115,746 | 2,413,745 | 110,678 | 0 | 545,342 | 1,192,997 | 1,054,762 | 0 |
| 1991 | 1,048,414 | 1,022,405 | 125,256 | 1,686,304 | 65,111 | 473,291 | 488,207 | 540,119 | 796,531 | 0 |
| 1992 | 2,760,199 | 1,124,775 | 55,985 | 1,855,065 | 22,891 | 1,130,876 | 367,996 | 362,232 | 853,047 | 0 |
| 1993 | 3,559,487 | 2,256,338 | 29,498 | 3,721,492 | 60,615 | 1,101,799 | 640,919 | 425,969 | 1,406,255 | 0 |
| 1994 | 3,963,982 | 1,345,145 | 74,879 | 2,218,411 | 88,549 | 1,371,116 | 678,876 | 871,358 | 1,452,741 | 0 |
| 1995 | 4,324,009 | 2,498,462 | 44,237 | 4,120,837 | 43,892 | 881,146 | 636,541 | 75,278 | 1,397,623 | 0 |
| 1996 | 3,572,856 | 4,652,945 | 77,384 | 7,674,388 | 31,691 | 760,763 | 723,670 | 458,246 | 1,201,941 | 0 |
| 1997 | 3,411,379 | 4,294,703 | 42,135 | 4,319,206 | 24,319 | 891,191 | 648,652 | 625,340 | 1,175,556 | 0 |
| 1998 | 3,977,988 | 7,554,910 | 16,624 | 6,174,031 | 30,365 | 508,248 | 657,806 | 166,952 | 827,650 | 0 |
| 1999 | 3,696,973 | 3,195,685 | 71,662 | 3,678,076 | 18,305 | 501,486 | 710,674 | 815,001 | 1,375,575 | 0 |
| 2000 | 2,372,130 | 1,420,806 | 40,083 | 1,954,947 | 0 | 374,972 | 257,146 | 617,664 | 508,258 | 0 |
| 2001 | 2,680,895 | 460,256 | 53,460 | 759,169 | 0 | 213,385 | 445,872 | 1,339,699 | 119,363 | 0 |
| 2002 | 1,668,457 | 567,521 | 74,145 | 936,215 | 0 | 140,035 | 529,674 | 2,414,011 | 841,746 | 0 |
| 2003 | 1,445,146 | 411,258 | 44,506 | 678,236 | 0 | 405,376 | 277,984 | 780,631 | 624,561 | 3,303 |
| 2004 | 1,813,317 | 554,874 | 71,974 | 760,283 | 0 | 465,965 | 368,929 | 2,072,770 | 449,963 | 44,648 |
| 2005 | 2,047,638 | 1,721,141 | 32,667 | 1,987,091 | 0 | 542,366 | 400,828 | 1,568,493 | 566,063 | 41,448 |
| 2006 | 2,845,985 | 5,071,235 | 26,843 | 2,093,821 | 0 | 1,417,777 | 442,278 | 1,533,665 | 681,916 | 265,078 |
| 2007 | 2,990,954 | 3,225,680 | 77,880 | 1,331,802 | 0 | 2,023,088 | 710,515 | 2,639,102 | 177,256 | 248,328 |
| 2008 | 3,547,772 | 4,059,802 | 74,029 | 2,237,582 | 1,845 | 2,200,333 | 1,052,126 | 3,410,480 | 629,597 | 616,986 |
| 2009 | 3,350,539 | 4,067,070 | 79,671 | 1,633,327 | 3,263 | 2,559,670 | 1,152,062 | 3,948,007 | 1,025,723 | 819,589 |
| 2010 | 4,321,133 | 7,385,867 | 31,714 | 2,730,993 | 177 | 3,304,241 | 810,142 | 4,668,858 | 1,673,291 | 1,048,807 |
| 2011 | 4,952,954 | 5,605,548 | 13,018 | 2,290,872 | 407 | 309,065 | 551,068 | 2,185,513 | 1,468,910 | 954,501 |
| 2012 | 5,401,397 | 8,864,502 | 48,852 | 3,451,280 | 495 | 848,848 | 1,072,349 | 7,388,666 | 1,677,958 | 1,225,982 |
| 2013 | 2,563,236 | 3,520,765 | 77,123 | 1,425,559 | 3,270 | 475,946 | 512,798 | 1,986,377 | 591,150 | 679,437 |
| 2014 | 1,148,978 | 1,021,712 | 56,389 | 644,953 | 3,804 | 273,011 | 348,413 | 787,781 | 231,637 | 284,110 |
| 2015 | 530,003 | 828,767 | 25,589 | 460,870 | 2,214 | 205,015 | 131,952 | 568,141 | 185,603 | 90,577 |
| 2016 | 153,406 | 165,508 | 3,945 | 121,267 | 746 | 46,118 | 29,017 | 118,424 | 48,184 | 18,721 |
| 2017 | 119,205 | 110,299 | 2,891 | 95,545 | 657 | 29,311 | 20,939 | 70,192 | 34,110 | 8,651 |
| 2018 | 85,787 | 85,403 | 2,103 | 70,397 | 469 | 20,362 | 15,188 | 51,026 | 24,861 | 6,848 |
| 2019 | 127,501 | 117,165 | 3,166 | 101,810 | 705 | 30,899 | 22,593 | 75,136 | 36,736 | 9,297 |
| 2020 | 238,619 | 221,414 | 6,022 | 190,956 | 1,307 | 58,724 | 42,420 | 139,256 | 67,928 | 17,127 |
| 2021 | 509,958 | 566,822 | 23,763 | 228,408 | 0 | 205,055 | 112,824 | 420,353 | 117,994 | 104,876 |
| 2022 | 7,182 | 7,983 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2023 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2024 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2025 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2026 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2027 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2028 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2029 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2030 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2031 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2032 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2033 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2034 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| 2035 | 7,183 | 7,982 | 335 | 3,217 | 0 | 2,888 | 1,589 | 5,920 | 1,662 | 1,477 |
| TOTAL | 96,565,861 | 90,956,155 | 2,518,448 | 82,463,432 | 710,312 | 23,825,745 | 16,765,913 | 51,970,262 | 28,483,411 | 6,508,992 |

^a 1983 through 2018 charges are debt service only and do not include bond cover.^b 2009 through 2020 charges include Reid Gardner separation costs that are allocated to SWP water contractors based on theoretical energy use over the facility service life, 1983–2013.^c Costs allocated to contractors in 1989 through 2002 are reduced by credits for Off-Aqueduct Power Facility costs allocated to the pumping of non-SWP water.

TABLE B-16B Minimum OMP&R Component of Transportation Charge for Each Contractor for Off-Aqueduct Power Facilities^{a,b,c} (in dollars)

Sheet 4 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | Total State Water Project ^c |
|---------------|--------------------------------------|----------------------|------------------|----------------------|--------------------|----------|----------|----------|--|
| | Santa Clarita ^d | Metropolitan | Ventura | Total | Yuba City | Butte | Plumas | Total | |
| | [29] | [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 411,247 | 12,791,358 | 0 | 16,045,220 | 0 | 0 | 0 | 0 | 20,182,468 |
| 1984 | 1,122,640 | 39,229,567 | 0 | 47,840,887 | 0 | 0 | 0 | 0 | 60,556,781 |
| 1985 | 1,572,025 | 77,446,523 | 0 | 89,844,437 | 0 | 0 | 0 | 0 | 108,590,343 |
| 1986 | 1,694,487 | 77,581,287 | 0 | 90,192,510 | 0 | 0 | 0 | 0 | 107,702,921 |
| 1987 | 1,694,698 | 68,939,195 | 0 | 82,614,055 | 0 | 0 | 0 | 0 | 99,411,597 |
| 1988 | 1,776,471 | 79,936,309 | 0 | 92,720,660 | 0 | 0 | 0 | 0 | 108,898,833 |
| 1989 | 1,348,806 | 68,311,546 | 0 | 78,302,473 | 0 | 0 | 0 | 0 | 89,857,307 |
| 1990 | 1,335,341 | 83,964,409 | 277,885 | 95,002,982 | 0 | 0 | 0 | 0 | 104,000,038 |
| 1991 | 531,160 | 54,214,229 | 132,209 | 61,123,236 | 0 | 0 | 0 | 0 | 64,233,890 |
| 1992 | 1,548,472 | 72,401,054 | 0 | 82,482,592 | 0 | 0 | 0 | 0 | 92,173,695 |
| 1993 | 1,332,392 | 55,312,615 | 0 | 69,847,379 | 0 | 0 | 0 | 0 | 87,174,348 |
| 1994 | 1,450,328 | 72,838,621 | 0 | 86,354,006 | 0 | 0 | 0 | 0 | 97,722,979 |
| 1995 | 1,901,361 | 40,862,813 | 0 | 56,786,199 | 0 | 0 | 0 | 0 | 74,988,898 |
| 1996 | 1,507,542 | 36,536,259 | 401 | 57,198,086 | 0 | 0 | 0 | 0 | 71,940,675 |
| 1997 | 1,468,949 | 37,121,379 | 108,559 | 54,131,368 | 0 | 0 | 0 | 0 | 65,536,671 |
| 1998 | 1,599,394 | 30,341,609 | 149,170 | 52,004,747 | 0 | 0 | 0 | 0 | 65,310,733 |
| 1999 | 1,694,851 | 42,257,580 | 106,226 | 58,122,094 | 0 | 0 | 0 | 0 | 72,133,666 |
| 2000 | 994,396 | 43,977,877 | 123,318 | 52,641,597 | 0 | 0 | 0 | 0 | 60,213,003 |
| 2001 | 1,418,179 | 49,405,276 | 84,868 | 56,980,422 | 0 | 0 | 0 | 0 | 62,827,875 |
| 2002 | 1,384,832 | 45,412,974 | 153,549 | 54,123,159 | 0 | 0 | 0 | 0 | 59,683,427 |
| 2003 | 1,353,956 | 41,917,356 | 129,134 | 48,071,447 | 0 | 0 | 0 | 0 | 53,245,891 |
| 2004 | 1,677,090 | 58,676,035 | 170,851 | 67,126,699 | 0 | 0 | 0 | 0 | 73,135,768 |
| 2005 | 1,443,555 | 56,220,579 | 61,131 | 66,633,000 | 0 | 0 | 0 | 0 | 75,946,420 |
| 2006 | 1,617,750 | 60,701,335 | 70,268 | 76,767,951 | 0 | 0 | 0 | 0 | 85,894,802 |
| 2007 | 1,864,667 | 61,354,857 | 119,861 | 76,763,990 | 0 | 0 | 0 | 0 | 83,828,015 |
| 2008 | 3,303,503 | 72,144,765 | 300,729 | 93,579,549 | 0 | 0 | 0 | 0 | 102,461,628 |
| 2009 | 3,010,931 | 71,530,603 | 313,357 | 93,493,812 | 0 | 0 | 0 | 0 | 102,494,682 |
| 2010 | 2,663,067 | 88,263,837 | 322,003 | 117,224,130 | 0 | 0 | 0 | 0 | 128,041,374 |
| 2011 | 1,811,301 | 80,381,761 | 225,564 | 100,750,482 | 0 | 0 | 0 | 0 | 113,077,671 |
| 2012 | 2,619,529 | 78,031,475 | 299,385 | 110,930,718 | 0 | 0 | 0 | 0 | 121,679,597 |
| 2013 | 2,266,914 | 49,351,291 | 144,019 | 63,597,885 | 0 | 0 | 0 | 0 | 71,469,014 |
| 2014 | 1,191,895 | 24,242,063 | 30,070 | 30,264,816 | 0 | 0 | 0 | 0 | 34,698,576 |
| 2015 | 545,173 | 14,384,861 | 27,465 | 17,986,230 | 0 | 0 | 0 | 0 | 20,267,259 |
| 2016 | 94,339 | 3,266,601 | 7,114 | 4,073,390 | 0 | 0 | 0 | 0 | 4,612,417 |
| 2017 | 68,403 | 2,367,279 | 5,183 | 2,932,665 | 0 | 0 | 0 | 0 | 3,341,677 |
| 2018 | 50,106 | 1,692,358 | 3,406 | 2,108,314 | 0 | 0 | 0 | 0 | 2,403,077 |
| 2019 | 73,831 | 2,537,313 | 6,308 | 3,142,460 | 0 | 0 | 0 | 0 | 3,580,185 |
| 2020 | 137,685 | 4,705,508 | 10,441 | 5,837,407 | 0 | 0 | 0 | 0 | 6,650,000 |
| 2021 | 343,515 | 6,958,287 | 74,321 | 9,666,176 | 0 | 0 | 0 | 0 | 10,650,000 |
| 2022 | 4,838 | 97,997 | 1,047 | 136,134 | 0 | 0 | 0 | 0 | 150,000 |
| 2023 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2024 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2025 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2026 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2027 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2028 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2029 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2030 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2031 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2032 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2033 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2034 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| 2035 | 4,838 | 97,992 | 1,047 | 136,128 | 0 | 0 | 0 | 0 | 150,000 |
| TOTAL | 53,992,508 | 1,868,982,541 | 3,471,448 | 2,327,215,028 | 0 | 0 | 0 | 0 | 2,672,718,201 |

^a 1983 through 2018 charges are debt service only and do not include bond cover.^b 2009 through 2020 charges include Reid Gardner separation costs that are allocated to SWP water contractors based on theoretical energy use over the facility service life, 1983–2013.^c Costs allocated to contractors in 1989 through 2002 are reduced by credits for Off-Aqueduct Power Facility costs allocated to the pumping of non-SWP water.^d Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-17 Unit Variable OMP&R Component of Transportation Charge (in dollars per acre-foot)

Sheet 1 of 5

| Calendar Year | NORTH BAY AQUEDUCT | | | | | | SOUTH BAY AQUEDUCT | | CALIFORNIA AQUEDUCT | |
|---------------|-----------------------------|----------------------|-------------------------------|----------------------|--|----------------------|---|----------------------|---------------------|----------------------|
| | Reach 1 | | Reach 3A | | Reach 3B | | Reach 1 | | Reach 1 | |
| | Barker Slough Pumping Plant | | Cordelia Pumping Plant Solano | | Cordelia Pumping Plant Napa ^a | | South Bay and Del Valle Pumping Plants ^b | | Banks Pumping Plant | |
| | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate |
| 1961 | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 4.1511341 | 4.1511341 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 4.5639383 | 4.5639383 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 3.5452154 | 3.5452154 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 4.1911773 | 4.1911773 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 3.5074573 | 3.5074573 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 3.9306767 | 4.1752198 | 0.2445431 | 0.2445431 |
| 1968 | 0 | 0 | 0 | 0 | 5.7570017 | 5.7570017 | 3.3315620 | 4.8750942 | 1.5435322 | 1.5435322 |
| 1969 | 0 | 0 | 0 | 0 | 3.1823595 | 3.1823595 | 3.6949019 | 4.8016170 | 1.1067151 | 1.1067151 |
| 1970 | 0 | 0 | 0 | 0 | 3.7584301 | 3.7584301 | 4.4256141 | 5.3721490 | 0.9465349 | 0.9465349 |
| 1971 | 0 | 0 | 0 | 0 | 4.2082507 | 4.2082507 | 3.8714396 | 4.7522833 | 0.8808437 | 0.8808437 |
| 1972 | 0 | 0 | 0 | 0 | 3.9577735 | 3.9577735 | 4.3250690 | 5.2281686 | 0.9030996 | 0.9030996 |
| 1973 | 0 | 0 | 0 | 0 | 3.8103903 | 3.8103903 | 5.2455409 | 6.1841801 | 0.9386391 | 0.9386391 |
| 1974 | 0 | 0 | 0 | 0 | 3.5878850 | 3.5878850 | 6.3321503 | 7.2293909 | 0.8972406 | 0.8972406 |
| 1975 | 0 | 0 | 0 | 0 | 2.1606725 | 2.1606725 | 3.7365711 | 4.8327731 | 1.0962020 | 1.0962020 |
| 1976 | 0 | 0 | 0 | 0 | 2.9283909 | 2.9283909 | 4.5191527 | 5.7132795 | 1.1941268 | 1.1941268 |
| 1977 | 0 | 0 | 0 | 0 | 2.7516411 | 2.7516411 | 4.7630172 | 6.5309908 | 1.7679736 | 1.7679736 |
| 1978 | 0 | 0 | 0 | 0 | 3.5949619 | 3.5949619 | 5.2086183 | 6.8200210 | 1.6114026 | 1.6114026 |
| 1979 | 0 | 0 | 0 | 0 | 2.4747752 | 2.4747752 | 4.9524184 | 7.0944849 | 2.1420665 | 2.1420665 |
| 1980 | 0 | 0 | 0 | 0 | 2.9737588 | 2.9737588 | 4.5186576 | 5.8810391 | 1.3623815 | 1.3623815 |
| 1981 | 0 | 0 | 0 | 0 | 2.6488168 | 2.6488168 | 4.3834851 | 6.4541818 | 2.0706967 | 2.0706967 |
| 1982 | 0 | 0 | 0 | 0 | 10.0222589 | 10.0222589 | 5.6383622 | 7.4005197 | 1.7621575 | 1.7621575 |
| 1983 | 0 | 0 | 0 | 0 | 1.0240490 | 1.0240490 | 0.8686401 | 1.7143948 | 0.8457546 | 0.8457546 |
| 1984 | 0 | 0 | 0 | 0 | 1.6496750 | 1.6496750 | 2.7674018 | 3.9368186 | 1.1694168 | 1.1694168 |
| 1985 | 0 | 0 | 0 | 0 | 2.5224065 | 2.5224065 | 3.6942206 | 5.2987621 | 1.6045415 | 1.6045415 |
| 1986 | 0 | 0 | 0 | 0 | 4.4049446 | 4.4049446 | 7.2799222 | 10.5919298 | 3.3120077 | 3.3120077 |
| 1987 | 0 | 0 | 0 | 0 | 3.5386715 | 3.5386715 | 6.4837861 | 9.2276309 | 2.7438448 | 2.7438448 |
| 1988 | 1.1782643 | 1.1782643 | 0 | 1.1782643 | 4.4547478 | 5.6330121 | 6.1750026 | 8.8623074 | 2.6873049 | 2.6873049 |
| 1989 | 1.2715449 | 1.2715449 | 2.5423866 | 3.8139316 | 4.2807103 | 5.5522552 | 8.1617218 | 11.6840191 | 3.5222973 | 3.5222973 |
| 1990 | 2.0026083 | 2.0026083 | 4.2324041 | 6.2350124 | 5.8753602 | 7.8779685 | 11.7200790 | 15.8516543 | 4.1315753 | 4.1315753 |
| 1991 | 1.2486830 | 1.2486830 | 2.6246433 | 3.8733263 | 3.8057971 | 5.0544801 | 7.5402615 | 11.2354099 | 3.6951485 | 3.6951485 |
| 1992 | 0.7094386 | 0.7094386 | 1.4175705 | 2.1270091 | 2.3509123 | 3.0603509 | 4.0600958 | 6.3925272 | 2.3324315 | 2.3324315 |
| 1993 | -0.3464574 | -0.3464574 | -0.6048649 | -0.9513223 | -1.0200530 | -1.3665104 | -1.4929934 | -1.2571378 | 0.2358556 | 0.2358556 |
| 1994 | 1.4600287 | 1.4600287 | 2.6570107 | 4.1170394 | 4.2975560 | 5.7575847 | 7.9510779 | 11.2405895 | 3.2895116 | 3.2895116 |
| 1995 | 0.7544766 | 0.7544766 | 1.2974265 | 2.0519031 | 2.2753763 | 3.0298529 | 3.2312761 | 5.2610469 | 2.0297708 | 2.0297708 |
| 1996 | 1.6427835 | 1.6427835 | 2.7704025 | 4.4131859 | 4.7993051 | 6.4420886 | 8.0186492 | 11.3633990 | 3.3447498 | 3.3447498 |
| 1997 | 1.7801484 | 1.7801484 | 3.0246843 | 4.8048327 | 5.0575904 | 6.8377388 | 9.6521246 | 12.6148370 | 2.9627125 | 2.9627125 |
| 1998 | -0.3253238 | -0.3253238 | -0.5570754 | -0.8823992 | -0.9104311 | -1.2357549 | -1.8866894 | -1.7684350 | 0.1182544 | 0.1182544 |
| 1999 | 0.8136316 | 0.8136316 | 1.3344157 | 2.1480473 | 2.2476094 | 3.0612409 | 4.1251508 | 6.5396327 | 2.4144819 | 2.4144819 |
| 2000 | 1.3866159 | 1.3866159 | 1.9633803 | 3.3499962 | 3.0210750 | 4.4076910 | 6.3105300 | 8.6058809 | 2.2953510 | 2.2953510 |
| 2001 | 8.1191305 | 8.1191305 | 12.5398434 | 20.6589739 | 22.6630508 | 30.7821813 | 42.1952424 | 54.9383080 | 12.7430656 | 12.7430656 |
| 2002 | 4.1919307 | 4.1919307 | 5.3026984 | 9.4946291 | 8.9411156 | 13.1304633 | 18.1208636 | 24.2060285 | 6.0779649 | 6.0779649 |
| 2003 | 4.3522704 | 4.3522704 | 7.0890449 | 11.4413153 | 12.8010554 | 17.1533258 | 19.2857696 | 26.0112488 | 6.7254792 | 6.7254792 |
| 2004 | 4.9185632 | 4.9185632 | 6.4207890 | 11.3393522 | 12.6192952 | 17.5378585 | 19.8727176 | 27.1452671 | 7.2725495 | 7.2725495 |
| 2005 | 6.2706237 | 6.2706237 | 7.7072771 | 13.9779008 | 18.6144338 | 24.8850574 | 25.9514011 | 34.0659018 | 8.1145007 | 8.1145007 |
| 2006 | 5.4399330 | 5.4399330 | 6.2619983 | 11.7019313 | 18.2806670 | 23.7206000 | 22.8767223 | 29.6914075 | 6.8146852 | 6.8146852 |
| 2007 | 7.7565132 | 7.7565132 | 8.2044767 | 15.9609899 | 22.7899406 | 30.5464538 | 31.6225798 | 40.8497250 | 9.2271452 | 9.2271452 |
| 2008 | 7.7708559 | 7.7708559 | 10.0844978 | 17.8553537 | 22.0071841 | 29.7780400 | 28.6363166 | 40.9963648 | 12.3600482 | 12.3600482 |
| 2009 | 5.2290168 | 5.2290168 | 6.6735365 | 11.9025533 | 14.3310381 | 19.5600549 | 21.2121498 | 27.1242016 | 5.9120518 | 5.9120518 |
| 2010 | 6.0239636 | 6.0239636 | 8.7796035 | 14.8035672 | 16.7617771 | 22.7857407 | 24.7880488 | 34.2224840 | 9.4344352 | 9.4344352 |
| 2011 | 6.8696533 | 6.8696533 | 9.0284149 | 15.8980682 | 20.2247175 | 27.0943708 | 29.9210149 | 40.7362625 | 10.8152476 | 10.8152476 |
| 2012 | 6.7320130 | 6.7320130 | 9.2934146 | 16.0254276 | 18.7001947 | 25.4322078 | 30.5390134 | 40.7480817 | 10.2090683 | 10.2090683 |
| 2013 | 9.0104997 | 9.0104997 | 10.7347361 | 19.7452359 | 25.8940728 | 34.9045725 | 36.6123970 | 49.7074969 | 13.0950999 | 13.0950999 |
| 2014 | 10.7466687 | 10.7466687 | 15.0610634 | 25.8077321 | 31.7752404 | 42.5219091 | 45.4016678 | 65.0875117 | 19.6858439 | 19.6858439 |
| 2015 | 11.1306471 | 11.1306471 | 15.6384394 | 26.7690865 | 32.2957190 | 43.4263661 | 47.7642146 | 68.1643571 | 20.4001425 | 20.4001425 |
| 2016 | 8.5153491 | 8.5153491 | 12.3658806 | 20.8812297 | 28.6872371 | 37.2025862 | 36.8630433 | 52.1383165 | 15.2752733 | 15.2752733 |
| 2017 | 8.1424160 | 8.1424160 | 12.7512055 | 20.8936215 | 22.6878600 | 30.8302760 | 43.2340181 | 56.8766680 | 13.6426498 | 13.6426498 |
| 2018 | 10.6281398 | 10.6281398 | 15.8324935 | 26.4603633 | 26.9798525 | 37.6079923 | 40.6655564 | 56.6835619 | 16.0180055 | 16.0180055 |
| 2019 | 9.6142241 | 9.6142241 | 10.6092231 | 20.2234472 | 24.2890878 | 33.9033118 | 45.4568888 | 58.7302332 | 13.2733444 | 13.2733444 |
| 2020 | 10.7544666 | 10.7544666 | 0.0000000 | 10.7544666 | 27.1737084 | 37.9281750 | 44.7704374 | 60.3879426 | 15.6175053 | 15.6175053 |
| 2021 | 11.0951214 | 11.0951214 | 0.0000000 | 11.0951214 | 28.0343858 | 39.1295072 | 44.9886965 | 61.0280388 | 16.0393423 | 16.0393423 |
| 2022 | 11.9319167 | 11.9319167 | 0.0000000 | 11.9319167 | 26.8841561 | 32.6160729 | 41.6077388 | 50.4820899 | 18.8743511 | 18.8743511 |
| 2023 | 11.9615134 | 11.9615134 | 0.0000000 | 11.9615134 | 20.7354765 | 32.6969899 | 41.7120296 | 55.5363039 | 13.8242743 | 13.8242743 |
| 2024 | 11.9607329 | 11.9607329 | 0.0000000 | 11.9607329 | 20.7340987 | 32.6948316 | 41.7092715 | 56.1900937 | 14.4808222 | 14.4808222 |
| 2025 | 11.9634215 | 11.9634215 | 0.0000000 | 11.9634215 | 20.7388060 | 32.7022275 | 41.7186599 | 57.5137327 | 15.7950727 | 15.7950727 |
| 2026 | 11.9607546 | 11.9607546 | 0.0000000 | 11.9607546 | 20.7341561 | 32.6949107 | 41.7093572 | 54.9278880 | 13.2185307 | 13.2185307 |
| 2027 | 11.9640720 | 11.9640720 | 0.0000000 | 11.9640720 | 20.7398967 | 32.7039687 | 41.7209505 | 56.3056170 | 14.5846664 | 14.5846664 |
| 2028 | 11.9607329 | 11.9607329 | 0.0000000 | 11.9607329 | 20.7341561 | 32.6948890 | 41.7093261 | 55.9640680 | 14.2547420 | 14.2547420 |
| 2029 | 11.9735256 | 11.9735256 | 0.0000000 | 11.9735256 | 20.7563146 | 32.7298402 | 41.7538839 | 52.2581517 | 10.5042678 | 10.5042678 |
| 2030 | 11.9582611 | 11.9582611 | 0.0000000 | 11.9582611 | 20.7298508 | 32.6881118 | 41.7006467 | 56.2763978 | 14.5757511 | 14.5757511 |
| 2031 | 11.9659801 | 11.9659801 | 0.0000000 | 11.9659801 | 20.7432262 | 32.7092062 | 41.7275964 | 56.0866580 | 14.3590616 | 14.3590616 |
| 2032 | 11.9446661 | 11.9446661 | 0.0000000 | 11.9446661 | 20.7062572 | 32.6509233 | 42.8762836 | 60.6716392 | 17.7953556 | 17.7953556 |
| 2033 | 11.9665004 | 11.9665004 | 0.0000000 | | | | | | | |

TABLE B-17 Unit Variable OMP&R Component of Transportation Charge (in dollars per acre-foot)

Sheet 2 of 5

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|---------------------------------|----------------------|---------------------------|----------------------|-----------------------|----------------------|------------------------|----------------------|-------------------------|----------------------|
| | Reach 4 | | Reach 14A | | Reach 15A | | Reach 16A | | Reach 17E | |
| | Dos Amigos Pumping Plant | | Buena Vista Pumping Plant | | Teerink Pumping Plant | | Chrisman Pumping Plant | | Edmonston Pumping Plant | |
| | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate |
| [11] | [12] | [13] | [14] | [15] | [16] | [17] | [18] | [19] | [20] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 1.0732031 | 2.6167353 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0.7028165 | 1.8095316 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0.7813430 | 1.7278778 | 0.3333333 | 2.0612111 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0.4125312 | 1.2933749 | 1.1407617 | 2.4341366 | 0.7218469 | 3.1559834 | 0 | 0 | 0 | 0 |
| 1972 | 0.5662758 | 1.4693754 | 0.8894941 | 2.3588694 | 0.8040021 | 3.1628715 | 1.8113853 | 4.9742569 | 7.3206022 | 12.2948591 |
| 1973 | 0.5996892 | 1.5383283 | 0.8469026 | 2.3852309 | 1.0302066 | 3.4154375 | 1.8458304 | 5.2612679 | 7.4512435 | 12.7125113 |
| 1974 | 0.5736894 | 1.4709300 | 0.8122890 | 2.2823219 | 0.9665911 | 3.2498101 | 1.7739395 | 5.0237496 | 6.9004732 | 11.9242227 |
| 1975 | 0.4606980 | 1.5569000 | 0.7554447 | 2.3123448 | 0.8894108 | 3.2017555 | 1.8682537 | 5.0700092 | 6.9962702 | 12.0662794 |
| 1976 | 0.5163828 | 1.7105095 | 0.9081491 | 2.6186586 | 0.9640628 | 3.5827214 | 2.1499640 | 5.7326854 | 7.9384515 | 13.6711369 |
| 1977 | 0.6138931 | 2.3818668 | 0.9835371 | 3.3654038 | 1.2303967 | 4.5958005 | 2.7357728 | 7.3315733 | 9.9990004 | 17.3305737 |
| 1978 | 0.4545898 | 2.0659925 | 0.9044582 | 2.9704506 | 0.9762058 | 3.9466564 | 1.8872449 | 5.8339014 | 7.0810192 | 12.9149206 |
| 1979 | 0.6587934 | 2.8008600 | 1.0519199 | 3.8527798 | 1.1976258 | 5.0504056 | 2.6012890 | 7.6516946 | 9.6345625 | 17.2862572 |
| 1980 | 0.8021465 | 2.1645280 | 1.3516057 | 3.5161337 | 1.5041463 | 5.0202800 | 3.1923433 | 8.2126233 | 10.9860288 | 19.1986521 |
| 1981 | 1.0923907 | 3.1630874 | 1.2409168 | 4.4040042 | 1.3219771 | 5.7259813 | 2.9592932 | 8.6852745 | 9.9649551 | 18.6502296 |
| 1982 | 0.8326785 | 2.5948359 | 1.2041660 | 3.7990019 | 1.3723736 | 5.1713756 | 2.8986491 | 8.0700247 | 10.2096358 | 18.2796606 |
| 1983 | 0.3647859 | 1.2105406 | 0.7590265 | 1.9695670 | 0.8857383 | 2.8553053 | 1.7623405 | 4.6176458 | 5.5086367 | 10.1262825 |
| 1984 | 0.6581523 | 1.8275691 | 1.0533611 | 2.8809302 | 1.2188270 | 4.097572 | 2.5407768 | 6.6405340 | 8.2344665 | 14.8750006 |
| 1985 | 0.8726163 | 2.4771579 | 1.4204831 | 3.8976409 | 1.6516291 | 5.5492701 | 3.4695783 | 9.0188484 | 11.8181234 | 20.8369718 |
| 1986 | 1.3996542 | 4.7116618 | 2.3713282 | 7.0829901 | 2.7567970 | 9.8397871 | 5.9534613 | 15.7932484 | 20.6010240 | 36.3942724 |
| 1987 | 1.2912643 | 4.0351091 | 2.2344385 | 6.2695475 | 2.5459999 | 8.8155474 | 5.3141190 | 14.1296664 | 17.7628277 | 31.8924941 |
| 1988 | 1.1947837 | 3.8820886 | 2.1129991 | 5.9950877 | 2.4017135 | 8.3968012 | 5.0055748 | 13.4023759 | 16.6001692 | 30.0025452 |
| 1989 | 1.4935226 | 5.0158199 | 2.6947446 | 7.7105645 | 3.0084211 | 10.7189856 | 6.5499538 | 17.2689394 | 22.1795336 | 39.4484730 |
| 1990 | 1.8962463 | 6.0278216 | 3.3080372 | 9.3358588 | 3.7483036 | 13.0841624 | 8.6832678 | 21.7674302 | 31.0405219 | 52.8079521 |
| 1991 | 1.0437991 | 4.7389476 | 2.1132495 | 6.8521971 | 2.4154810 | 9.2676780 | 5.6823745 | 14.9500525 | 20.4744695 | 35.4245220 |
| 1992 | 0.9002103 | 3.2326417 | 1.4836761 | 4.7163178 | 1.7077297 | 6.4240475 | 3.5445788 | 9.9686263 | 12.0459599 | 22.0145862 |
| 1993 | 0.1605206 | 0.3963762 | -0.1405164 | 0.2558598 | -0.1312944 | 0.1245654 | -0.7754796 | -0.6509143 | -3.5828989 | -4.2338132 |
| 1994 | 1.4208578 | 4.7103693 | 2.5100856 | 7.2204549 | 2.8029168 | 10.0233717 | 6.0772994 | 16.1006661 | 21.5000984 | 37.6007645 |
| 1995 | 0.7974861 | 2.8272569 | 1.3474564 | 4.1747133 | 1.9459529 | 5.6692662 | 3.1250716 | 8.7943378 | 10.7461772 | 19.5405149 |
| 1996 | 1.6726383 | 5.0173881 | 2.5952092 | 7.6125973 | 2.8425227 | 10.4551200 | 6.3087407 | 16.7638607 | 22.6420778 | 39.4059385 |
| 1997 | 1.2769880 | 4.2397005 | 2.5012144 | 6.7409148 | 2.6893394 | 9.4302542 | 6.2890095 | 15.7192637 | 23.0714697 | 38.7907334 |
| 1998 | -0.2195574 | -0.1013030 | -0.4232465 | -0.5245494 | -0.4504610 | -0.9750105 | -1.0585256 | -2.0335361 | -3.8077856 | -5.8413217 |
| 1999 | 0.8634492 | 3.2779311 | 1.4586807 | 4.7366118 | 1.3440477 | 6.0806594 | 3.5713752 | 9.6520347 | 14.2047038 | 23.8567384 |
| 2000 | 0.9235333 | 3.2188842 | 1.6219853 | 4.8408695 | 1.7828715 | 6.6237410 | 4.2029220 | 10.8266630 | 15.3882971 | 26.2149601 |
| 2001 | 6.0480040 | 18.7910696 | 11.1462381 | 29.9373077 | 12.2218485 | 42.1591562 | 28.2483594 | 70.4075156 | 105.7300557 | 176.1375712 |
| 2002 | 2.6241935 | 8.7021584 | 4.6014533 | 13.3036118 | 5.0195728 | 18.3231845 | 11.6145173 | 29.9377018 | 43.1577241 | 73.0954260 |
| 2003 | 3.1186984 | 9.8441776 | 5.5847107 | 15.4288833 | 6.0840848 | 21.5129731 | 14.1510704 | 35.6640435 | 52.6131846 | 88.2772280 |
| 2004 | 3.3307184 | 10.6032678 | 5.8667696 | 16.4700374 | 6.3726502 | 22.8426876 | 14.8454678 | 37.6881554 | 55.1910093 | 92.8791647 |
| 2005 | 3.8324365 | 11.9469372 | 6.8775620 | 18.8244992 | 7.4553008 | 26.2798000 | 17.3347915 | 43.6145915 | 62.0851423 | 105.6997338 |
| 2006 | 3.1144730 | 9.9291583 | 5.7859180 | 15.7150763 | 6.2267827 | 21.9418590 | 14.5539029 | 36.4957619 | 46.2558612 | 82.7516231 |
| 2007 | 4.5136242 | 13.7407695 | 8.0771893 | 21.8179534 | 8.7445154 | 30.5624688 | 20.2731217 | 50.8355905 | 68.5883379 | 119.4239284 |
| 2008 | 4.7933525 | 17.1534007 | 8.9149997 | 26.0648004 | 10.3634342 | 36.4318346 | 21.6281271 | 58.0599617 | 68.9926794 | 127.0526411 |
| 2009 | 3.0968855 | 9.0089373 | 5.6809459 | 14.6898832 | 6.2892860 | 20.9791691 | 13.8643055 | 34.8434746 | 63.6302941 | 98.4737687 |
| 2010 | 4.1046051 | 15.3590403 | 7.0457017 | 20.5847420 | 7.6441377 | 28.2288816 | 17.4935232 | 45.7224048 | 64.9239709 | 110.6463757 |
| 2011 | 4.5655551 | 15.3808027 | 8.0295979 | 23.4104006 | 8.6501186 | 32.0605192 | 19.9056935 | 51.9664827 | 70.7123833 | 122.6788660 |
| 2012 | 4.5925965 | 14.8016647 | 7.9558475 | 22.7575122 | 8.7049575 | 31.4624697 | 20.0477174 | 51.5101871 | 71.2778178 | 122.7788049 |
| 2013 | 5.6612535 | 18.7563535 | 9.6946505 | 28.4510040 | 10.5605002 | 39.0115041 | 24.4802371 | 63.4917412 | 87.7240372 | 151.2157784 |
| 2014 | 8.4261227 | 28.1119666 | 13.7868372 | 41.8988038 | 15.2294677 | 57.1282715 | 34.8113918 | 91.9366333 | 126.7748901 | 218.7145534 |
| 2015 | 7.8886788 | 28.2888213 | 14.0810924 | 42.3699136 | 15.4698214 | 57.8397350 | 35.0105006 | 92.8502356 | 130.0456436 | 222.8958792 |
| 2016 | 6.5568321 | 21.8321054 | 11.6565377 | 33.4886431 | 12.8208300 | 46.3094732 | 29.0028308 | 75.3123040 | 109.0257087 | 184.3380127 |
| 2017 | 6.2792261 | 19.9218759 | 11.1324127 | 31.0542886 | 12.3601407 | 43.4144293 | 27.8105140 | 71.2249433 | 104.7439413 | 175.9688446 |
| 2018 | 6.5910417 | 22.6090472 | 11.9754348 | 34.5844910 | 13.2830290 | 47.8675870 | 30.0011511 | 77.8687341 | 113.0000377 | 190.8687718 |
| 2019 | 6.4486015 | 19.7219459 | 11.8049114 | 31.5268573 | 12.4624478 | 43.9890351 | 28.3520953 | 72.3416146 | 104.1488557 | 176.4904703 |
| 2020 | 6.8744533 | 22.4919585 | 12.5009234 | 34.9928819 | 13.5820059 | 48.5748878 | 31.5422864 | 80.1171741 | 117.4607009 | 197.5778751 |
| 2021 | 6.9508163 | 22.9901586 | 12.6717182 | 35.6618768 | 13.7540006 | 49.4158774 | 31.8943324 | 81.3102098 | 118.5877680 | 199.897779 |
| 2022 | 7.2852797 | 26.1596308 | 13.1931011 | 39.3527320 | 14.3098404 | 53.6625724 | 33.1956074 | 86.8581798 | 123.4767764 | 210.3349562 |
| 2023 | 7.2784337 | 21.1027080 | 13.1623132 | 34.2650212 | 14.2727296 | 48.5377508 | 33.1065740 | 81.6443248 | 123.1352709 | 204.779556 |
| 2024 | 7.1860189 | 21.6668411 | 12.9224330 | 34.5892740 | 13.9988509 | 48.5881249 | 32.4604035 | 81.0485284 | 120.6937537 | 201.7422821 |
| 2025 | 7.2598837 | 23.0549564 | 13.1129440 | 36.1679004 | 14.2161871 | 50.3840875 | 32.9730372 | 83.3571247 | 122.6302401 | 205.9873648 |
| 2026 | 7.1468130 | 20.3653437 | 12.8213062 | 33.1866499 | 13.8835295 | 47.0701794 | 32.1884350 | 79.2586144 | 119.6665418 | 198.9251563 |
| 2027 | 7.2767801 | 21.8614466 | 13.1567369 | 35.0181834 | 14.2661910 | 49.2843744 | 33.0910173 | 82.3753917 | 123.0760411 | 205.4514358 |
| 2028 | 7.1826268 | 21.4373688 | 12.9136586 | 34.3510274 | 13.9888397 | 48.3398671 | 32.4367903 | 80.7766574 | 120.6045549 | 201.3812123 |
| 2029 | 7.2553737 | 17.7596414 | 13.0962839 | 30.8559253 | 14.1965079 | 45.0524333 | 32.9261129 | 77.9785461 | 122.4512318 | 200.4297779 |
| 2030 | 7.1557834 | 21.7315345 | 12.8455657 | 34.5771002 | 13.9113388 | 48.4884390 | 32.2541276 | | | |

TABLE B-17 Unit Variable OMP&R Component of Transportation Charge (in dollars per acre-foot)

Sheet 3 of 5

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | |
|---------------|---------------------------------|----------------------|---------------------------|----------------------|--------------------------|----------------------|-------------------------|----------------------|
| | Reach 18A | | Reach 22B | | Reach 23 | | Reach 26A | |
| | Alamo Powerplant | | Pearblossom Pumping Plant | | Mojave Siphon Powerplant | | Devil Canyon Powerplant | |
| | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate |
| [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 1.9331104 | 14.2279695 | 0 | 0 | -2.3717647 | 11.8562048 |
| 1973 | 0 | 0 | 3.8751940 | 16.5877053 | 0 | 0 | -8.9027252 | 7.6849801 |
| 1974 | 0 | 0 | 3.1602116 | 15.0844343 | 0 | 0 | -5.3440968 | 9.7403376 |
| 1975 | 0 | 0 | 3.0210558 | 15.0873353 | 0 | 0 | -5.7803309 | 9.3070043 |
| 1976 | 0 | 0 | 3.7579009 | 17.4290378 | 0 | 0 | -6.6439666 | 10.7850713 |
| 1977 | 0 | 0 | 3.0796474 | 20.4102211 | 0 | 0 | -12.0911833 | 8.3190378 |
| 1978 | 0 | 0 | 4.0233030 | 16.9382236 | 0 | 0 | -8.2569506 | 8.6812730 |
| 1979 | 0 | 0 | 5.0776468 | 22.3639040 | 0 | 0 | -9.7140035 | 12.6499005 |
| 1980 | 0 | 0 | 4.3918283 | 23.5904804 | 0 | 0 | -8.3797007 | 15.2107797 |
| 1981 | 0 | 0 | 3.9973528 | 22.6475824 | 0 | 0 | -6.7528590 | 15.8947235 |
| 1982 | 0 | 0 | 3.6829998 | 21.9626604 | 0 | 0 | -6.9238898 | 15.0387706 |
| 1983 | 0 | 0 | 1.7205305 | 11.8468130 | 0 | 0 | -23.7923457 | -11.9455328 |
| 1984 | 0 | 0 | 2.4763871 | 17.3513877 | 0 | 0 | -29.2940447 | -11.9426570 |
| 1985 | 0 | 0 | 3.4967556 | 24.3337274 | 0 | 0 | -30.7672356 | -6.4335082 |
| 1986 | -2.3583180 | 34.0359544 | 5.9864597 | 40.0224141 | 0 | 0 | -29.2499580 | 10.7724561 |
| 1987 | -2.5482255 | 29.3442686 | 5.0535029 | 34.3977715 | 0 | 0 | -29.7006534 | 4.6971181 |
| 1988 | -1.3847067 | 28.6178385 | 4.7392460 | 33.3570844 | 0 | 0 | -29.0334518 | 4.3236326 |
| 1989 | -1.1019487 | 38.3465243 | 6.4066114 | 44.7531357 | 0 | 0 | -28.3706997 | 16.3824360 |
| 1990 | -1.0673268 | 51.7406253 | 8.9787944 | 60.7194197 | 0 | 0 | -28.8797266 | 31.8396931 |
| 1991 | -1.5206590 | 33.9038630 | 6.0785417 | 39.9824047 | 0 | 0 | -30.3294563 | 9.6529484 |
| 1992 | -2.6080003 | 19.4065859 | 3.6219501 | 32.0285360 | 0 | 0 | -29.7938993 | -6.7653633 |
| 1993 | -0.1885524 | -4.4223656 | -1.0192774 | -5.4416430 | 0 | 0 | -30.6629489 | -36.1045919 |
| 1994 | -0.1279266 | 37.4728379 | 6.4513573 | 43.9241952 | 0 | 0 | -30.4781656 | 13.4460296 |
| 1995 | -3.4425314 | 16.0979836 | 3.3643070 | 19.4622905 | 0 | 0 | -30.3517624 | -10.8894719 |
| 1996 | -5.9839345 | 33.4220040 | 6.6794995 | 40.1015035 | -2.3423415 | 37.7591620 | -29.5900574 | 8.1691046 |
| 1997 | -4.7847600 | 34.0059734 | 6.8397922 | 40.8457656 | -3.8632009 | 36.9825646 | -30.6066647 | 6.3758999 |
| 1998 | -5.0614104 | -10.9027321 | -1.3239652 | -12.2266973 | -3.7700558 | -15.9967531 | -30.4293072 | -46.4260603 |
| 1999 | -4.8990186 | 18.9577198 | 3.8823748 | 32.8400946 | -5.1563836 | 17.6837110 | -30.2385322 | -12.5548211 |
| 2000 | -5.3488706 | 20.8660895 | 4.5542443 | 25.4203338 | -5.1804371 | 20.2398967 | -30.2852311 | -10.0453343 |
| 2001 | -4.6452108 | 171.4923604 | 29.6368741 | 201.1292345 | -5.7699537 | 195.3592808 | -30.9018397 | 164.4574412 |
| 2002 | -5.4660286 | 67.6293974 | 12.9716072 | 80.6010046 | -6.4072101 | 74.1937944 | -30.1661590 | 44.0276354 |
| 2003 | -3.3142156 | 84.9630124 | 15.4234144 | 100.3864268 | -7.1779336 | 93.2084932 | -30.3892607 | 62.8192325 |
| 2004 | -5.5767140 | 87.3024508 | 16.2222541 | 103.5247049 | -7.4292488 | 96.0954561 | -30.2389380 | 65.8565181 |
| 2005 | -5.5017080 | 100.1980258 | 17.9086202 | 118.1066460 | -6.6110924 | 111.4955536 | -30.2939296 | 81.2016240 |
| 2006 | -3.1387156 | 79.6129075 | 13.4602428 | 93.0733323 | -5.4976225 | 87.5757098 | -29.8005794 | 57.7751304 |
| 2007 | -2.7809444 | 116.6429340 | 20.0907832 | 136.7337172 | -6.1785168 | 130.5552004 | -30.0961198 | 100.4590807 |
| 2008 | -5.4028716 | 121.16497695 | 19.4988177 | 141.1485871 | -6.0198040 | 135.1287831 | -30.7631237 | 104.3656594 |
| 2009 | -6.3446584 | 92.1291103 | 21.4346710 | 113.5637813 | -5.4878092 | 108.0759722 | -33.3163094 | 74.7596628 |
| 2010 | -5.1343883 | 105.5119874 | 18.8693850 | 124.3813725 | -6.4564845 | 117.9248880 | -28.6783430 | 89.2465449 |
| 2011 | -5.2103711 | 117.4684949 | 20.8125082 | 138.2810032 | -7.1272044 | 131.1537988 | -29.9982569 | 101.1555419 |
| 2012 | -2.7221204 | 120.0658845 | 21.0412767 | 141.1071612 | -11.4254128 | 129.6817484 | -30.6216868 | 99.0600616 |
| 2013 | -3.7638094 | 147.4519690 | 25.9537422 | 173.4057111 | -10.3251093 | 163.0806019 | -30.7664075 | 132.3141944 |
| 2014 | -8.1801225 | 210.5344308 | 38.7200763 | 249.2545072 | -7.8617556 | 241.3927516 | -29.6636049 | 211.7291466 |
| 2015 | -9.0636991 | 213.8321801 | 40.1829542 | 254.0151344 | -9.3774506 | 244.6376838 | -29.6064491 | 215.0312347 |
| 2016 | -9.7489045 | 174.5891082 | 32.1924711 | 206.7815793 | -11.8723142 | 194.9092652 | -30.7102289 | 164.1990362 |
| 2017 | -10.1319700 | 165.8369146 | 30.8846442 | 196.7215588 | -16.8847554 | 179.8368034 | -30.2238617 | 149.6129417 |
| 2018 | -7.9723857 | 182.8863862 | 33.4375333 | 216.3339195 | -10.7812199 | 205.5526996 | -30.6554854 | 174.8972142 |
| 2019 | -7.8249471 | 168.6655231 | 27.5563044 | 196.2218275 | -12.9836547 | 183.2381728 | -27.1535145 | 156.0846584 |
| 2020 | -13.0821097 | 184.4957654 | 38.2612910 | 222.7570564 | -19.7814601 | 202.9755963 | -34.1372187 | 168.8383776 |
| 2021 | -13.1938630 | 186.7041148 | 38.5253352 | 225.2294500 | -19.8437369 | 205.3857131 | -34.2258235 | 171.1598896 |
| 2022 | -11.7502012 | 198.5847550 | 34.3251296 | 232.0908846 | -17.7136002 | 215.1962844 | -29.8812330 | 185.3150514 |
| 2023 | -11.8987481 | 192.88797216 | 34.9272584 | 228.8069799 | -17.9946079 | 209.8123721 | -30.7404818 | 179.0718903 |
| 2024 | -11.4075425 | 190.3347396 | 33.2693021 | 223.6040417 | -17.1061060 | 206.4979357 | -30.3820243 | 176.1157314 |
| 2025 | -11.8099177 | 194.1774472 | 34.6286667 | 228.8061139 | -17.8311499 | 210.9749640 | -30.2298497 | 180.7451143 |
| 2026 | -11.5057574 | 187.4193989 | 33.5979899 | 221.0173888 | -17.2821661 | 203.7352228 | -30.5584011 | 173.1768217 |
| 2027 | -11.7423474 | 193.7090884 | 34.4025552 | 228.1161463 | -17.7086992 | 210.4029444 | -30.3793596 | 180.0235848 |
| 2028 | -11.6150297 | 189.7661826 | 33.9645517 | 223.7307343 | -17.4787394 | 206.2519949 | -30.6188405 | 175.6331545 |
| 2029 | -11.6757567 | 188.7540213 | 34.2052253 | 222.9592465 | -17.5882993 | 205.3709472 | -30.2951938 | 175.0757534 |
| 2030 | -11.5602021 | 189.0973928 | 33.7734552 | 222.8708481 | -17.3800171 | 205.4908310 | -30.3968260 | 175.0940050 |
| 2031 | -12.0617244 | 203.6901207 | 35.4893993 | 239.1795200 | -18.2899728 | 220.8895472 | -30.4859119 | 190.4036353 |
| 2032 | -11.1991988 | 185.7005112 | 32.5216349 | 218.2221461 | -16.7259642 | 201.4961819 | -29.6921031 | 171.8040788 |
| 2033 | -12.0966183 | 202.7640307 | 35.6224301 | 238.3864608 | -18.3650215 | 220.0214393 | -31.3522705 | 188.6691688 |
| 2034 | -11.3233690 | 182.3952995 | 32.9936331 | 215.3889326 | -16.9556826 | 198.4332500 | -29.5873576 | 168.8458925 |
| 2035 | -12.3077322 | 234.0954429 | 36.3109242 | 270.4063671 | -18.7420719 | 251.6642952 | -31.6883814 | 219.9759138 |

TABLE B-17 Unit Variable OMP&R Component of Transportation Charge (in dollars per acre-foot)

Sheet 4 of 5

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | |
|---------------|---|----------------------|---------------------------------------|----------------------|--|----------------------|--|----------------------|
| | Reach EBX2B Greenspot Pump Station ^c | | Reach EBX2E Citrus Pump Station | | Reach EBX3A Crafton Hills Pump Station | | Reach EBX4B Cherry Valley Pump Station | |
| | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate |
| [29] | [30] | [31] | [32] | [33] | [34] | [35] | [36] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2004 | 20.6831806 | 86.5396987 | 0.0000000 | 0.0000000 | 21.4551370 | 107.9948357 | 8.6683948 | 116.6632305 |
| 2005 | 18.8666468 | 100.0682708 | 0.0000000 | 0.0000000 | 17.9350642 | 118.0033350 | 3.6760116 | 121.6793465 |
| 2006 | 15.8402264 | 73.6153568 | 0.0000000 | 0.0000000 | 20.8988523 | 94.5142091 | 20.1063569 | 114.6205660 |
| 2007 | 20.4325904 | 120.8916711 | 0.0000000 | 0.0000000 | 28.3592996 | 149.2509707 | 63.0679661 | 212.3189368 |
| 2008 | 16.8730296 | 121.2386890 | 0.0000000 | 0.0000000 | 23.8336437 | 145.0723326 | 7.1456526 | 152.2179852 |
| 2009 | 17.5414473 | 92.3011101 | 0.0000000 | 0.0000000 | 23.7640375 | 116.0651476 | 3.9661486 | 120.0312962 |
| 2010 | 17.0434808 | 106.2900258 | 0.0000000 | 0.0000000 | 24.2448779 | 130.5349037 | 3.4310185 | 133.9659222 |
| 2011 | 18.0600345 | 119.2155764 | 0.0000000 | 0.0000000 | 25.1226812 | 144.3382575 | 3.5638138 | 147.9020713 |
| 2012 | 18.3655399 | 117.4256015 | 0.0000000 | 0.0000000 | 25.8843213 | 143.3099228 | 4.3752116 | 147.6851345 |
| 2013 | 23.7496381 | 156.0638325 | 0.0000000 | 0.0000000 | 32.6008519 | 188.6646844 | 4.3536040 | 193.012884 |
| 2014 | 32.3734674 | 244.1026141 | 0.0000000 | 0.0000000 | 46.7233006 | 290.8259146 | 3.3001071 | 294.1260217 |
| 2015 | 35.0517159 | 250.0829505 | 0.0000000 | 0.0000000 | 48.7168296 | 298.7997802 | 4.3266849 | 303.1264650 |
| 2016 | 30.7370148 | 194.9360510 | 0.0000000 | 0.0000000 | 40.5047317 | 235.4407826 | 4.5291476 | 239.9699302 |
| 2017 | 55.4754984 | 205.0884401 | 33.0770274 | 182.6899691 | 38.8835425 | 221.5735116 | 5.7612137 | 227.3347253 |
| 2018 | 1.8838953 | 176.7811095 | 54.987025 | 229.8842167 | 43.4237970 | 273.3080137 | 3.5214506 | 276.8294643 |
| 2019 | 41.5883646 | 198.2679428 | 60.0442357 | 216.1288941 | 41.7520830 | 257.8809771 | 6.4839938 | 264.3649709 |
| 2020 | 0.0000000 | 168.8383776 | 47.7609827 | 216.5993603 | 45.3935453 | 261.992056 | 8.0641619 | 270.0507075 |
| 2021 | 0.0000000 | 171.1598896 | 51.6713873 | 222.8312769 | 45.4239884 | 268.2552653 | 8.0695568 | 276.3248221 |
| 2022 | 0.0000000 | 185.3150514 | 52.0546243 | 237.3696756 | 45.7607900 | 283.1304656 | 8.1293834 | 291.2598490 |
| 2023 | 0.0000000 | 179.0718903 | 52.1838150 | 231.2557053 | 45.8743738 | 277.1300791 | 8.1496146 | 285.2796937 |
| 2024 | 0.0000000 | 176.1157314 | 52.1803468 | 228.2960782 | 45.8713873 | 274.1674655 | 8.1490366 | 282.3165021 |
| 2025 | 0.0000000 | 180.7451143 | 52.1921002 | 232.9372144 | 45.8816956 | 278.8189100 | 8.1508671 | 286.9697771 |
| 2026 | 0.0000000 | 173.1768217 | 52.1804432 | 225.3572648 | 45.8714836 | 271.2287484 | 8.1490366 | 279.3777850 |
| 2027 | 0.0000000 | 180.0235848 | 52.1948940 | 232.2184788 | 45.8842004 | 278.1026792 | 8.1513488 | 286.2540280 |
| 2028 | 0.0000000 | 175.6331545 | 52.1803468 | 227.8135013 | 45.8713873 | 273.6848886 | 8.1490366 | 281.8339252 |
| 2029 | 0.0000000 | 175.0757534 | 52.2361272 | 227.3118806 | 45.9204239 | 273.2323045 | 8.1578035 | 281.3901080 |
| 2030 | 0.0000000 | 175.0940050 | 52.1695568 | 227.2635618 | 45.8618497 | 273.1254115 | 8.1473988 | 281.2728103 |
| 2031 | 0.0000000 | 190.4036353 | 52.2032755 | 242.6069109 | 45.8915222 | 288.4984331 | 8.1526012 | 296.6510343 |
| 2032 | 0.0000000 | 171.8040788 | 52.1102120 | 223.9142908 | 45.8097303 | 269.7240211 | 8.1381503 | 277.8621714 |
| 2033 | 0.0000000 | 188.6691688 | 52.2054913 | 240.8746601 | 45.8934489 | 286.7681090 | 8.1529865 | 294.9210955 |
| 2034 | 0.0000000 | 168.8458925 | 52.1887283 | 221.0346208 | 45.8787091 | 266.9133299 | 8.1503854 | 275.0637153 |
| 2035 | 0.0000000 | 219.9759138 | 52.1780347 | 272.1539485 | 45.8693642 | 318.0233127 | 8.1487476 | 326.1720603 |

^c Citrus Pump Station began operation during 2017. No planned water deliveries are scheduled for 2020–2035 at Reach EBX-R2C, so no costs or rates are shown for Greenspot Pump Station. All deliveries through Crafton and Cherry Valley Pump Stations (2019–2035) are assumed to flow through Citrus Pump Station.

TABLE B-17 Unit Variable OMP&R Component of Transportation Charge (in dollars per acre-foot)

Sheet 5 of 5

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | | | |
|---------------|---------------------------------|----------------------|--------------------|----------------------|--------------------|----------------------|---|----------------------|---|----------------------|
| | Reach 29A | | Reach 29G | | Reach 29J | | Reach 31A | | Reach 33A | |
| | Oso Pumping Plant | | Warne Powerplant | | Castaic Powerplant | | Las Perillas and Badger Hill Pumping Plants | | Devil's Den, Bluestone, and Polonio Pass Pumping Plants | |
| | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate | Unit Rate | Cumulative Unit Rate |
| 1961 | 0 | [37] | 0 | [38] | 0 | [39] | 0 | [40] | 0 | [41] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 1.5014866 | 4.1182219 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 1.2624066 | 3.0719381 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 1.6309699 | 3.3588477 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 1.4985537 | 2.7919286 | 0 | 0 |
| 1972 | 1.1017349 | 13.3965941 | 0 | 0 | -2.9350830 | 10.4615111 | 1.9517720 | 3.4211474 | 0 | 0 |
| 1973 | 0.7905574 | 13.5030687 | 0 | 0 | -6.8099448 | 6.6931239 | 1.5374531 | 3.0757814 | 0 | 0 |
| 1974 | 0.7530214 | 12.6772442 | 0 | 0 | -7.4013274 | 5.2759168 | 1.5168982 | 2.9878282 | 0 | 0 |
| 1975 | 0.8405850 | 12.9068644 | 0 | 0 | -6.5604921 | 6.3463723 | 1.1130304 | 2.6699305 | 0 | 0 |
| 1976 | 0.7771828 | 14.4483197 | 0 | 0 | -6.7213324 | 7.7269873 | 1.5685447 | 3.2790543 | 0 | 0 |
| 1977 | 0.6152458 | 17.9458194 | 0 | 0 | -30.4985994 | -12.5527800 | 1.7573375 | 4.1392043 | 0 | 0 |
| 1978 | 0.5222831 | 13.4372037 | 0 | 0 | -9.0130187 | 4.4241850 | 1.9429506 | 4.0089431 | 0 | 0 |
| 1979 | 0.7045701 | 17.9908273 | 0 | 0 | -19.0478097 | -1.0569824 | 1.5600341 | 4.3608941 | 0 | 0 |
| 1980 | 1.4269064 | 20.6255585 | 0 | 0 | -20.5438586 | 0.0816999 | 1.5124754 | 3.6770034 | 0 | 0 |
| 1981 | 1.5684309 | 20.2186605 | 0 | 0 | -10.0059379 | 10.2127225 | 1.5414199 | 4.7045073 | 0 | 0 |
| 1982 | 1.4942585 | 19.7739190 | -2.1714430 | 17.6024760 | -9.5987314 | 8.0037446 | 1.7581649 | 4.3530008 | 0 | 0 |
| 1983 | 1.2818887 | 11.4081712 | -8.9130752 | 2.4950960 | -39.8193120 | -37.3242160 | 0.1782765 | 1.3888171 | 0 | 0 |
| 1984 | 1.7796296 | 16.6546302 | -15.0246012 | 1.6300290 | -17.3126964 | -15.6826674 | 0.8546712 | 2.6822403 | 0 | 0 |
| 1985 | 2.1683838 | 23.0053556 | -14.7115359 | 8.2938197 | -38.9450629 | -30.6512432 | 1.2014351 | 3.6785929 | 0 | 0 |
| 1986 | 3.2288411 | 39.6231134 | -14.1893653 | 25.4337481 | -28.1596224 | -2.7258742 | 2.2635886 | 6.9752505 | 0 | 0 |
| 1987 | 3.1272967 | 35.0197908 | -14.8696165 | 20.1501743 | -27.0536484 | -6.9034741 | 1.9135072 | 5.9486162 | 0 | 0 |
| 1988 | 2.9878581 | 32.9904032 | -14.7032843 | 18.2871189 | -25.6857024 | -7.3985835 | 1.7733386 | 5.6554272 | 0 | 0 |
| 1989 | 3.5262089 | 42.9746819 | -14.4231503 | 28.5515316 | -25.3986130 | 3.1529186 | 2.4159040 | 7.4317239 | 0 | 0 |
| 1990 | 3.6810660 | 56.4890182 | -14.1850383 | 42.3039798 | -26.0776142 | 16.2263657 | 3.7962150 | 9.8240367 | 0 | 0 |
| 1991 | 2.1853025 | 37.6098245 | -14.7117804 | 22.8979541 | -25.0234633 | -2.1255092 | 2.4131016 | 7.1520492 | 0 | 0 |
| 1992 | 1.9048343 | 23.9194204 | -14.6199430 | 9.2994740 | -25.1951357 | -15.8956583 | 1.2766372 | 4.5092789 | 0 | 0 |
| 1993 | 0.1569728 | -4.0768404 | -10.3386607 | -14.4155011 | -21.1218973 | -35.5373984 | -1.1726172 | -0.7762411 | 0 | 0 |
| 1994 | 3.0638504 | 40.6646149 | -14.7696788 | 25.8949361 | -26.7437304 | -0.8487943 | 2.3645104 | 7.0748798 | 0 | 0 |
| 1995 | 1.5724835 | 21.1129984 | -12.2705974 | 8.8424010 | -25.6907993 | -16.8483983 | 2.5750402 | 5.4022971 | 0 | 0 |
| 1996 | 3.1318961 | 42.5378346 | -14.8515762 | 27.6862584 | -29.5639188 | -1.8776604 | 2.5837041 | 7.6010922 | 0 | 0 |
| 1997 | 2.7928728 | 41.5836062 | -14.9272063 | 26.6563999 | -27.1541858 | -0.4977859 | 2.7029648 | 9.6426653 | 24.4572499 | 31.3999152 |
| 1998 | -0.3226129 | -6.1639346 | -8.6695834 | -14.8335180 | -22.3034941 | -37.0638671 | -0.5072304 | -0.6085333 | -4.1828906 | -4.7914239 |
| 1999 | 1.9037719 | 25.7605103 | -14.9340263 | 10.8264840 | -27.0443818 | -16.2178978 | 1.3710724 | 4.6490034 | 9.8811650 | 14.5301684 |
| 2000 | 1.8064079 | 28.0213680 | -14.1657261 | 13.8556418 | -26.9670096 | -13.1113678 | 1.9062744 | 5.1251586 | 14.1572786 | 19.2824372 |
| 2001 | 13.3506231 | 189.4881943 | -16.7349304 | 172.7532639 | -29.2914159 | 143.4618480 | 12.1791731 | 30.9702427 | 92.1279543 | 123.0981970 |
| 2002 | 4.8843487 | 77.9797747 | -13.2004543 | 64.7793204 | -23.7780808 | 41.0012396 | 5.4523577 | 14.1545162 | 42.2356428 | 56.3901590 |
| 2003 | 6.1234197 | 94.4006477 | -13.9757172 | 80.4249305 | -23.8496317 | 56.5752988 | 6.2991083 | 16.1432859 | 48.5398663 | 64.6831522 |
| 2004 | 6.4691088 | 99.3482735 | -14.1574758 | 85.1907977 | -25.2967499 | 59.8940478 | 6.4578566 | 17.0611245 | 52.5234071 | 69.5845316 |
| 2005 | 7.3193726 | 113.0191064 | -14.2938796 | 98.7252268 | -24.7472457 | 73.9779811 | 8.2000327 | 20.1469699 | 62.1217478 | 82.2687176 |
| 2006 | 5.2231416 | 87.9747467 | -14.0865037 | 73.8882610 | -23.8861273 | 50.0021337 | 7.3722622 | 17.3014204 | 51.9271194 | 69.2285398 |
| 2007 | 8.1423236 | 127.5662520 | -12.5169061 | 115.0493459 | -25.0603889 | 89.9889571 | 9.9286248 | 23.6693943 | 73.4052678 | 97.0746621 |
| 2008 | 8.5530466 | 135.6056877 | -13.8809446 | 121.7247431 | -29.0198140 | 92.7049290 | 10.5298384 | 27.6832391 | 79.6348098 | 107.3180489 |
| 2009 | 6.8975395 | 105.3713082 | -10.4812488 | 94.8900594 | -24.7607898 | 70.1292696 | 6.7814512 | 15.7903885 | 62.8933626 | 78.6837511 |
| 2010 | 7.9651455 | 118.6115212 | -13.8211960 | 104.7903252 | -26.2504816 | 78.5398436 | 8.4638713 | 22.0029116 | 68.9372381 | 90.9401496 |
| 2011 | 8.4278727 | 131.1067387 | -14.1584994 | 116.9482393 | -28.7386599 | 88.2095794 | 9.7697761 | 25.1505788 | 85.4589931 | 110.6095719 |
| 2012 | 8.4532117 | 131.2412166 | -13.8982773 | 117.3429391 | -25.6245942 | 91.7183449 | 8.9149732 | 23.7166379 | 84.0074981 | 107.7241360 |
| 2013 | 10.3854388 | 161.6012172 | -14.3636831 | 147.2375351 | -25.5768325 | 121.6607016 | 12.3158143 | 31.0721677 | 94.7874510 | 125.8596188 |
| 2014 | 15.0805153 | 233.7950687 | -14.0214517 | 219.7826170 | -26.4213846 | 193.3612324 | 16.6489426 | 44.7609091 | 106.2577468 | 151.0186560 |
| 2015 | 15.4926005 | 238.3884798 | -14.2676550 | 224.1208248 | -25.0847717 | 199.0360531 | 16.8577852 | 45.1466065 | 127.6969757 | 172.8435822 |
| 2016 | 12.9164536 | 197.2544662 | -14.0588274 | 183.1956389 | -24.9945598 | 158.2010791 | 12.8243785 | 34.6564839 | 96.8979676 | 131.5544514 |
| 2017 | 12.4084444 | 188.3773290 | -13.8955888 | 174.4817402 | -25.7687520 | 148.7129882 | 12.1260981 | 32.0479740 | 78.4069507 | 110.4549247 |
| 2018 | 13.5040106 | 204.3727284 | -15.3094136 | 189.0633688 | -26.6439108 | 162.4194580 | 16.1940513 | 38.8030986 | 119.4487123 | 158.2518109 |
| 2019 | 14.2598971 | 190.7503674 | -16.0698843 | 174.6804830 | -29.3451452 | 145.3353378 | 11.0263592 | 30.7483051 | 145.8222804 | 176.5705855 |
| 2020 | 11.2659563 | 208.8438314 | -11.7325083 | 197.1113230 | -20.0803315 | 177.0309915 | 12.2000439 | 34.6920024 | 98.4022616 | 133.0942640 |
| 2021 | 11.3905289 | 211.2885067 | -11.8439652 | 199.4445416 | -20.2866905 | 179.1578511 | 12.2085241 | 35.1986827 | 98.4782782 | 133.6769610 |
| 2022 | 14.7143062 | 225.0492624 | -15.2905578 | 209.7587046 | -24.7415950 | 185.0171097 | 8.1932789 | 34.3529097 | 128.2841568 | 162.6370665 |
| 2023 | 14.2391051 | 219.0187007 | -14.7933441 | 204.2253566 | -23.7473229 | 180.4780337 | 8.2166879 | 29.3193959 | 128.6020188 | 157.9214146 |
| 2024 | 14.4856892 | 216.2279713 | -15.0871167 | 201.1408546 | -24.1705335 | 176.9703212 | 8.2161451 | 29.8829862 | 128.5934913 | 158.4764775 |
| 2025 | 14.2574863 | 220.2448511 | -14.8435599 | 205.4012912 | -23.7748616 | 181.6264296 | 8.2179926 | 31.2729490 | 128.6224548 | 159.8954038 |
| 2026 | 13.9551223 | 212.8802786 | -14.5306550 | 198.3496236 | -23.2637861 | 175.0858375 | 8.2161660 | 28.5815097 | 128.5937648 | 157.1752745 |
| 2027 | 14.5314613 | 219.9828971 | -15.1292540 | 204.8536491 | -24.2418728 | 180.6117703 | 8.2184414 | 30.0798880 | 128.6294906 | 158.7093786 |
| 2028 | 14.0266942 | 215.4079065 | -14.5740949 | 200.8338116 | -23.3860196 | 177.4477921 | 8.2161556 | 29.6535244 | 128.5936653 | 158.2471897 |
| 2029 | 14.4530446 | 214.8828225 | -15.0014906 | 199.8813319 | -24.0882865 | 175.7930455 | 8.2249337 | 25.9845752 | 128.7310494 | 154.7156246 |
| 2030 | 13.9284237 | 214.5860187 | -14.5057799 | 200.0802388 | -23.2231755 | 176.8570634 | 8.2144438 | 29.9459783 | 128.5668896 | 158.5128679 |
| 2031 | 16.1230245 | 231.8748695 | -16.7919165 | 215.0829530 | -26.9669713 | 188.1159817 | 8.2197566 | 30.1122225 | 128.6499764 | 158.7621989 |
| 2032 | 13.2674375 | 210.1671475 | -13.8317047 | 196.3354428 | -22.1215150 | 174.2139278 | 8.2051124 | 32.9748866 | 128.4207543 | 161.3956409 |
| 2033 | 15.8145491 | 230.6751981 | -16.4683522 | 214.2068459 | -26.4356829 | 187.7711630 | 8.2201115 | 30.1158752 | 128.6554956 | |

Tables B-18 through B-31

Note: Where applicable, the projected data values shown in this appendix are shaded and the bill year data are in **bold** type.

TABLE B-18 Variable OMP&R Component of Transportation Charge for Each Contractor^a (in dollars)

Sheet 1 of 4

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA | | | | CENTRAL COASTAL AREA | | |
|---------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|----------------------|--------------------|--------------------|
| | Napa | Solano | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 2,051 | 34,919 | 0 | 36,970 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 7,900 | 49,811 | 0 | 57,711 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 5,931 | 68,203 | 0 | 74,134 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 10,918 | 68,765 | 62,926 | 142,609 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 19,330 | 52,135 | 121,141 | 192,606 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 19,958 | 53,785 | 163,255 | 236,998 | 0 | 0 | 0 |
| 1968 | 6,989 | 0 | 6,989 | 29,899 | 120,985 | 341,768 | 492,652 | 0 | 0 | 0 |
| 1969 | 8,551 | 0 | 8,551 | 31,859 | 3,904 | 298,968 | 334,731 | 0 | 0 | 0 |
| 1970 | 13,598 | 0 | 13,598 | 49,687 | 0 | 431,443 | 481,130 | 0 | 0 | 0 |
| 1971 | 10,609 | 0 | 10,609 | 23,842 | 28,328 | 416,329 | 468,499 | 0 | 0 | 0 |
| 1972 | 14,434 | 0 | 14,434 | 54,838 | 144,669 | 524,208 | 723,715 | 0 | 0 | 0 |
| 1973 | 14,449 | 0 | 14,449 | 18,398 | 15,590 | 547,807 | 581,795 | 0 | 0 | 0 |
| 1974 | 17,473 | 0 | 17,473 | 9,499 | 29 | 636,186 | 645,714 | 0 | 0 | 0 |
| 1975 | 14,779 | 0 | 14,779 | 22,318 | 4,765 | 425,284 | 452,367 | 0 | 0 | 0 |
| 1976 | 20,856 | 0 | 20,856 | 97,874 | 121,693 | 502,769 | 722,336 | 0 | 0 | 0 |
| 1977 | 22,635 | 0 | 22,635 | 82,578 | 123,044 | 497,792 | 703,414 | 0 | 0 | 0 |
| 1978 | 21,692 | 0 | 21,692 | 74,911 | 39,986 | 652,860 | 767,757 | 0 | 0 | 0 |
| 1979 | 16,237 | 0 | 16,237 | 137,101 | 77,145 | 652,629 | 866,875 | 0 | 0 | 0 |
| 1980 | 19,945 | 0 | 19,945 | 98,743 | 64,891 | 517,531 | 681,165 | 0 | 0 | 0 |
| 1981 | 23,842 | 0 | 23,842 | 126,437 | 141,456 | 567,968 | 835,861 | 0 | 0 | 0 |
| 1982 | 12,157 | 0 | 12,157 | 97,117 | 46,742 | 651,246 | 795,105 | 0 | 0 | 0 |
| 1983 | 2,342 | 0 | 2,342 | 8,171 | 5,412 | 148,743 | 162,326 | 0 | 0 | 0 |
| 1984 | 4,822 | 0 | 4,822 | 26,707 | 13,141 | 349,314 | 389,162 | 0 | 0 | 0 |
| 1985 | 10,188 | 0 | 10,188 | 79,863 | 102,790 | 466,291 | 648,944 | 0 | 0 | 0 |
| 1986 | 15,501 | 0 | 15,501 | 112,370 | 131,118 | 932,090 | 1,175,578 | 0 | 0 | 0 |
| 1987 | 27,223 | 0 | 27,223 | 216,211 | 234,290 | 812,631 | 1,263,132 | 0 | 0 | 0 |
| 1988 | 31,265 | 11,533 | 42,798 | 229,578 | 297,129 | 779,537 | 1,306,244 | 0 | 0 | 0 |
| 1989 | 37,874 | 66,850 | 104,724 | 306,533 | 304,275 | 1,051,562 | 1,662,370 | 0 | 0 | 0 |
| 1990 | 54,736 | 105,421 | 160,157 | 524,114 | 502,545 | 1,456,008 | 2,482,667 | 0 | 0 | 0 |
| 1991 | 8,159 | 18,824 | 26,983 | 105,736 | 142,105 | 316,839 | 564,680 | 0 | (2,636) | (2,636) |
| 1992 | 12,515 | 23,808 | 36,323 | 93,772 | 122,436 | 273,849 | 490,057 | 0 | 0 | 0 |
| 1993 | (7,223) | (17,293) | (24,516) | (36,162) | (12,912) | (78,024) | (127,098) | 0 | 0 | 0 |
| 1994 | 39,106 | 77,257 | 116,363 | 231,800 | 257,533 | 642,006 | 1,131,339 | 0 | 0 | 0 |
| 1995 | 15,701 | 36,724 | 52,425 | 160,663 | 93,610 | 151,287 | 405,560 | 0 | 0 | 0 |
| 1996 | 31,526 | 96,570 | 128,096 | 214,883 | 186,694 | 735,431 | 1,137,008 | 502 | 0 | 502 |
| 1997 | 29,683 | 116,555 | 146,238 | 351,185 | 219,799 | 912,861 | 1,483,845 | 34,932 | 233,584 | 268,516 |
| 1998 | (6,622) | (19,825) | (26,447) | (8,777) | (18,989) | (72,459) | (100,225) | (17,211) | (89,207) | (106,418) |
| 1999 | 16,237 | 54,380 | 70,617 | 258,207 | 193,717 | 444,579 | 896,503 | 54,386 | 292,594 | 346,980 |
| 2000 | 21,853 | 93,587 | 115,441 | 375,486 | 237,544 | 749,863 | 1,362,894 | 76,397 | 438,502 | 514,899 |
| 2001 | 287,659 | 528,307 | 815,967 | 1,675,681 | 989,109 | 2,451,313 | 5,116,103 | 527,230 | 2,332,218 | 2,859,448 |
| 2002 | 90,290 | 266,205 | 356,494 | 1,067,734 | 640,899 | 1,453,943 | 3,162,576 | 245,579 | 1,558,398 | 1,803,978 |
| 2003 | 131,103 | 266,087 | 397,190 | 1,076,990 | 647,811 | 2,301,219 | 4,026,020 | 288,034 | 1,744,375 | 2,032,409 |
| 2004 | 141,816 | 356,192 | 498,008 | 1,325,729 | 624,583 | 1,614,003 | 3,564,314 | 289,820 | 2,067,009 | 2,356,828 |
| 2005 | 189,098 | 393,118 | 582,216 | 1,483,817 | 849,101 | 2,494,389 | 4,827,307 | 349,724 | 1,920,481 | 2,270,205 |
| 2006 | 182,260 | 317,835 | 500,095 | 1,300,582 | 736,662 | 2,176,157 | 4,213,401 | 291,383 | 1,611,294 | 1,902,677 |
| 2007 | 332,072 | 604,828 | 936,900 | 1,610,846 | 899,767 | 2,704,432 | 5,215,045 | 366,554 | 2,692,851 | 3,059,405 |
| 2008 | 395,190 | 527,573 | 922,763 | 1,566,799 | 767,365 | 1,940,416 | 4,274,579 | 365,096 | 1,973,901 | 2,338,997 |
| 2009 | 213,076 | 272,083 | 485,159 | 843,210 | 501,039 | 1,551,897 | 2,896,146 | 299,065 | 1,215,709 | 1,514,774 |
| 2010 | 282,372 | 305,674 | 588,046 | 1,351,310 | 627,652 | 1,947,157 | 3,926,119 | 341,662 | 1,616,461 | 1,958,123 |
| 2011 | 306,109 | 307,816 | 613,926 | 1,748,638 | 948,748 | 2,961,421 | 5,658,807 | 422,418 | 2,511,286 | 2,933,704 |
| 2012 | 251,515 | 316,883 | 568,397 | 1,723,963 | 654,225 | 2,347,855 | 4,726,043 | 424,864 | 2,097,820 | 2,522,684 |
| 2013 | 436,724 | 530,850 | 967,574 | 2,154,654 | 1,100,060 | 3,142,687 | 6,397,401 | 463,289 | 2,267,739 | 2,731,028 |
| 2014 | 601,595 | 397,111 | 998,706 | 1,549,511 | 1,206,215 | 2,175,750 | 4,931,477 | 481,528 | 2,512,391 | 2,993,918 |
| 2015 | 485,232 | 503,875 | 989,107 | 1,466,259 | 932,594 | 3,115,852 | 5,514,705 | 593,685 | 2,013,788 | 2,607,474 |
| 2016 | 333,812 | 359,325 | 693,137 | 2,388,733 | 801,150 | 4,103,918 | 7,293,802 | 552,397 | 3,919,893 | 4,471,380 |
| 2017 | 253,341 | 415,051 | 668,391 | 2,102,499 | 938,170 | 4,131,618 | 7,172,287 | 314,244 | 4,304,424 | 4,618,669 |
| 2018 | 439,091 | 682,830 | 1,121,921 | 2,240,304 | 916,385 | 4,838,946 | 7,995,636 | 384,077 | 4,364,044 | 4,748,121 |
| 2019 | 723,530 | 487,276 | 1,210,806 | 2,371,515 | 658,528 | 3,355,847 | 6,385,890 | 589,216 | 3,652,251 | 4,241,467 |
| 2020 | 660,519 | 308,158 | 968,678 | 2,731,545 | 1,297,584 | 3,623,277 | 7,652,405 | 1,689,765 | 3,632,409 | 5,322,173 |
| 2021 | 681,440 | 317,920 | 999,360 | 2,761,798 | 1,366,736 | 3,661,682 | 7,790,216 | 1,699,034 | 3,648,312 | 5,347,346 |
| 2022 | 568,009 | 341,897 | 909,906 | 2,753,967 | 1,380,406 | 3,628,925 | 7,763,298 | 2,083,381 | 4,438,691 | 6,522,072 |
| 2023 | 569,418 | 342,745 | 912,163 | 2,514,179 | 1,262,745 | 3,332,178 | 7,109,101 | 2,030,554 | 4,309,991 | 6,340,545 |
| 2024 | 569,380 | 342,723 | 912,103 | 2,545,355 | 1,278,864 | 3,371,406 | 7,195,624 | 2,037,691 | 4,325,140 | 6,362,831 |
| 2025 | 569,509 | 342,800 | 912,309 | 2,609,703 | 1,312,476 | 3,450,824 | 7,373,003 | 2,055,935 | 4,363,865 | 6,419,800 |
| 2026 | 569,382 | 342,723 | 912,105 | 2,484,104 | 1,246,900 | 3,295,673 | 7,026,678 | 2,020,960 | 4,289,628 | 6,310,587 |
| 2027 | 569,540 | 342,819 | 912,358 | 2,551,338 | 1,282,089 | 3,378,337 | 7,211,764 | 2,040,685 | 4,331,496 | 6,372,182 |
| 2028 | 569,381 | 342,723 | 912,104 | 2,534,404 | 1,273,154 | 3,357,844 | 7,165,403 | 2,034,742 | 4,318,882 | 6,353,625 |
| 2029 | 569,990 | 343,089 | 913,080 | 2,355,287 | 1,179,877 | 3,135,489 | 6,670,653 | 1,989,334 | 4,222,499 | 6,211,832 |
| 2030 | 569,263 | 342,652 | 911,915 | 2,549,421 | 1,280,953 | 3,376,584 | 7,206,958 | 2,038,158 | 4,326,133 | 6,364,292 |
| 2031 | 569,631 | 342,873 | 912,504 | 2,541,997 | 1,277,564 | 3,365,199 | 7,184,761 | 2,041,364 | 4,332,938 | 6,374,302 |
| 2032 | 568,616 | 342,262 | 910,878 | 2,755,239 | 1,386,323 | 3,640,298 | 7,781,860 | 2,075,225 | 4,404,810 | 6,480,035 |
| 2033 | 569,655 | 342,888 | 912,543 | 2,504,992 | 1,259,458 | 3,313,984 | 7,078,434 | 2,041,482 | 4,333,188 | 6,374,671 |
| 2034 | 569,472 | 342,778 | 912,250 | 2,477,051 | 1,243,040 | 3,287,766 | 7,007,858 | 2,017,800 | 4,282,922 | 6,300,722 |
| 2035 | 569,356 | 342,708 | 912,064 | 2,940,385 | 1,485,844 | 3,856,057 | 8,282,285 | 2,152,566 | 4,568,972 | 6,721,538 |
| TOTAL | 15,971,581 | 13,927,070 | 29,898,651 | 76,931,070 | 40,527,156 | 123,968,864 | 241,427,091 | 39,787,549 | 115,378,136 | 155,165,685 |

^aB-18 includes Extra Peaking Charges for additional power shown in Table 9.

TABLE B-18 Variable OMP&R Component of Transportation Charge for Each Contractor^a (in dollars)

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | | |
|---------------|-------------------------|------------------|--------------------------------------|--------------------------|--------------------|------------------|------------------|-------------------|--------------------|
| | Dudley Ridge | Empire | Future Contractor San Joaquin Valley | Kern | | Kings | Oak Flat | Tulare | Total |
| | | | | Municipal and Industrial | Agricultural | | | | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 68,977 | 5,176 | 0 | 0 | 440,922 | 2,355 | 4,760 | 65,680 | 587,870 |
| 1969 | 56,774 | 101 | 0 | 0 | 321,387 | 181 | 3,338 | 17,956 | 399,737 |
| 1970 | 69,818 | 6,811 | 0 | 0 | 470,867 | 0 | 5,595 | 16,550 | 569,641 |
| 1971 | 53,097 | 7,747 | 0 | 0 | 769,054 | 4,785 | 6,353 | 158,419 | 999,455 |
| 1972 | 62,365 | 8,515 | 0 | 0 | 1,151,788 | 2,057 | 7,375 | 379,686 | 1,611,786 |
| 1973 | 33,931 | 4,615 | 0 | 0 | 770,121 | 2,307 | 3,017 | 77,630 | 891,621 |
| 1974 | 49,114 | 4,413 | 0 | 46,752 | 677,660 | 2,206 | 3,114 | 106,332 | 889,591 |
| 1975 | 63,140 | 4,671 | 0 | 34,580 | 848,249 | 2,491 | 3,920 | 134,295 | 1,091,346 |
| 1976 | 70,851 | 5,132 | 0 | 94,653 | 966,820 | 2,737 | 4,910 | 100,597 | 1,245,701 |
| 1977 | 26,565 | 1,758 | 0 | 84,875 | 498,624 | 3,644 | 2,602 | 43,067 | 661,135 |
| 1978 | 108,944 | 938 | 0 | 190,675 | 1,616,975 | 4,319 | 6,294 | 24,901 | 1,953,046 |
| 1979 | 107,956 | 4,871 | 0 | 194,048 | 2,371,175 | 5,602 | 13,172 | 434,472 | 3,131,297 |
| 1980 | 88,746 | 1,935 | 0 | 121,603 | 1,731,588 | 4,762 | 7,766 | 163,301 | 2,119,701 |
| 1981 | 129,687 | 18,533 | 0 | 263,077 | 2,398,339 | 7,275 | 8,904 | 263,922 | 3,089,737 |
| 1982 | 108,561 | 937 | 0 | 145,246 | 2,375,404 | 4,541 | 6,763 | 48,137 | 2,689,589 |
| 1983 | 61,443 | 0 | 0 | 13,954 | 929,183 | 5,662 | 3,232 | 1,218 | 1,014,692 |
| 1984 | 82,423 | 0 | 0 | 216,437 | 1,996,259 | 5,946 | 7,475 | 10,496 | 2,319,036 |
| 1985 | 114,571 | 12,938 | 0 | 242,645 | 2,567,184 | 8,422 | 8,815 | 271,970 | 3,226,545 |
| 1986 | 236,756 | 5,513 | 0 | 377,798 | 4,876,960 | 17,433 | 16,927 | 376,088 | 5,907,475 |
| 1987 | 187,090 | 10,273 | 0 | 504,168 | 4,230,949 | 16,140 | 15,529 | 375,604 | 5,339,753 |
| 1988 | 188,170 | 14,894 | 0 | 524,965 | 4,250,194 | 15,528 | 11,928 | 374,528 | 5,380,207 |
| 1989 | 285,261 | 15,450 | 0 | 681,238 | 6,158,648 | 20,063 | 21,693 | 649,604 | 7,831,957 |
| 1990 | 218,786 | 7,710 | 0 | 845,877 | 4,778,185 | 12,056 | 12,072 | 344,008 | 6,218,694 |
| 1991 | 4,393 | 1,047 | 0 | 185,013 | 47,869 | 0 | 521 | 10,331 | 249,174 |
| 1992 | 76,840 | 4,426 | 0 | 227,332 | 1,699,824 | 6,059 | 5,222 | 151,055 | 2,170,758 |
| 1993 | 20,064 | 4,843 | 0 | 78,585 | 340,588 | 2,090 | 1,467 | 123,913 | 571,550 |
| 1994 | 135,626 | 7,854 | 0 | 471,316 | 3,417,815 | 9,967 | 10,102 | 293,748 | 4,346,428 |
| 1995 | 181,772 | 4,611 | 0 | 409,656 | 3,437,735 | 11,619 | 10,492 | 288,010 | 4,343,895 |
| 1996 | 286,064 | 9,577 | 0 | 715,404 | 6,328,965 | 21,039 | 16,403 | 1,196,303 | 8,573,755 |
| 1997 | 308,515 | 0 | 0 | 650,416 | 5,627,735 | 0 | 15,559 | 94,838 | 6,697,063 |
| 1998 | 16,993 | (54) | 0 | (16,341) | 91,651 | (2) | 1,171 | (2,095) | 91,324 |
| 1999 | 195,683 | 10,411 | 0 | 473,993 | 4,043,627 | 13,112 | 11,761 | 956,653 | 5,705,239 |
| 2000 | 194,868 | 5,791 | 0 | 150,870 | 4,259,519 | 11,588 | 10,347 | 638,347 | 5,271,330 |
| 2001 | 787,383 | 25,556 | 0 | 156,815 | 11,851,444 | 29,314 | 45,773 | 1,119,234 | 14,015,019 |
| 2002 | 425,666 | 12,227 | 0 | 183,569 | 8,013,811 | 24,836 | 29,691 | 839,776 | 9,529,575 |
| 2003 | 453,639 | 14,136 | 0 | 493,523 | 9,967,581 | 36,345 | 28,691 | 1,041,918 | 12,035,833 |
| 2004 | 520,408 | 37,769 | 0 | 1,406,548 | 8,941,409 | 95,991 | 33,665 | 861,595 | 11,897,384 |
| 2005 | 977,603 | 45,805 | 0 | 836,724 | 17,643,647 | 236,621 | 34,032 | 1,672,595 | 21,447,026 |
| 2006 | 715,694 | 32,588 | 0 | 990,621 | 13,741,832 | 94,625 | 28,908 | 1,074,404 | 16,678,671 |
| 2007 | 620,190 | 28,636 | 0 | 772,040 | 12,112,877 | 79,441 | 32,913 | 1,196,587 | 14,842,684 |
| 2008 | 380,360 | 16,244 | 0 | 757,958 | 7,714,656 | 65,800 | 24,535 | 581,569 | 9,541,121 |
| 2009 | 191,157 | 9,315 | 0 | 65,787 | 5,125,677 | 30,549 | 11,783 | 331,564 | 5,765,832 |
| 2010 | 403,759 | 44,124 | 0 | 144,035 | 9,138,438 | 65,685 | 27,416 | 785,371 | 10,608,829 |
| 2011 | 933,415 | 29,454 | 0 | 710,131 | 19,628,670 | 103,162 | 29,363 | 851,153 | 22,285,349 |
| 2012 | 271,078 | 33,185 | 0 | 533,800 | 11,576,632 | 109,606 | 32,751 | 1,321,153 | 13,878,205 |
| 2013 | 507,284 | 29,391 | 0 | 635,507 | 12,229,363 | 87,123 | 36,928 | 827,798 | 14,353,395 |
| 2014 | 525,372 | 14,506 | 0 | 219 | 7,112,151 | 35,269 | 29,922 | 250,995 | 7,968,434 |
| 2015 | 441,243 | 17,652 | 0 | 494,186 | 9,244,702 | 34,767 | 21,971 | 490,395 | 10,744,916 |
| 2016 | 456,466 | 39,778 | 0 | 281,116 | 13,656,632 | 79,906 | 28,336 | 925,397 | 15,467,631 |
| 2017 | 1,083,610 | 33,827 | 0 | 831,871 | 25,691,692 | 153,044 | 39,468 | 1,205,172 | 29,038,684 |
| 2018 | 769,747 | 35,971 | 0 | 109,305 | 14,304,090 | 83,947 | 36,665 | 891,753 | 16,231,479 |
| 2019 | 683,188 | 48,240 | 0 | 1,441,004 | 18,435,071 | 146,448 | 22,897 | 1,812,269 | 22,589,117 |
| 2020 | 642,550 | 40,486 | 0 | 2,160,177 | 14,920,397 | 127,805 | 53,412 | 1,180,445 | 19,125,272 |
| 2021 | 656,783 | 41,382 | 0 | 2,203,153 | 15,214,102 | 130,588 | 54,855 | 1,206,592 | 19,507,455 |
| 2022 | 747,328 | 47,087 | 0 | 2,459,457 | 16,764,168 | 147,549 | 64,550 | 1,372,936 | 21,603,076 |
| 2023 | 602,862 | 37,985 | 0 | 2,080,997 | 14,113,279 | 119,320 | 47,279 | 1,107,533 | 18,109,256 |
| 2024 | 618,978 | 39,000 | 0 | 2,113,353 | 14,359,061 | 122,470 | 49,524 | 1,137,141 | 18,439,528 |
| 2025 | 658,634 | 41,499 | 0 | 2,224,590 | 15,124,535 | 130,220 | 54,019 | 1,209,993 | 19,443,489 |
| 2026 | 581,797 | 36,658 | 0 | 2,012,196 | 13,657,378 | 115,203 | 45,207 | 1,068,834 | 17,517,274 |
| 2027 | 624,538 | 39,351 | 0 | 2,137,352 | 14,509,157 | 123,556 | 49,880 | 1,147,354 | 18,631,188 |
| 2028 | 612,423 | 38,587 | 0 | 2,095,884 | 14,237,205 | 121,188 | 48,751 | 1,125,097 | 18,279,136 |
| 2029 | 507,357 | 31,967 | 0 | 1,828,968 | 12,351,077 | 100,657 | 35,925 | 932,079 | 15,788,031 |
| 2030 | 620,826 | 39,117 | 0 | 2,115,073 | 14,377,033 | 122,830 | 49,849 | 1,140,536 | 18,465,265 |
| 2031 | 625,424 | 39,406 | 0 | 2,167,325 | 14,665,609 | 123,730 | 49,108 | 1,148,982 | 18,819,584 |
| 2032 | 707,623 | 44,586 | 0 | 2,323,288 | 15,872,531 | 139,791 | 60,860 | 1,299,992 | 20,448,671 |
| 2033 | 625,518 | 39,412 | 0 | 2,165,164 | 14,665,167 | 123,748 | 49,195 | 1,149,155 | 18,807,360 |
| 2034 | 574,157 | 36,176 | 0 | 1,978,907 | 13,449,704 | 113,710 | 44,734 | 1,054,798 | 17,252,186 |
| 2035 | 874,378 | 55,092 | 0 | 2,876,082 | 19,521,295 | 172,382 | 77,156 | 1,606,342 | 25,182,727 |
| TOTAL | 25,322,283 | 1,387,632 | 0 | 53,715,060 | 550,413,934 | 3,853,213 | 1,678,612 | 45,158,075 | 681,528,808 |

^a B-18 includes Extra Peaking Charges for additional power shown in Table 9.

TABLE B-18 Variable OMP&R Component of Transportation Charge for Each Contractor^a (in dollars)

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|--------------------|-------------------|--------------------|----------------|--------------------|-------------------|--------------------|-------------------|-------------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 780 | 0 | 12,785 | 0 | 4,496 | 1,515 | 0 | 32,107 | 0 | 0 |
| 1973 | 286 | 102,812 | 6,896 | 159,536 | 3,855 | 0 | 0 | 301,444 | 0 | 0 |
| 1974 | 15,558 | 100,955 | 9,890 | 157,742 | 4,932 | 221 | 0 | 177,173 | 5,961 | 0 |
| 1975 | 99,186 | 108,253 | 12,758 | 170,111 | 6,391 | 0 | 0 | 136,066 | 50,723 | 0 |
| 1976 | 385,090 | 135,276 | 17,835 | 213,594 | 8,164 | 0 | 0 | 139,354 | 65,476 | 0 |
| 1977 | 199,166 | 0 | 23,598 | 0 | 1,974 | 1,702 | 0 | 239,663 | 74,838 | 0 |
| 1978 | 581,729 | 174,116 | 20,875 | 264,178 | 2,731 | 0 | 0 | 37,043 | 67,462 | 0 |
| 1979 | 1,058,904 | 228,437 | 28,603 | 340,510 | 2,328 | 90,803 | 0 | 236 | 3,668 | 0 |
| 1980 | 1,390,117 | 256,759 | 29,229 | 401,038 | 3,667 | 94,362 | 0 | 0 | 16,504 | 0 |
| 1981 | 1,480,362 | 274,149 | 33,632 | 430,304 | 23,861 | 90,590 | 0 | 254,649 | 57,523 | 0 |
| 1982 | 923,973 | 292,674 | 27,190 | 461,216 | 0 | 230,608 | 0 | 126,461 | 189,895 | 0 |
| 1983 | 333,772 | 172,336 | 10,792 | 272,477 | 385 | 0 | 0 | (71,602) | (8,768) | 0 |
| 1984 | 485,847 | 273,597 | 19,572 | 433,785 | 15 | 0 | 0 | (66,353) | (91,433) | 0 |
| 1985 | 821,069 | 413,406 | 34,603 | 657,011 | 0 | 0 | 32,464 | (47,544) | (32,348) | 0 |
| 1986 | 1,109,047 | 728,808 | 60,274 | 1,160,650 | 5,548 | 0 | 105,375 | 69,170 | 101,843 | 0 |
| 1987 | 1,019,605 | 668,383 | 63,601 | 1,083,530 | 32,651 | 585 | 157,843 | 88,076 | 49,930 | 0 |
| 1988 | 1,019,793 | 688,891 | 66,914 | 1,134,141 | 11,991 | 300 | 50,654 | 92,465 | 38,688 | 0 |
| 1989 | 1,736,901 | 978,885 | 97,114 | 1,633,489 | 38,269 | 8,951 | 350,953 | 340,460 | 210,334 | 0 |
| 1990 | 2,442,558 | 1,402,619 | 110,934 | 2,313,410 | 90,472 | 0 | 446,408 | 599,573 | 530,099 | 0 |
| 1991 | 286,485 | 277,078 | 33,945 | 456,999 | 17,978 | 128,405 | 132,700 | 35,339 | 52,116 | 0 |
| 1992 | 587,340 | 240,119 | 11,952 | 396,022 | 4,871 | 241,338 | 78,306 | (22,718) | (53,500) | 0 |
| 1993 | (190,611) | (809,033) | (2,389) | (1,334,429) | (3,246) | (61,112) | (29,466) | (157,452) | (519,798) | 0 |
| 1994 | 1,841,902 | 189,616 | 34,480 | 312,714 | 41,201 | 731,185 | 315,446 | 122,829 | 204,783 | 0 |
| 1995 | 761,209 | (251,547) | 7,960 | (414,889) | 7,727 | 165,622 | 114,342 | (7,579) | (140,714) | 0 |
| 1996 | 1,883,530 | 508,274 | 18,313 | 838,330 | 16,510 | 289,044 | 385,745 | 49,537 | 133,848 | 0 |
| 1997 | 2,121,818 | 365,342 | 24,076 | 330,153 | 15,099 | 414,596 | 438,212 | 61,553 | 115,882 | 0 |
| 1998 | (577,005) | (3,979,131) | (2,991) | (3,279,862) | (4,405) | (46,209) | (84,367) | (87,188) | (432,227) | 0 |
| 1999 | 1,309,467 | (633,767) | 20,018 | (729,435) | 6,484 | 180,423 | 263,297 | (161,631) | (222,717) | 0 |
| 2000 | 1,743,925 | (425,149) | 24,166 | (584,980) | 0 | 283,085 | 189,047 | (184,824) | (152,086) | 0 |
| 2001 | 10,748,924 | 1,496,563 | 206,495 | 2,468,506 | 0 | 850,559 | 1,788,151 | 4,356,149 | 388,120 | 0 |
| 2002 | 3,940,517 | 737,683 | 162,410 | 1,216,924 | 0 | 332,521 | 1,250,873 | 3,146,998 | 1,094,131 | 0 |
| 2003 | 5,100,245 | 907,298 | 145,685 | 1,496,291 | 0 | 1,429,259 | 981,068 | 1,640,399 | 1,377,877 | 7,287 |
| 2004 | 5,218,767 | 1,018,471 | 192,767 | 1,395,500 | 0 | 1,344,202 | 1,061,772 | 3,812,245 | 825,907 | 98,114 |
| 2005 | 5,994,948 | 3,452,612 | 89,977 | 3,986,107 | 0 | 1,580,568 | 1,173,519 | 2,654,327 | 1,135,524 | 84,202 |
| 2006 | 6,399,604 | 6,996,568 | 56,136 | 2,888,757 | 0 | 3,152,053 | 994,524 | 2,151,160 | 940,810 | 420,558 |
| 2007 | 9,366,927 | 7,356,418 | 230,822 | 3,037,280 | 0 | 6,174,455 | 2,222,480 | 6,072,128 | 404,247 | 598,466 |
| 2008 | 5,836,300 | 4,831,913 | 114,589 | 2,614,945 | 3,041 | 3,538,323 | 1,734,117 | 4,050,577 | 752,685 | 719,026 |
| 2009 | 4,114,908 | 3,413,562 | 96,614 | 1,365,336 | 3,869 | 3,228,735 | 1,413,080 | 3,432,844 | 861,208 | 749,973 |
| 2010 | 6,171,291 | 7,525,157 | 42,099 | 2,782,975 | 0 | 4,662,868 | 1,157,361 | 4,811,975 | 1,711,749 | 1,095,113 |
| 2011 | 11,047,442 | 9,132,221 | 62,167 | 3,679,937 | 0 | 659,640 | 1,268,372 | 3,583,578 | 2,386,360 | 1,549,093 |
| 2012 | 10,123,675 | 11,588,969 | 80,921 | 4,467,708 | 0 | 1,559,129 | 2,005,724 | 9,826,213 | 2,185,067 | 1,626,013 |
| 2013 | 7,527,022 | 8,494,574 | 223,094 | 2,750,944 | 0 | 1,264,013 | 1,558,125 | 4,744,591 | 1,224,171 | 1,823,058 |
| 2014 | 3,684,182 | 2,584,394 | 297,539 | 645,562 | 0 | 852,000 | 1,769,477 | 2,546,748 | 253,957 | 1,483,316 |
| 2015 | 2,739,880 | 7,815,571 | 306,511 | 2,412,005 | 0 | 2,201,826 | 1,247,863 | 5,752,329 | 1,238,560 | 1,055,122 |
| 2016 | 6,832,217 | 11,038,796 | 211,282 | 3,594,810 | 0 | 4,476,903 | 1,835,979 | 10,945,427 | 2,641,634 | 2,595,515 |
| 2017 | 15,567,436 | 12,446,204 | 158,436 | 4,733,155 | 0 | 6,636,699 | 2,305,180 | 12,631,119 | 3,299,863 | 3,013,618 |
| 2018 | 10,078,821 | 23,860,464 | 203,703 | 8,350,642 | 0 | 1,154,606 | 1,867,372 | 8,124,207 | 2,982,872 | 2,765,452 |
| 2019 | 10,375,587 | 6,881,304 | 335,692 | 2,175,352 | 6,868 | 3,138,201 | 2,797,149 | 12,507,874 | 3,076,116 | 2,568,306 |
| 2020 | 16,301,485 | 14,015,274 | 706,355 | 5,647,644 | 0 | 6,689,394 | 3,605,601 | 10,407,345 | 2,917,527 | 2,803,192 |
| 2021 | 16,497,988 | 14,207,982 | 714,742 | 5,725,298 | 0 | 6,763,640 | 3,648,759 | 10,550,293 | 2,957,643 | 2,868,252 |
| 2022 | 17,548,980 | 15,383,002 | 748,883 | 6,198,788 | 0 | 6,994,284 | 3,880,942 | 11,419,947 | 3,202,244 | 3,023,277 |
| 2023 | 17,047,074 | 14,864,758 | 730,147 | 5,989,955 | 0 | 6,841,044 | 3,769,448 | 11,035,962 | 3,094,362 | 2,961,203 |
| 2024 | 16,822,113 | 14,619,367 | 718,613 | 5,891,071 | 0 | 6,714,829 | 3,719,712 | 10,853,837 | 3,043,280 | 2,930,445 |
| 2025 | 17,161,579 | 15,003,652 | 734,193 | 6,045,924 | 0 | 6,871,048 | 3,794,810 | 11,138,761 | 3,123,276 | 2,978,746 |
| 2026 | 16,564,492 | 14,375,408 | 708,999 | 5,792,765 | 0 | 6,637,152 | 3,662,737 | 10,672,989 | 2,992,495 | 2,899,941 |
| 2027 | 17,120,337 | 14,943,758 | 732,202 | 6,021,789 | 0 | 6,850,193 | 3,785,657 | 11,094,404 | 3,110,808 | 2,971,317 |
| 2028 | 16,771,817 | 14,579,308 | 717,757 | 5,874,929 | 0 | 6,718,634 | 3,708,601 | 10,824,225 | 3,034,941 | 2,925,436 |
| 2029 | 16,682,771 | 14,533,038 | 714,691 | 5,856,284 | 0 | 6,695,466 | 3,688,820 | 10,789,781 | 3,025,309 | 2,920,829 |
| 2030 | 16,712,665 | 14,534,553 | 715,108 | 5,856,894 | 0 | 6,692,812 | 3,695,530 | 10,790,946 | 3,025,624 | 2,919,612 |
| 2031 | 18,002,763 | 15,805,406 | 768,696 | 6,369,002 | 0 | 7,182,561 | 3,980,716 | 11,733,442 | 3,290,175 | 3,079,238 |
| 2032 | 16,412,054 | 14,261,457 | 701,207 | 5,746,846 | 0 | 6,553,211 | 3,629,145 | 10,588,136 | 2,968,774 | 2,884,209 |
| 2033 | 17,920,847 | 15,661,428 | 765,675 | 6,310,984 | 0 | 7,158,745 | 3,962,617 | 11,627,015 | 3,260,203 | 3,061,281 |
| 2034 | 16,120,376 | 14,015,898 | 690,548 | 5,647,895 | 0 | 6,468,130 | 3,564,551 | 10,405,988 | 2,917,657 | 2,855,161 |
| 2035 | 20,690,660 | 18,260,201 | 875,792 | 7,358,194 | 0 | 8,120,303 | 4,574,927 | 13,554,393 | 3,801,184 | 3,385,666 |
| TOTAL | 440,118,496 | 373,125,390 | 15,817,171 | 159,674,345 | 357,727 | 161,034,021 | 94,051,720 | 286,374,657 | 78,862,341 | 69,720,036 |

^a B-18 includes Extra Peaking Charges for additional power shown in Table 9.

TABLE B-18 Variable OMP&R Component of Transportation Charge for Each Contractor^a (in dollars)

Sheet 4 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | South Bay Area Future Contractor | Grand Total |
|---------------|--------------------------------------|----------------------|-------------------|----------------------|--------------------|----------|----------|----------|----------------------------------|----------------------|
| | Santa Clarita ^b | Metropolitan | Ventura | Total | Yuba City | Butte | Plumas | Total | | |
| 1961 | [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57,711 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74,134 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 142,609 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 192,606 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 236,998 |
| 1968 | 30,401 | 0 | 0 | 30,401 | 0 | 0 | 0 | 0 | 0 | 1,117,912 |
| 1969 | 30,627 | 0 | 0 | 30,627 | 0 | 0 | 0 | 0 | 0 | 773,646 |
| 1970 | 39,430 | 0 | 0 | 39,430 | 0 | 0 | 0 | 0 | 0 | 1,103,799 |
| 1971 | 34,871 | 0 | 0 | 34,871 | 0 | 0 | 0 | 0 | 0 | 1,513,434 |
| 1972 | 47,571 | 848,011 | 0 | 947,266 | 0 | 0 | 0 | 0 | 0 | 3,297,202 |
| 1973 | 28,968 | 1,083,328 | 0 | 1,687,126 | 0 | 0 | 0 | 0 | 0 | 3,174,991 |
| 1974 | 28,982 | 1,872,297 | 0 | 2,373,712 | 0 | 0 | 0 | 0 | 0 | 3,926,489 |
| 1975 | 28,568 | 3,887,152 | 0 | 4,499,209 | 0 | 0 | 0 | 0 | 0 | 6,057,701 |
| 1976 | 38,365 | 5,485,263 | 0 | 6,488,418 | 0 | 0 | 0 | 0 | 0 | 8,477,311 |
| 1977 | 21,006 | (796,686) | 0 | (234,739) | 0 | 0 | 0 | 0 | 0 | 1,152,444 |
| 1978 | 45,550 | 3,696,428 | 0 | 4,890,112 | 0 | 0 | 0 | 0 | 0 | 7,632,606 |
| 1979 | 83,940 | 4,021,960 | 0 | 5,859,389 | 0 | 0 | 0 | 0 | 0 | 9,873,798 |
| 1980 | 51,143 | 5,362,245 | 0 | 7,605,064 | 0 | 0 | 0 | 0 | 0 | 10,425,875 |
| 1981 | 118,583 | 10,862,932 | 0 | 13,626,585 | 0 | 0 | 0 | 0 | 0 | 17,576,025 |
| 1982 | 132,575 | 7,685,168 | 0 | 10,069,760 | 0 | 0 | 0 | 0 | 0 | 13,566,611 |
| 1983 | (335,712) | (8,994,497) | 0 | (8,620,817) | 0 | 0 | 0 | 0 | 0 | (7,441,457) |
| 1984 | (142,910) | (7,633,741) | 0 | (6,721,621) | 0 | 0 | 0 | 0 | 0 | (4,008,601) |
| 1985 | (335,343) | (15,739,366) | 0 | (14,196,048) | 0 | 0 | 0 | 0 | 0 | (10,310,371) |
| 1986 | 54,812 | 1,135,478 | 0 | 4,531,005 | 0 | 0 | 0 | 0 | 0 | 11,629,559 |
| 1987 | (40,745) | (3,007,097) | 0 | 116,362 | 0 | 0 | 0 | 0 | 0 | 6,746,470 |
| 1988 | (74,006) | (3,407,929) | 0 | (378,098) | 0 | 0 | 0 | 0 | 0 | 6,351,151 |
| 1989 | 178,359 | 9,488,536 | 0 | 15,062,251 | 0 | 0 | 0 | 0 | 0 | 24,661,302 |
| 1990 | 422,502 | 30,759,725 | 204,582 | 39,322,882 | 0 | 0 | 0 | 0 | 0 | 48,184,400 |
| 1991 | (3,054) | 184,870 | 22,623 | 1,625,484 | 0 | 0 | 0 | 0 | 0 | 2,463,685 |
| 1992 | (208,900) | (9,471,028) | 0 | (8,196,198) | 0 | 0 | 0 | 0 | 0 | (5,499,060) |
| 1993 | (491,161) | (21,473,875) | 0 | (25,072,572) | 0 | 0 | 0 | 0 | 0 | (24,652,636) |
| 1994 | 66,338 | 4,059,683 | 0 | 7,920,177 | 0 | 0 | 0 | 0 | 0 | 13,514,307 |
| 1995 | (247,735) | (4,895,977) | 0 | (4,901,581) | 0 | 0 | 0 | 0 | 0 | (99,701) |
| 1996 | 72,171 | 1,859,275 | 0 | 6,054,577 | 0 | 0 | 0 | 0 | 0 | 15,893,938 |
| 1997 | 22,440 | 2,428,729 | (921) | 6,336,979 | 0 | 0 | 0 | 0 | 0 | 14,932,641 |
| 1998 | (733,387) | (14,593,773) | (68,568) | (23,889,113) | 0 | 0 | 0 | 0 | 0 | (24,030,879) |
| 1999 | (448,290) | (9,194,693) | (30,003) | (9,640,848) | 0 | 0 | 0 | 0 | 0 | (2,621,509) |
| 2000 | (360,679) | (14,982,560) | 6,226 | (14,443,828) | 0 | 0 | 0 | 0 | 0 | (7,179,265) |
| 2001 | 4,442,763 | 157,946,899 | 265,404 | 184,958,532 | 0 | 0 | 0 | 0 | 0 | 207,765,068 |
| 2002 | 1,972,925 | 59,841,457 | 279,778 | 73,976,216 | 0 | 0 | 0 | 0 | 0 | 88,828,838 |
| 2003 | 3,152,927 | 94,319,451 | 358,003 | 110,915,789 | 0 | 0 | 0 | 0 | 0 | 129,407,240 |
| 2004 | 3,252,013 | 107,156,248 | 416,820 | 125,792,825 | 0 | 0 | 0 | 0 | 0 | 144,109,361 |
| 2005 | 3,011,986 | 113,938,011 | 123,173 | 137,224,954 | 0 | 0 | 0 | 0 | 0 | 166,351,708 |
| 2006 | 2,246,838 | 82,428,619 | 92,504 | 108,768,131 | 0 | 0 | 0 | 0 | 0 | 132,062,976 |
| 2007 | 4,237,426 | 137,719,208 | 317,331 | 177,737,187 | 0 | 0 | 0 | 0 | 0 | 201,791,221 |
| 2008 | 3,786,315 | 83,654,697 | 409,553 | 112,046,081 | 0 | 0 | 0 | 0 | 0 | 129,123,542 |
| 2009 | 2,595,502 | 60,876,508 | 350,864 | 82,503,002 | 0 | 0 | 0 | 0 | 0 | 93,164,913 |
| 2010 | 2,755,790 | 89,820,153 | 402,739 | 122,939,269 | 0 | 0 | 0 | 0 | 0 | 140,020,386 |
| 2011 | 2,817,663 | 131,808,061 | 425,260 | 168,419,794 | 0 | 0 | 0 | 0 | 0 | 199,911,580 |
| 2012 | 3,549,285 | 103,452,714 | 479,967 | 150,945,386 | 0 | 0 | 0 | 0 | 0 | 172,640,715 |
| 2013 | 5,774,508 | 109,125,408 | 408,943 | 144,918,452 | 0 | 0 | 0 | 0 | 0 | 169,367,850 |
| 2014 | 5,165,630 | 70,466,740 | 17,983 | 89,767,528 | 0 | 0 | 0 | 0 | 0 | 106,660,063 |
| 2015 | 5,413,675 | 111,640,673 | 214,839 | 142,038,854 | 0 | 0 | 0 | 0 | 0 | 161,895,056 |
| 2016 | 5,005,768 | 166,776,322 | 521,843 | 216,476,495 | 0 | 0 | 0 | 0 | 0 | 244,402,444 |
| 2017 | 7,407,253 | 216,637,530 | 2,188,318 | 287,024,811 | 0 | 0 | 0 | 0 | 0 | 328,522,842 |
| 2018 | 6,823,989 | 111,115,676 | 105,248 | 177,433,052 | 0 | 0 | 0 | 0 | 0 | 207,530,209 |
| 2019 | 7,697,792 | 184,431,468 | 4,719,493 | 240,711,203 | 0 | 0 | 0 | 0 | 0 | 275,138,483 |
| 2020 | 9,827,332 | 184,583,148 | 2,162,324 | 259,666,622 | 0 | 0 | 0 | 0 | 0 | 292,735,150 |
| 2021 | 9,945,578 | 186,986,443 | 2,188,236 | 263,054,855 | 0 | 0 | 0 | 0 | 0 | 296,699,232 |
| 2022 | 10,266,849 | 198,202,636 | 2,266,967 | 279,136,800 | 0 | 0 | 0 | 0 | 0 | 315,935,151 |
| 2023 | 10,006,588 | 191,977,567 | 2,210,619 | 270,528,727 | 0 | 0 | 0 | 0 | 0 | 302,999,792 |
| 2024 | 9,814,370 | 188,641,687 | 2,169,326 | 265,938,651 | 0 | 0 | 0 | 0 | 0 | 298,848,737 |
| 2025 | 10,073,795 | 193,664,454 | 2,224,452 | 272,814,689 | 0 | 0 | 0 | 0 | 0 | 306,963,290 |
| 2026 | 9,707,894 | 185,927,940 | 2,144,999 | 262,087,811 | 0 | 0 | 0 | 0 | 0 | 293,854,456 |
| 2027 | 10,015,481 | 192,655,404 | 2,213,158 | 271,514,507 | 0 | 0 | 0 | 0 | 0 | 304,641,999 |
| 2028 | 9,840,229 | 188,573,841 | 2,173,573 | 265,743,291 | 0 | 0 | 0 | 0 | 0 | 298,453,559 |
| 2029 | 9,741,682 | 187,119,165 | 2,155,043 | 263,922,880 | 0 | 0 | 0 | 0 | 0 | 293,506,476 |
| 2030 | 9,808,253 | 188,004,280 | 2,166,177 | 264,922,454 | 0 | 0 | 0 | 0 | 0 | 297,870,884 |
| 2031 | 10,429,177 | 202,235,857 | 2,308,359 | 285,185,391 | 0 | 0 | 0 | 0 | 0 | 318,476,543 |
| 2032 | 9,668,621 | 185,111,927 | 2,132,377 | 260,657,965 | 0 | 0 | 0 | 0 | 0 | 296,279,409 |
| 2033 | 10,410,178 | 201,082,277 | 2,303,217 | 283,524,467 | 0 | 0 | 0 | 0 | 0 | 316,697,475 |
| 2034 | 9,486,337 | 181,474,638 | 2,094,738 | 255,741,918 | 0 | 0 | 0 | 0 | 0 | 287,214,934 |
| 2035 | 11,598,205 | 230,091,217 | 2,577,089 | 324,887,830 | 0 | 0 | 0 | 0 | 0 | 365,986,446 |
| TOTAL | 239,905,898 | 5,260,018,182 | 47,722,655 | 7,226,782,639 | 0 | 0 | 0 | 0 | 0 | 8,334,802,874 |

^a B-18 includes Extra Peaking Charges for additional power shown in Table 9.^b Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-19 Total Transportation Charge for Each Contractor^a (in dollars)

Sheet 1 of 4

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA | | | | CENTRAL COASTAL AREA | | |
|---------------|------------------|------------------|-------------------|-------------------|------------------|-------------------|-------------------|----------------------|-------------------|-------------------|
| | Napa | Solano | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| [1] | [2] | [3] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] |
| 1961 | 0 | 0 | 0 | 0 | 11,750 | 43,787 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 193,920 | 190,272 | 447,723 | 831,915 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 255,449 | 277,455 | 621,356 | 1,154,260 | 6,696 | 21,667 | 28,363 |
| 1964 | 0 | 0 | 0 | 364,163 | 404,324 | 1,158,090 | 1,926,577 | 13,756 | 36,029 | 49,785 |
| 1965 | 0 | 0 | 0 | 409,118 | 421,723 | 1,412,954 | 2,243,794 | 26,524 | 61,349 | 87,873 |
| 1966 | 18,063 | 0 | 18,063 | 527,991 | 498,441 | 1,686,098 | 2,712,530 | 56,469 | 118,263 | 174,731 |
| 1967 | 41,574 | 0 | 41,574 | 652,349 | 603,483 | 1,985,220 | 3,241,052 | 115,961 | 229,807 | 345,768 |
| 1968 | 128,628 | 0 | 128,628 | 775,382 | 539,340 | 2,083,253 | 3,397,975 | 185,156 | 358,861 | 544,017 |
| 1969 | 254,715 | 0 | 254,715 | 810,949 | 532,567 | 2,202,767 | 3,546,283 | 200,150 | 387,675 | 587,825 |
| 1970 | 277,547 | 0 | 277,547 | 810,949 | 532,567 | 2,202,767 | 3,546,283 | 200,150 | 387,675 | 587,825 |
| 1971 | 227,474 | 0 | 227,474 | 776,200 | 552,113 | 2,169,897 | 3,498,210 | 202,413 | 392,912 | 595,325 |
| 1972 | 224,978 | 0 | 224,978 | 818,306 | 678,520 | 2,320,421 | 3,817,247 | 209,057 | 406,589 | 615,646 |
| 1973 | 221,091 | 31,366 | 252,457 | 783,737 | 549,393 | 2,338,620 | 3,671,750 | 206,557 | 402,724 | 609,281 |
| 1974 | 240,498 | 32,938 | 273,437 | 807,699 | 564,593 | 2,506,358 | 3,878,650 | 208,545 | 407,090 | 615,635 |
| 1975 | 237,459 | 36,291 | 273,750 | 857,918 | 605,731 | 2,409,923 | 3,873,572 | 225,895 | 439,873 | 665,768 |
| 1976 | 271,292 | 40,836 | 312,127 | 948,823 | 734,812 | 2,500,506 | 4,184,140 | 228,976 | 447,299 | 676,275 |
| 1977 | 293,627 | 45,096 | 338,723 | 913,155 | 713,558 | 2,476,399 | 4,103,113 | 238,699 | 468,721 | 707,420 |
| 1978 | 273,870 | 49,178 | 323,048 | 968,676 | 692,587 | 2,785,987 | 4,447,250 | 245,331 | 484,259 | 729,590 |
| 1979 | 289,479 | 53,340 | 342,819 | 1,033,963 | 736,358 | 2,813,578 | 4,583,899 | 243,110 | 483,437 | 726,547 |
| 1980 | 310,846 | 67,748 | 378,594 | 1,152,189 | 866,372 | 3,028,204 | 5,046,765 | 269,858 | 537,074 | 806,932 |
| 1981 | 347,781 | 87,408 | 435,189 | 1,117,944 | 879,357 | 2,917,582 | 4,914,882 | 288,997 | 586,257 | 875,254 |
| 1982 | 438,335 | 106,918 | 545,254 | 1,156,231 | 850,483 | 3,262,104 | 5,268,818 | 290,049 | 582,757 | 872,806 |
| 1983 | 354,787 | 151,259 | 506,046 | 1,168,152 | 900,363 | 3,795,446 | 5,863,961 | 319,214 | 633,181 | 952,395 |
| 1984 | 467,336 | 224,245 | 691,581 | 1,460,171 | 1,097,480 | 5,737,801 | 8,295,453 | 351,620 | 695,559 | 1,047,179 |
| 1985 | 736,074 | 364,305 | 1,100,379 | 1,910,574 | 1,789,369 | 6,551,546 | 10,251,489 | 394,593 | 776,994 | 1,171,586 |
| 1986 | 1,084,728 | 692,479 | 1,777,207 | 1,738,059 | 1,528,732 | 6,863,230 | 10,130,021 | 385,545 | 762,684 | 1,148,229 |
| 1987 | 1,773,801 | 1,559,243 | 3,333,044 | 2,228,158 | 2,011,876 | 6,675,355 | 10,915,389 | 385,289 | 812,310 | 1,197,599 |
| 1988 | 2,231,563 | 2,333,792 | 4,565,355 | 2,229,974 | 2,210,523 | 6,368,850 | 10,809,346 | 420,153 | 978,621 | 1,398,774 |
| 1989 | 2,397,272 | 3,326,436 | 5,723,708 | 2,146,244 | 1,872,030 | 5,916,714 | 9,934,988 | 414,224 | 1,162,723 | 1,576,947 |
| 1990 | 2,746,135 | 3,433,320 | 6,179,455 | 2,565,641 | 2,261,914 | 6,668,440 | 11,495,995 | 487,609 | 1,234,409 | 1,722,018 |
| 1991 | 2,748,636 | 3,682,311 | 6,430,947 | 1,744,994 | 1,621,188 | 4,527,928 | 7,894,110 | 491,419 | 1,476,387 | 1,967,806 |
| 1992 | 2,554,528 | 3,528,958 | 6,083,486 | 2,065,352 | 2,003,328 | 5,385,858 | 9,454,538 | 551,042 | 1,491,156 | 2,042,198 |
| 1993 | 2,592,888 | 3,504,240 | 6,097,128 | 2,870,246 | 2,011,222 | 6,511,865 | 11,393,333 | 610,115 | 1,675,438 | 2,285,553 |
| 1994 | 2,718,329 | 3,537,459 | 6,255,788 | 2,896,691 | 2,642,460 | 7,314,515 | 12,853,665 | 767,900 | 2,473,449 | 3,241,348 |
| 1995 | 2,649,273 | 3,509,935 | 6,159,208 | 3,024,918 | 2,289,027 | 5,893,667 | 11,207,613 | 995,341 | 4,977,122 | 5,972,462 |
| 1996 | 2,699,210 | 3,891,715 | 6,590,926 | 2,573,808 | 2,137,443 | 6,675,492 | 11,386,742 | 1,837,384 | 13,766,531 | 15,603,915 |
| 1997 | 2,641,891 | 3,631,175 | 6,273,066 | 2,646,938 | 2,007,332 | 6,551,469 | 11,205,739 | 2,294,917 | 21,860,553 | 24,155,470 |
| 1998 | 2,538,764 | 3,478,062 | 6,016,827 | 2,253,144 | 2,064,166 | 6,296,050 | 10,613,359 | 2,976,896 | 26,690,793 | 29,667,689 |
| 1999 | 2,689,826 | 3,843,209 | 6,533,034 | 2,881,085 | 2,455,120 | 8,385,576 | 13,721,782 | 3,032,745 | 27,479,837 | 30,512,582 |
| 2000 | 2,832,574 | 4,308,089 | 7,140,663 | 3,906,591 | 2,303,786 | 7,030,361 | 13,240,739 | 2,946,818 | 27,835,591 | 30,782,409 |
| 2001 | 3,348,442 | 4,914,002 | 8,262,444 | 7,307,932 | 2,795,685 | 8,451,441 | 18,555,058 | 3,501,499 | 29,990,590 | 33,492,089 |
| 2002 | 3,555,813 | 5,050,710 | 8,606,523 | 10,761,103 | 2,777,107 | 9,918,869 | 23,457,079 | 3,212,468 | 29,615,200 | 32,827,668 |
| 2003 | 3,667,023 | 5,394,368 | 9,061,392 | 7,406,626 | 2,507,040 | 8,729,606 | 18,643,272 | 3,294,613 | 29,872,238 | 33,166,850 |
| 2004 | 4,143,678 | 5,619,634 | 9,763,312 | 5,951,120 | 2,812,117 | 8,200,982 | 16,604,219 | 3,307,281 | 30,300,985 | 33,608,266 |
| 2005 | 3,503,204 | 5,129,791 | 8,632,995 | 5,602,703 | 2,965,732 | 8,975,318 | 17,543,753 | 3,431,724 | 30,410,329 | 33,842,054 |
| 2006 | 3,407,410 | 4,627,601 | 8,035,010 | 5,566,454 | 2,962,825 | 9,104,833 | 17,634,112 | 3,274,605 | 30,052,920 | 33,327,525 |
| 2007 | 3,601,587 | 5,099,774 | 8,701,362 | 6,617,421 | 3,479,775 | 10,360,367 | 20,457,564 | 3,424,821 | 31,258,970 | 34,683,791 |
| 2008 | 4,294,000 | 5,057,468 | 9,351,468 | 7,463,088 | 3,775,150 | 10,524,492 | 21,762,730 | 3,928,221 | 32,522,874 | 36,451,095 |
| 2009 | 4,728,781 | 5,108,320 | 9,837,101 | 6,363,333 | 3,306,703 | 10,273,707 | 19,943,743 | 3,728,605 | 30,837,425 | 34,566,030 |
| 2010 | 4,978,015 | 6,526,586 | 11,504,601 | 7,157,287 | 3,655,818 | 11,118,574 | 21,931,679 | 4,079,901 | 33,009,437 | 37,089,338 |
| 2011 | 5,345,687 | 6,919,175 | 12,264,862 | 8,435,833 | 4,338,735 | 12,933,200 | 25,707,769 | 4,153,962 | 34,140,953 | 38,294,915 |
| 2012 | 5,808,817 | 6,872,933 | 12,681,750 | 9,201,906 | 4,329,192 | 15,130,884 | 28,661,981 | 4,196,590 | 34,518,851 | 38,715,441 |
| 2013 | 5,461,054 | 6,616,716 | 12,077,770 | 10,036,569 | 5,086,154 | 15,168,708 | 30,291,432 | 4,424,503 | 35,946,425 | 40,370,928 |
| 2014 | 6,094,337 | 7,172,391 | 13,266,728 | 9,727,974 | 5,328,917 | 15,160,289 | 30,217,180 | 4,262,858 | 33,136,542 | 37,399,401 |
| 2015 | 6,198,215 | 7,123,435 | 13,321,650 | 10,458,174 | 4,772,833 | 16,507,966 | 31,378,973 | 4,840,063 | 35,088,680 | 39,928,742 |
| 2016 | 6,537,141 | 7,739,592 | 14,276,733 | 10,716,432 | 4,365,801 | 22,452,313 | 37,534,546 | 4,627,992 | 39,618,128 | 44,246,120 |
| 2017 | 5,589,236 | 6,300,261 | 11,889,497 | 11,051,409 | 4,786,496 | 19,091,282 | 34,929,187 | 4,755,709 | 43,383,322 | 48,139,032 |
| 2018 | 6,532,492 | 7,406,817 | 13,939,309 | 12,947,456 | 5,336,254 | 19,800,807 | 38,084,517 | 4,918,090 | 42,660,684 | 47,578,775 |
| 2019 | 7,434,669 | 7,943,219 | 15,377,889 | 12,696,723 | 4,962,711 | 16,200,791 | 33,860,225 | 5,027,804 | 40,602,151 | 45,629,955 |
| 2020 | 6,691,250 | 8,463,223 | 15,154,473 | 13,115,389 | 5,643,796 | 16,548,975 | 35,308,160 | 6,112,201 | 40,236,623 | 46,348,824 |
| 2021 | 6,810,346 | 7,511,330 | 14,321,675 | 13,793,244 | 5,934,275 | 17,211,364 | 36,938,882 | 6,195,165 | 40,499,464 | 46,694,629 |
| 2022 | 7,038,260 | 8,346,943 | 15,385,203 | 13,668,412 | 5,903,568 | 17,168,092 | 36,740,071 | 6,714,837 | 42,128,963 | 48,843,800 |
| 2023 | 7,041,592 | 8,316,963 | 15,358,556 | 13,429,690 | 5,775,110 | 16,861,443 | 36,066,243 | 6,660,512 | 42,076,749 | 48,737,261 |
| 2024 | 7,067,822 | 8,361,560 | 15,429,381 | 13,535,777 | 5,818,635 | 16,983,068 | 36,337,481 | 6,688,737 | 42,210,322 | 48,899,059 |
| 2025 | 7,088,178 | 8,404,774 | 15,492,952 | 13,674,484 | 5,879,309 | 17,144,010 | 36,697,802 | 6,728,189 | 42,368,419 | 49,096,608 |
| 2026 | 7,112,848 | 8,447,127 | 15,559,975 | 13,624,997 | 5,841,515 | 17,072,850 | 36,539,362 | 6,715,169 | 42,414,777 | 49,129,946 |
| 2027 | 7,140,077 | 8,490,440 | 15,630,517 | 13,767,815 | 5,903,812 | 17,236,893 | 36,908,520 | 6,756,116 | 42,574,963 | 49,331,079 |
| 2028 | 7,166,927 | 8,534,216 | 15,701,142 | 13,826,385 | 5,921,742 | 17,297,437 | 37,045,564 | 6,767,820 | 42,675,077 | 49,442,897 |
| 2029 | 7,194,552 | 8,578,827 | 15,773,379 | 13,721,895 | 5,854,557 | 17,154,883 | 36,731,334 | 6,744,715 | 42,700,878 | 49,445,593 |
| 2030 | 7,214,035 | 8,612,025 | 15,826,060 | 13,992,879 | 5,983,193 | 17,479,937 | 37,456,009 | 6,816,001 | 42,926,858 | 49,742,859 |
| 2031 | 7,230,663 | 8,640,770 | 15,871,433 | 14,056,919 | 6,003,517 | 17,543,530 | 37,603,966 | 6,837,813 | 43,040,122 | 49,877,935 |
| 2032 | 7,248,347 | 8,669,298 | 15,917,646 | 14,354,365 | 6,144,142 | 17,913,369 | 38,411,876 | 6,896,563 | 43,250,216 | 50,146,779 |

TABLE B-19 Total Transportation Charge for Each Contractor^a (in dollars)

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | | |
|---------------|-------------------------|------------------|--------------------------------------|--------------------------|----------------------|-------------------|------------------|--------------------|----------------------|
| | Dudley Ridge | Empire | Future Contractor San Joaquin Valley | Kern | | Kings | Oak Flat | Tulare | Total |
| | | | | Municipal and Industrial | Agricultural | | | | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 2,725 | 0 | 0 | 0 | 0 | 0 | 2,725 |
| 1965 | 0 | 0 | 6,029 | 73,569 | 0 | 0 | 0 | 0 | 79,598 |
| 1966 | 0 | 0 | 12,039 | 137,330 | 0 | 0 | 0 | 0 | 149,368 |
| 1967 | 0 | 0 | 26,257 | 267,611 | 0 | 0 | 0 | 0 | 293,869 |
| 1968 | 189,317 | 9,147 | 54,588 | 445,439 | 1,567,076 | 13,770 | 11,865 | 212,919 | 2,504,120 |
| 1969 | 184,932 | 8,360 | 87,576 | 525,094 | 2,438,701 | 12,625 | 10,893 | 372,255 | 3,640,437 |
| 1970 | 207,402 | 15,127 | 94,675 | 573,998 | 2,971,584 | 12,790 | 13,442 | 304,973 | 4,193,990 |
| 1971 | 204,406 | 16,085 | 95,695 | 605,889 | 3,898,740 | 17,763 | 14,767 | 460,816 | 5,314,160 |
| 1972 | 227,664 | 16,953 | 98,788 | 631,615 | 5,106,896 | 15,220 | 21,369 | 1,118,659 | 7,237,164 |
| 1973 | 210,913 | 13,024 | 97,550 | 639,250 | 5,057,276 | 15,483 | 12,110 | 423,578 | 6,469,184 |
| 1974 | 294,647 | 12,993 | 98,460 | 698,247 | 5,375,701 | 15,590 | 13,237 | 621,946 | 7,130,822 |
| 1975 | 364,172 | 13,938 | 106,703 | 715,606 | 6,526,921 | 16,620 | 14,935 | 757,384 | 8,516,278 |
| 1976 | 315,820 | 14,484 | 108,084 | 774,291 | 6,894,809 | 16,993 | 16,666 | 585,377 | 8,726,524 |
| 1977 | 277,618 | 11,594 | 112,554 | 797,859 | 7,088,185 | 18,457 | 14,405 | 531,354 | 8,852,026 |
| 1978 | 367,210 | 4,441 | 115,521 | 890,945 | 8,565,255 | 18,921 | 18,471 | 526,470 | 10,507,234 |
| 1979 | 399,297 | 14,331 | 114,253 | 896,194 | 9,713,876 | 20,202 | 25,416 | 978,011 | 12,161,579 |
| 1980 | 421,281 | 12,681 | 125,950 | 888,893 | 10,295,420 | 20,749 | 25,014 | 762,539 | 12,552,527 |
| 1981 | 484,772 | 30,522 | 134,169 | 1,079,315 | 11,767,685 | 24,939 | 23,499 | 935,349 | 14,480,251 |
| 1982 | 479,281 | 13,672 | 135,057 | 1,004,667 | 12,625,236 | 22,955 | 22,991 | 774,181 | 15,078,040 |
| 1983 | 653,139 | 15,266 | 149,202 | 1,027,258 | 15,861,802 | 39,971 | 29,647 | 431,419 | 18,207,705 |
| 1984 | 926,470 | 15,680 | 164,505 | 2,063,179 | 24,010,495 | 54,427 | 60,272 | 805,969 | 28,100,998 |
| 1985 | 1,115,638 | 88,241 | 184,905 | 2,350,593 | 28,342,523 | 69,483 | 70,815 | 2,186,656 | 34,408,855 |
| 1986 | 1,280,498 | 34,697 | 180,445 | 2,365,159 | 30,917,934 | 80,769 | 76,701 | 2,216,510 | 37,152,713 |
| 1987 | 1,139,695 | 51,492 | 179,872 | 2,804,776 | 29,757,336 | 78,018 | 74,961 | 2,276,948 | 36,363,098 |
| 1988 | 1,125,925 | 62,287 | 193,735 | 2,750,424 | 29,693,820 | 74,168 | 60,863 | 2,236,018 | 36,197,239 |
| 1989 | 1,162,065 | 49,969 | 187,913 | 2,435,635 | 29,772,899 | 67,048 | 69,353 | 2,480,862 | 36,225,744 |
| 1990 | 875,730 | 35,131 | 221,392 | 2,541,316 | 27,906,245 | 51,058 | 49,795 | 1,910,666 | 33,591,331 |
| 1991 | 601,458 | 24,036 | 220,282 | 2,055,250 | 18,105,637 | 27,930 | 27,564 | 1,271,231 | 22,333,388 |
| 1992 | 972,383 | 39,872 | 241,455 | 2,369,788 | 26,403,758 | 55,795 | 51,618 | 1,948,371 | 32,083,041 |
| 1993 | 1,184,673 | 54,399 | 264,959 | 2,799,482 | 31,917,927 | 72,889 | 70,301 | 2,681,959 | 39,046,589 |
| 1994 | 1,039,763 | 44,525 | 306,359 | 2,808,829 | 29,793,738 | 60,460 | 58,068 | 2,157,889 | 36,269,630 |
| 1995 | 1,536,451 | 47,383 | 304,297 | 3,499,611 | 36,917,293 | 88,875 | 80,891 | 2,811,999 | 45,286,801 |
| 1996 | 1,364,639 | 49,015 | 389,203 | 3,560,139 | 36,884,004 | 86,092 | 74,539 | 4,357,890 | 46,765,521 |
| 1997 | 1,406,168 | 26,172 | 276,681 | 3,107,763 | 33,051,796 | 36,715 | 69,399 | 1,711,967 | 39,686,661 |
| 1998 | 1,250,052 | 35,127 | 381,847 | 2,654,434 | 29,808,509 | 41,835 | 60,695 | 1,842,211 | 36,074,709 |
| 1999 | 1,248,437 | 56,785 | 369,935 | 3,072,927 | 32,016,420 | 75,744 | 66,210 | 4,224,625 | 41,131,083 |
| 2000 | 1,081,499 | 38,732 | 302,665 | 2,319,641 | 26,922,799 | 61,870 | 55,487 | 2,823,731 | 33,606,424 |
| 2001 | 1,759,610 | 63,657 | 328,028 | 2,237,334 | 34,419,557 | 80,120 | 101,849 | 3,098,738 | 42,088,891 |
| 2002 | 1,336,594 | 44,363 | 320,541 | 2,330,951 | 29,394,055 | 73,376 | 78,575 | 2,586,176 | 36,164,630 |
| 2003 | 1,404,984 | 49,263 | 339,960 | 2,741,740 | 32,217,068 | 89,704 | 79,805 | 2,904,559 | 39,827,083 |
| 2004 | 1,461,901 | 78,624 | 342,484 | 3,759,643 | 30,834,388 | 235,478 | 82,406 | 2,414,960 | 39,209,883 |
| 2005 | 2,051,419 | 88,564 | 355,581 | 2,982,461 | 41,903,102 | 419,658 | 81,946 | 3,464,878 | 51,347,609 |
| 2006 | 1,799,926 | 75,498 | 295,502 | 3,283,556 | 37,908,415 | 253,307 | 79,336 | 2,814,720 | 46,510,259 |
| 2007 | 1,667,977 | 70,127 | 334,118 | 3,065,635 | 35,795,415 | 234,987 | 82,735 | 2,967,934 | 44,218,929 |
| 2008 | 1,523,900 | 62,500 | 471,717 | 3,455,042 | 35,114,722 | 248,427 | 80,890 | 2,445,280 | 43,402,479 |
| 2009 | 1,218,551 | 50,324 | 437,320 | 2,186,424 | 30,726,523 | 192,451 | 62,614 | 2,033,285 | 36,907,493 |
| 2010 | 1,446,384 | 106,398 | 507,046 | 2,356,467 | 36,248,749 | 249,828 | 84,231 | 2,644,602 | 43,643,703 |
| 2011 | 2,189,566 | 82,272 | 506,678 | 3,444,471 | 51,111,784 | 304,071 | 92,590 | 2,741,958 | 60,473,390 |
| 2012 | 1,271,904 | 88,932 | 467,806 | 3,233,697 | 40,874,460 | 317,037 | 92,435 | 3,471,143 | 49,817,413 |
| 2013 | 1,623,957 | 82,813 | 519,769 | 3,411,998 | 41,138,925 | 280,806 | 92,199 | 2,765,727 | 49,916,193 |
| 2014 | 1,611,517 | 66,240 | 630,866 | 2,787,925 | 36,225,573 | 227,371 | 93,456 | 2,110,381 | 43,753,329 |
| 2015 | 1,408,950 | 68,335 | 753,863 | 3,202,660 | 38,110,697 | 228,601 | 81,956 | 2,313,979 | 46,169,040 |
| 2016 | 1,394,822 | 89,980 | 484,489 | 2,927,905 | 39,858,538 | 264,086 | 86,919 | 2,715,903 | 47,822,641 |
| 2017 | 1,937,769 | 78,223 | 480,557 | 3,144,696 | 49,989,078 | 323,057 | 94,976 | 2,828,176 | 58,876,531 |
| 2018 | 1,701,635 | 85,600 | 589,041 | 2,552,746 | 41,431,701 | 264,206 | 96,933 | 2,664,994 | 49,386,855 |
| 2019 | 1,781,641 | 108,715 | 618,833 | 4,337,756 | 49,389,986 | 357,925 | 91,841 | 3,905,236 | 60,591,932 |
| 2020 | 1,754,141 | 101,063 | 631,268 | 5,095,913 | 47,215,692 | 341,049 | 127,619 | 3,283,102 | 58,549,847 |
| 2021 | 1,703,360 | 98,160 | 636,077 | 5,139,868 | 46,465,835 | 336,652 | 119,857 | 3,183,620 | 57,683,430 |
| 2022 | 1,826,044 | 106,017 | 685,052 | 5,608,836 | 48,594,321 | 364,051 | 133,305 | 3,412,763 | 60,730,390 |
| 2023 | 1,689,722 | 97,444 | 689,778 | 5,176,422 | 46,176,134 | 337,393 | 116,597 | 3,162,831 | 57,446,320 |
| 2024 | 1,714,063 | 98,993 | 694,462 | 5,228,580 | 46,656,943 | 342,138 | 119,410 | 3,208,063 | 58,062,653 |
| 2025 | 1,762,026 | 102,031 | 699,154 | 5,359,520 | 47,659,796 | 351,492 | 124,479 | 3,296,697 | 59,355,197 |
| 2026 | 1,693,580 | 97,735 | 704,195 | 5,167,460 | 46,432,391 | 338,097 | 116,247 | 3,171,477 | 57,721,182 |
| 2027 | 1,744,795 | 100,978 | 708,913 | 5,312,229 | 47,526,321 | 348,067 | 121,505 | 3,266,096 | 59,128,904 |
| 2028 | 1,741,239 | 100,771 | 711,894 | 5,291,542 | 47,498,941 | 347,289 | 120,968 | 3,260,098 | 59,072,742 |
| 2029 | 1,644,818 | 94,712 | 717,048 | 5,044,587 | 45,859,829 | 328,404 | 108,738 | 3,083,502 | 56,881,638 |
| 2030 | 1,767,018 | 102,429 | 722,283 | 5,350,900 | 48,135,272 | 352,236 | 123,266 | 3,308,545 | 59,861,949 |
| 2031 | 1,780,434 | 103,291 | 726,275 | 5,408,337 | 48,675,831 | 354,474 | 123,134 | 3,333,743 | 60,505,519 |
| 2032 | 1,871,539 | 109,049 | 731,899 | 5,590,399 | 50,137,254 | 372,313 | 135,502 | 3,501,673 | 62,449,627 |
| 2033 | 1,798,430 | 104,460 | 737,253 | 5,451,358 | 49,176,938 | 357,919 | 124,458 | 3,367,925 | 61,118,741 |
| 2034 | 1,756,154 | 101,814 | 742,383 | 5,283,003 | 48,231,091 | 349,532 | 120,625 | 3,290,827 | 59,875,429 |
| 2035 | 2,065,552 | 121,326 | 747,460 | 6,195,611 | 54,564,897 | 409,785 | 153,680 | 3,859,804 | 68,118,115 |
| TOTAL | 83,499,337 | 4,056,861 | 26,215,913 | 201,379,687 | 2,119,678,517 | 11,661,610 | 4,993,342 | 155,626,121 | 2,607,111,389 |

^a Capital charges repaid through bond debt service prior to 2018 exclude bond cover; 2019 and after includes both bond debt service and bond cover.

TABLE B-19 Total Transportation Charge for Each Contractor^a (in dollars)

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|-------------------|------------------|-------------------|----------------|-------------------|------------------|-------------------|------------------|-------------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 34,411 | 0 | 0 | 726 | 0 | 0 | 51,729 | 0 | 0 | 0 |
| 1964 | 64,494 | 19,542 | 4,370 | 38,211 | 1,143 | 31,079 | 8,205 | 82,811 | 34,987 | 21,735 |
| 1965 | 121,484 | 34,348 | 7,194 | 42,701 | 2,082 | 55,096 | 15,222 | 135,069 | 35,344 | 21,866 |
| 1966 | 221,012 | 62,476 | 12,478 | 76,886 | 3,753 | 99,564 | 27,679 | 232,502 | 61,465 | 37,964 |
| 1967 | 427,622 | 121,269 | 23,472 | 148,839 | 7,284 | 193,330 | 54,023 | 433,350 | 115,574 | 71,283 |
| 1968 | 754,401 | 218,649 | 41,509 | 265,168 | 12,870 | 346,391 | 95,466 | 782,163 | 208,927 | 128,915 |
| 1969 | 1,090,136 | 334,105 | 61,226 | 394,024 | 18,693 | 517,627 | 138,063 | 1,205,834 | 321,755 | 198,764 |
| 1970 | 1,420,639 | 470,423 | 89,700 | 552,223 | 25,231 | 716,191 | 184,837 | 1,778,187 | 467,573 | 289,633 |
| 1971 | 1,760,670 | 627,331 | 128,360 | 754,065 | 31,837 | 961,821 | 231,280 | 2,538,219 | 659,414 | 409,327 |
| 1972 | 2,084,699 | 777,838 | 181,206 | 971,501 | 42,404 | 1,229,410 | 274,599 | 3,388,734 | 865,095 | 537,186 |
| 1973 | 2,177,324 | 920,218 | 183,713 | 1,184,696 | 43,482 | 1,297,631 | 287,315 | 3,971,543 | 946,686 | 587,963 |
| 1974 | 2,241,780 | 938,860 | 193,283 | 1,212,205 | 45,212 | 1,332,122 | 292,071 | 3,998,510 | 990,064 | 611,428 |
| 1975 | 2,419,858 | 983,580 | 206,040 | 1,280,804 | 48,490 | 1,402,709 | 304,281 | 4,159,094 | 1,088,341 | 644,621 |
| 1976 | 2,773,862 | 1,032,075 | 215,084 | 1,356,888 | 51,463 | 1,447,059 | 313,685 | 4,299,592 | 1,141,598 | 668,315 |
| 1977 | 2,717,286 | 929,532 | 226,032 | 1,194,916 | 47,348 | 1,520,694 | 329,365 | 4,553,831 | 1,197,216 | 696,515 |
| 1978 | 3,035,392 | 1,111,606 | 231,040 | 1,470,658 | 47,118 | 1,522,574 | 321,681 | 4,460,167 | 1,208,720 | 709,040 |
| 1979 | 3,589,381 | 1,180,841 | 237,955 | 1,569,175 | 48,396 | 1,652,156 | 332,472 | 4,422,382 | 1,152,375 | 712,866 |
| 1980 | 4,136,480 | 1,271,861 | 259,401 | 1,730,656 | 53,348 | 1,773,646 | 360,461 | 4,835,652 | 1,269,447 | 777,981 |
| 1981 | 4,469,204 | 1,355,504 | 271,181 | 1,850,802 | 77,806 | 1,901,990 | 391,869 | 5,224,182 | 1,357,680 | 806,031 |
| 1982 | 4,031,426 | 1,403,332 | 280,313 | 1,936,175 | 55,961 | 2,097,457 | 406,891 | 5,410,876 | 1,565,182 | 853,400 |
| 1983 | 5,224,176 | 1,997,502 | 333,081 | 2,880,959 | 69,381 | 2,175,175 | 494,688 | 6,020,929 | 1,556,652 | 952,131 |
| 1984 | 7,262,706 | 3,084,372 | 445,339 | 4,608,046 | 75,773 | 2,406,288 | 553,321 | 7,049,449 | 2,331,849 | 1,072,639 |
| 1985 | 8,979,937 | 3,882,496 | 540,388 | 5,883,196 | 79,232 | 2,519,013 | 759,052 | 7,740,359 | 2,378,394 | 1,120,854 |
| 1986 | 8,880,068 | 4,308,841 | 577,474 | 6,571,197 | 102,400 | 2,630,023 | 1,000,062 | 7,857,569 | 3,047,741 | 1,149,714 |
| 1987 | 8,897,753 | 4,164,707 | 604,982 | 6,418,841 | 211,809 | 2,664,198 | 1,026,398 | 9,224,608 | 3,034,142 | 1,172,015 |
| 1988 | 8,373,323 | 4,163,832 | 615,999 | 6,482,143 | 124,667 | 2,720,190 | 779,820 | 9,505,259 | 2,828,998 | 1,208,206 |
| 1989 | 8,750,651 | 3,808,646 | 586,595 | 5,952,262 | 170,570 | 2,668,718 | 1,442,627 | 8,944,266 | 2,930,395 | 1,194,911 |
| 1990 | 10,040,074 | 4,487,886 | 620,394 | 7,014,185 | 289,349 | 2,868,548 | 1,639,830 | 9,795,019 | 3,678,107 | 1,297,621 |
| 1991 | 6,542,001 | 2,996,131 | 567,450 | 4,550,559 | 175,137 | 3,628,817 | 1,294,608 | 8,921,839 | 3,035,638 | 1,354,921 |
| 1992 | 8,644,005 | 3,068,616 | 470,165 | 4,667,984 | 121,335 | 4,430,978 | 1,129,578 | 8,573,361 | 2,980,091 | 1,349,184 |
| 1993 | 9,028,570 | 3,267,678 | 472,817 | 4,993,632 | 157,747 | 4,310,820 | 1,347,511 | 9,505,683 | 3,320,012 | 1,507,550 |
| 1994 | 11,216,190 | 3,313,737 | 554,651 | 5,066,159 | 225,809 | 5,305,045 | 1,698,990 | 10,209,083 | 4,076,706 | 1,497,753 |
| 1995 | 10,817,875 | 4,087,603 | 509,163 | 6,340,703 | 155,561 | 4,393,483 | 1,527,248 | 9,443,228 | 3,715,377 | 1,520,622 |
| 1996 | 11,187,158 | 7,025,782 | 553,232 | 11,183,947 | 150,612 | 4,461,375 | 1,867,203 | 9,869,329 | 3,807,422 | 1,527,165 |
| 1997 | 11,437,950 | 6,588,591 | 579,281 | 7,422,990 | 144,833 | 4,765,951 | 1,869,307 | 11,268,380 | 4,037,862 | 1,730,348 |
| 1998 | 9,956,830 | 5,663,864 | 546,645 | 5,928,447 | 146,074 | 5,802,559 | 1,474,029 | 11,192,751 | 3,321,115 | 1,920,021 |
| 1999 | 11,531,679 | 4,698,256 | 638,518 | 6,060,988 | 147,200 | 6,048,803 | 1,864,854 | 12,351,722 | 4,198,794 | 2,167,221 |
| 2000 | 10,579,316 | 3,059,860 | 593,984 | 4,361,929 | 115,267 | 5,810,030 | 1,447,440 | 11,817,519 | 3,249,463 | 2,327,124 |
| 2001 | 20,607,925 | 4,100,681 | 797,527 | 6,349,945 | 127,791 | 6,509,774 | 3,341,457 | 17,567,700 | 3,395,382 | 2,987,171 |
| 2002 | 11,991,319 | 3,358,252 | 759,148 | 5,125,059 | 109,666 | 5,636,686 | 2,738,656 | 18,359,937 | 4,782,871 | 4,190,134 |
| 2003 | 13,366,671 | 3,480,415 | 729,620 | 5,324,825 | 115,323 | 7,299,750 | 2,277,653 | 16,737,038 | 4,950,854 | 5,409,067 |
| 2004 | 14,236,310 | 4,113,480 | 829,136 | 5,365,054 | 124,162 | 7,410,193 | 2,518,300 | 21,064,717 | 4,388,736 | 5,730,446 |
| 2005 | 14,641,239 | 17,786,874 | 653,880 | 10,282,020 | 114,279 | 7,210,352 | 2,567,425 | 19,108,687 | 4,652,123 | 5,999,847 |
| 2006 | 16,101,888 | 27,272,802 | 633,645 | 9,868,705 | 122,276 | 9,905,469 | 2,489,751 | 18,840,314 | 4,667,142 | 6,476,497 |
| 2007 | 19,636,818 | 26,127,517 | 881,244 | 9,369,270 | 126,740 | 13,734,261 | 4,031,708 | 25,070,905 | 3,834,819 | 7,132,739 |
| 2008 | 17,125,476 | 25,654,927 | 806,359 | 10,270,834 | 135,194 | 12,058,785 | 3,951,238 | 25,190,335 | 4,790,089 | 8,416,641 |
| 2009 | 14,842,411 | 23,299,835 | 780,933 | 8,133,043 | 133,351 | 11,715,458 | 3,674,468 | 25,052,655 | 5,259,958 | 8,720,909 |
| 2010 | 17,521,199 | 31,741,743 | 687,766 | 10,963,745 | 122,674 | 14,036,623 | 3,017,050 | 27,356,699 | 6,752,290 | 9,765,745 |
| 2011 | 23,804,720 | 33,188,156 | 744,592 | 11,906,281 | 136,175 | 7,620,970 | 3,015,863 | 24,564,259 | 7,438,406 | 10,561,204 |
| 2012 | 23,900,544 | 39,583,097 | 846,229 | 14,177,068 | 147,916 | 9,339,077 | 4,348,746 | 37,826,949 | 7,669,735 | 11,445,179 |
| 2013 | 19,351,390 | 31,923,279 | 1,059,730 | 10,843,763 | 165,568 | 9,339,492 | 3,480,112 | 29,160,824 | 5,910,256 | 12,039,864 |
| 2014 | 14,761,572 | 27,333,511 | 1,152,982 | 8,757,711 | 170,872 | 9,403,673 | 3,597,275 | 29,233,203 | 4,837,465 | 14,480,952 |
| 2015 | 12,698,035 | 30,372,034 | 1,128,272 | 10,070,417 | 163,251 | 10,873,985 | 2,756,781 | 34,484,598 | 5,883,375 | 16,481,468 |
| 2016 | 16,365,846 | 33,182,131 | 1,029,058 | 10,877,820 | 156,300 | 12,466,973 | 3,237,090 | 40,807,270 | 7,182,592 | 19,621,551 |
| 2017 | 24,442,297 | 32,319,507 | 928,597 | 11,389,640 | 147,130 | 14,058,960 | 3,611,922 | 44,317,538 | 7,543,002 | 21,934,623 |
| 2018 | 19,288,942 | 48,895,574 | 982,510 | 15,675,756 | 154,427 | 8,768,329 | 3,228,835 | 41,458,716 | 7,344,765 | 22,871,280 |
| 2019 | 20,753,916 | 33,970,197 | 1,213,369 | 10,382,977 | 178,441 | 11,800,758 | 4,323,343 | 48,803,401 | 8,037,349 | 23,807,844 |
| 2020 | 26,431,457 | 40,585,425 | 1,538,076 | 13,699,543 | 165,502 | 15,306,601 | 5,092,064 | 47,057,030 | 7,704,561 | 24,761,562 |
| 2021 | 26,871,669 | 41,489,134 | 1,557,643 | 13,824,105 | 162,717 | 15,442,766 | 5,195,339 | 46,842,462 | 7,759,792 | 24,523,544 |
| 2022 | 27,771,371 | 43,134,041 | 1,579,334 | 14,268,830 | 168,392 | 15,624,063 | 5,365,179 | 47,489,849 | 7,930,477 | 24,635,019 |
| 2023 | 27,162,976 | 42,078,272 | 1,556,839 | 13,994,116 | 168,702 | 15,410,076 | 5,237,554 | 47,059,932 | 7,822,509 | 24,589,568 |
| 2024 | 26,996,015 | 41,884,212 | 1,547,343 | 13,922,956 | 169,679 | 15,333,658 | 5,196,241 | 46,973,679 | 7,786,687 | 24,600,641 |
| 2025 | 27,388,702 | 42,322,821 | 1,565,437 | 14,098,461 | 170,576 | 15,525,102 | 5,279,110 | 47,363,624 | 7,881,164 | 24,690,934 |
| 2026 | 26,856,260 | 41,761,982 | 1,543,903 | 13,873,254 | 171,647 | 15,336,156 | 5,156,479 | 47,009,012 | 7,766,144 | 24,655,212 |
| 2027 | 27,478,560 | 42,426,967 | 1,571,624 | 14,138,930 | 172,769 | 15,601,100 | 5,289,161 | 47,572,579 | 7,908,324 | 24,775,067 |
| 2028 | 27,199,438 | 42,200,015 | 1,562,341 | 14,038,124 | 173,928 | 15,527,707 | 5,222,279 | 47,465,350 | 7,861,806 | 24,781,406 |
| 2029 | 27,175,262 | 42,297,879 | 1,564,686 | 14,067,718 | 175,026 | 15,563,870 | 5,212,093 | 47,604,061 | 7,884,124 | 24,830,984 |
| 2030 | 27,267,900 | 42,451,035 | 1,570,602 | 14,117,680 | 176,100 | 15,620,729 | 5,228,215 | 47,781,627 | 7,916,937 | 24,884,645 |
| 2031 | 28,541,513 | 43,763,286 | 1,625,100 | 14,637,376 | 175,840 | 16,119,600 | 5,511,283 | 48,819,111 | 8,191,972 | 25,085,934 |
| 2032 | 27,042,688 | 42,413,950 | 1,564,804 | 14,081,488 | 177,377 | 15,573,307 | 5,173,510 | 47,882,044 | 7,911,573 | 24,951,704 |
| 2033 | 28,552,889 | 43,916,019 | 1,632,062 | 14,672,417 | 177,460 | 16,213,977 | 5,508,605 | 49,051,454 | 8,222,399</td | |

TABLE B-19 Total Transportation Charge for Each Contractor^a (in dollars)

Sheet 4 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | South Bay Area Future Contractor | Grand Total |
|---------------|--------------------------------------|-----------------------|--------------------|-----------------------|--------------------|----------|----------------|----------------|----------------------------------|-----------------------|
| | Santa Clarita ^b | Metropolitan | Ventura | Total | Yuba City | Butte | Plumas | Total | | |
| | [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,219 | 79,888 |
| 1963 | 0 | 690,812 | 0 | 777,678 | 0 | 0 | 0 | 0 | 12,626 | 1,622,219 |
| 1964 | 27,447 | 1,260,513 | 9,378 | 1,603,916 | 0 | 0 | 0 | 0 | 13,938 | 2,803,202 |
| 1965 | 53,007 | 2,180,589 | 17,766 | 2,721,767 | 0 | 0 | 405 | 405 | 28,937 | 4,807,069 |
| 1966 | 101,264 | 3,900,172 | 33,426 | 4,870,643 | 0 | 0 | 565 | 565 | 31,321 | 7,401,629 |
| 1967 | 210,814 | 7,693,703 | 68,155 | 9,568,718 | 0 | 0 | 562 | 562 | 47,718 | 12,839,702 |
| 1968 | 479,430 | 15,317,881 | 142,803 | 18,794,574 | 0 | 0 | 564 | 564 | 46,945 | 25,061,651 |
| 1969 | 726,941 | 23,153,064 | 215,209 | 28,375,442 | 0 | 0 | 3,191 | 3,191 | 52,963 | 36,268,740 |
| 1970 | 907,388 | 30,617,164 | 273,605 | 37,792,793 | 0 | 0 | 15,121 | 15,121 | 69,744 | 46,483,303 |
| 1971 | 1,092,226 | 39,958,997 | 342,425 | 49,495,973 | 0 | 0 | 16,001 | 16,001 | 55,532 | 59,202,674 |
| 1972 | 1,313,046 | 52,948,599 | 422,304 | 65,036,621 | 0 | 0 | 17,372 | 17,372 | 80,412 | 77,029,440 |
| 1973 | 1,329,993 | 57,273,225 | 435,655 | 70,639,443 | 0 | 0 | 17,334 | 17,334 | 54,219 | 81,713,668 |
| 1974 | 1,390,223 | 61,776,466 | 455,565 | 75,477,790 | 0 | 0 | 17,477 | 17,477 | 76,783 | 87,470,594 |
| 1975 | 1,459,721 | 66,756,784 | 478,403 | 81,232,726 | 0 | 0 | 18,406 | 18,406 | 84,547 | 94,665,047 |
| 1976 | 1,455,766 | 68,485,047 | 475,587 | 83,716,020 | 0 | 0 | 17,477 | 17,477 | 106,717 | 97,739,281 |
| 1977 | 1,525,758 | 66,234,179 | 507,063 | 81,679,735 | 0 | 0 | 18,232 | 18,232 | 98,618 | 95,797,866 |
| 1978 | 1,611,725 | 72,934,779 | 523,177 | 89,187,676 | 0 | 0 | 17,381 | 17,381 | 100,786 | 105,312,964 |
| 1979 | 1,647,464 | 72,666,594 | 526,405 | 89,738,461 | 0 | 0 | 20,579 | 20,579 | 119,352 | 107,693,236 |
| 1980 | 1,730,293 | 79,926,555 | 571,232 | 98,697,014 | 0 | 0 | 17,761 | 17,761 | 178,812 | 117,678,406 |
| 1981 | 1,985,241 | 91,261,394 | 636,404 | 111,589,287 | 0 | 0 | 21,193 | 21,193 | 185,347 | 132,501,402 |
| 1982 | 2,078,107 | 93,144,741 | 670,375 | 113,934,236 | 0 | 0 | 28,423 | 28,423 | 173,894 | 135,901,470 |
| 1983 | 2,341,708 | 101,787,700 | 803,591 | 126,637,674 | 0 | 0 | 19,276 | 19,276 | 220,926 | 152,407,982 |
| 1984 | 3,384,271 | 137,507,077 | 868,967 | 170,650,097 | 0 | 0 | 21,114 | 21,114 | 225,959 | 209,032,382 |
| 1985 | 3,769,869 | 172,916,230 | 908,769 | 211,477,788 | 0 | 0 | 20,239 | 20,239 | 340,322 | 258,770,657 |
| 1986 | 4,338,643 | 193,242,026 | 937,311 | 234,643,068 | 0 | 0 | 20,139 | 20,139 | 279,227 | 285,150,603 |
| 1987 | 4,180,492 | 178,764,439 | 908,034 | 221,272,417 | 0 | 0 | 19,742 | 19,742 | 345,116 | 273,446,405 |
| 1988 | 4,244,922 | 190,243,523 | 904,868 | 232,195,750 | 0 | 0 | 17,900 | 17,900 | 365,207 | 285,549,572 |
| 1989 | 4,125,634 | 193,235,261 | 932,599 | 234,743,135 | 0 | 0 | 19,158 | 19,158 | 422,329 | 288,646,009 |
| 1990 | 4,566,894 | 239,540,417 | 1,486,755 | 287,325,078 | 0 | 0 | 18,148 | 18,148 | 474,284 | 340,806,309 |
| 1991 | 3,535,826 | 179,950,983 | 1,141,118 | 217,695,027 | 0 | 0 | 21,018 | 21,018 | 214,683 | 256,556,978 |
| 1992 | 4,493,392 | 196,166,977 | 1,025,285 | 237,120,952 | 0 | 0 | 18,014 | 18,014 | 443,676 | 287,245,904 |
| 1993 | 4,124,807 | 169,493,328 | 1,068,135 | 212,598,291 | 0 | 0 | 20,999 | 20,999 | 599,571 | 272,041,465 |
| 1994 | 4,737,019 | 209,282,955 | 1,008,952 | 258,193,049 | 0 | 0 | 19,649 | 19,649 | 609,966 | 317,443,096 |
| 1995 | 4,994,858 | 173,420,265 | 1,061,324 | 221,987,307 | 0 | 0 | 20,277 | 20,277 | 534,971 | 291,168,639 |
| 1996 | 5,182,938 | 181,404,029 | 1,103,254 | 239,323,447 | 0 | 0 | 25,378 | 25,378 | 571,857 | 320,267,786 |
| 1997 | 4,949,659 | 186,736,527 | 1,216,560 | 242,748,238 | 0 | 0 | 24,820 | 24,820 | 428,638 | 324,522,632 |
| 1998 | 4,578,126 | 168,571,967 | 1,237,386 | 220,339,814 | 0 | 0 | 0 | 0 | 465,095 | 303,177,493 |
| 1999 | 5,028,576 | 192,300,888 | 1,266,033 | 248,303,531 | 0 | 0 | 0 | 0 | 584,116 | 340,786,128 |
| 2000 | 6,843,250 | 184,932,812 | 1,320,919 | 236,458,913 | 0 | 0 | 0 | 0 | 0 | 321,229,147 |
| 2001 | 12,467,246 | 374,039,724 | 1,616,021 | 453,908,343 | 0 | 0 | 0 | 0 | 0 | 556,306,825 |
| 2002 | 9,689,905 | 264,583,886 | 1,648,226 | 332,973,745 | 0 | 0 | 0 | 0 | 0 | 434,029,644 |
| 2003 | 10,744,195 | 292,850,922 | 1,668,182 | 364,954,514 | 0 | 0 | 20,800 | 20,800 | 0 | 465,673,911 |
| 2004 | 11,809,591 | 339,977,107 | 1,909,916 | 419,477,149 | 0 | 0 | 20,830 | 20,830 | 0 | 518,683,660 |
| 2005 | 10,855,823 | 312,842,936 | 1,398,129 | 408,113,613 | 0 | 0 | 20,827 | 20,827 | 0 | 519,500,850 |
| 2006 | 9,966,554 | 288,422,287 | 1,328,182 | 396,095,512 | 0 | 0 | 21,281 | 21,281 | 0 | 501,623,699 |
| 2007 | 13,382,480 | 373,893,015 | 1,871,217 | 499,092,734 | 0 | 0 | 20,893 | 20,893 | 0 | 607,175,271 |
| 2008 | 15,288,406 | 339,743,074 | 2,266,768 | 465,698,126 | 0 | 0 | 22,411 | 22,411 | 0 | 576,688,310 |
| 2009 | 13,001,935 | 303,253,694 | 2,071,095 | 419,939,745 | 0 | 0 | 18,220 | 18,220 | 0 | 521,212,330 |
| 2010 | 12,681,298 | 348,487,682 | 2,103,206 | 485,237,720 | 0 | 0 | 18,448 | 18,448 | 0 | 599,425,489 |
| 2011 | 12,341,010 | 390,874,855 | 2,093,595 | 528,290,085 | 0 | 0 | 20,130 | 20,130 | 0 | 665,051,149 |
| 2012 | 14,330,681 | 373,690,023 | 2,331,183 | 539,636,429 | 0 | 0 | 18,469 | 18,469 | 0 | 669,531,484 |
| 2013 | 17,071,226 | 365,642,409 | 2,277,299 | 508,265,211 | 0 | 0 | 17,665 | 17,665 | 0 | 640,939,199 |
| 2014 | 15,801,278 | 315,884,648 | 1,817,645 | 447,232,786 | 0 | 0 | 17,492 | 17,492 | 0 | 571,886,916 |
| 2015 | 14,993,671 | 333,656,314 | 1,887,866 | 475,450,068 | 0 | 0 | 17,088 | 17,088 | 0 | 606,625,562 |
| 2016 | 13,854,401 | 378,431,038 | 2,188,062 | 539,400,130 | 0 | 0 | 22,214 | 22,214 | 0 | 683,302,385 |
| 2017 | 16,240,619 | 430,601,991 | 3,897,913 | 611,433,738 | 0 | 0 | 16,927 | 16,927 | 0 | 765,284,913 |
| 2018 | 15,631,189 | 326,150,723 | 1,738,652 | 512,189,698 | 0 | 0 | 64,393 | 64,393 | 0 | 661,243,549 |
| 2019 | 17,481,581 | 424,513,228 | 6,543,028 | 611,809,432 | 0 | 0 | 16,932 | 16,932 | 0 | 767,286,364 |
| 2020 | 19,549,565 | 421,893,874 | 3,963,820 | 627,749,081 | 0 | 0 | 5,204 | 5,204 | 0 | 783,115,589 |
| 2021 | 19,893,764 | 427,746,540 | 4,062,735 | 635,372,210 | 0 | 0 | 4,229 | 4,229 | 0 | 791,015,056 |
| 2022 | 20,124,614 | 439,160,619 | 4,122,088 | 651,373,876 | 0 | 0 | 2,904 | 2,904 | 0 | 813,076,244 |
| 2023 | 19,842,410 | 431,427,503 | 4,075,935 | 640,426,392 | 0 | 0 | 2,932 | 2,932 | 0 | 798,037,703 |
| 2024 | 19,663,714 | 427,888,599 | 4,033,608 | 635,997,032 | 0 | 0 | 2,960 | 2,960 | 0 | 794,728,566 |
| 2025 | 19,978,395 | 433,777,963 | 4,098,209 | 644,140,497 | 0 | 0 | 2,987 | 2,987 | 0 | 804,786,043 |
| 2026 | 19,668,097 | 427,028,395 | 4,028,491 | 634,855,033 | 0 | 0 | 3,015 | 3,015 | 0 | 793,808,513 |
| 2027 | 20,031,762 | 434,894,901 | 4,106,494 | 645,968,237 | 0 | 0 | 3,042 | 3,042 | 0 | 806,970,298 |
| 2028 | 19,904,011 | 432,019,184 | 4,075,558 | 642,031,146 | 0 | 0 | 3,071 | 3,071 | 0 | 803,296,561 |
| 2029 | 19,843,239 | 431,578,229 | 4,062,559 | 641,859,728 | 0 | 0 | 3,100 | 3,100 | 0 | 800,694,772 |
| 2030 | 19,909,446 | 432,884,892 | 4,070,786 | 643,880,592 | 0 | 0 | 3,129 | 3,129 | 0 | 806,770,598 |
| 2031 | 20,464,935 | 446,027,920 | 4,195,020 | 663,158,891 | 0 | 0 | 3,158 | 3,158 | 0 | 827,020,902 |
| 2032 | 19,731,269 | 429,940,783 | 4,022,491 | 640,466,987 | 0 | 0 | 3,189 | 3,189 | 0 | 807,396,104 |
| 2033 | 20,479,453 | 446,268,824 | 4,192,255 | 664,064,478 | 0 | 0 | 3,219 | 3,219 | 0 | 829,221,690 |
| 2034 | 19,593,345 | 427,362,579 | 3,989,420 | 637,263,944 | 0 | 0 | 3,250 | 3,250 | 0 | 801,291,660 |
| 2035 | 21,764,262 | 477,121,082 | 4,481,841 | 707,997,960 | 0 | 0 | 3,281 | 3,281 | 0 | 882,079,359 |
| TOTAL | 678,622,106 | 17,702,240,101 | 134,242,292 | 24,544,448,952 | 0 | 0 | 981,607 | 981,607 | 8,748,370 | 30,733,103,807 |

^a Capital charges repaid through bond debt service prior to 2018 exclude bond cover; 2019 and after includes both bond debt service and bond cover.^b Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-20A Calculation of Delta Water Rates

Calculation in Accordance with Article 53(i) of the Monterey Amendment
(Values in millions of dollars [\$] or millions of acre-feet [af] discounted to 2019 at 4.610 percent per annum)

| Procedure | Capital Cost Component | Minimum Operation, Maintenance, Power and Replacement Component ^a | | Total Delta Water Rate | |
|---|---------------------------|--|-------------------------|------------------------|-------------------------------|
| | [1] | [2] | | [3] | |
| Commencing in 2020 | | | | | |
| Total Costs of "Initial" Project Conservation Facilities to be Reimbursed and Project Water Table A Amounts During the Project Repayment Period | \$10,384.29 ^b | 533.60 af | \$9,019.41 ^c | 533.60 af | \$19,403.70 533.60 af |
| Less, Project Power Revenues to be Realized During the Project Repayment Period | (\$5,183.20) | | (\$5,107.76) | | (\$10,290.96) |
| Less, Delta Water Charges Paid and Project Water Table A Amounts, Prior to 2019 | (\$3,653.68) ^d | (487.09) af | (\$1,664.07) | (487.09) af | (\$5,317.75) (487.09) af |
| TOTAL | \$1,547.40 | 46.51 af | \$2,247.59 | 46.51 af | \$3,794.99 46.51 af |
| Rate Applicable in 2020 | | \$33.27 per acre-foot | | \$48.33 per acre-foot | \$81.60 per acre-foot |

**Calculation Under Original Provisions, without the Monterey Amendment
(for Plumas and Empire)**

| Procedure | Capital Cost Component | Minimum Operation, Maintenance, Power and Replacement Component ^a | | Total Delta Water Rate | |
|---|---------------------------|--|-------------------------|------------------------|-------------------------------|
| | [4] | [5] | | [6] | |
| Commencing in 2020 | | | | | |
| Total Costs of "Initial" Project Conservation Facilities to be Reimbursed and Project Water Table A Amounts during the Project Repayment Period | \$10,361.98 ^b | 533.60 af | \$8,980.85 ^c | 533.60 af | \$19,342.82 533.60 af |
| Less, Project Power Revenues to be Realized During the Project Repayment Period | (\$5,183.20) | | (\$5,107.76) | | (\$10,290.96) |
| Less, Delta Water Charges Paid and Project Water Table A Amounts, Prior to 2019 | (\$3,653.68) ^d | (487.09) af | (\$1,664.07) | (487.09) af | (\$5,317.75) (487.09) af |
| TOTAL | \$1,525.09 | 46.51 af | \$2,209.02 | 46.51 af | \$3,734.11 46.51 af |
| Rate Applicable in 2020 | | \$32.79 per acre-foot | | \$47.50 per acre-foot | \$80.29 per acre-foot |

^a Considering that all operating costs of Project Conservation Facilities will not vary with annual amounts of Project water delivered, and therefore are properly classified as "Minimum" OMP&R Costs. OMP&R costs exclude amounts for Conservation Replacement Accounting System.

^b Including net credits of \$4,850,000 for settlements as to the magnitude of Project Capital costs incurred prior to December 31, 1960, and net credits of \$6,678,320 for settlement as to the magnitude of Project Capital costs incurred during the 1961 through 1978 period.

^c Includes conservation power costs and credits at San Luis Reservoir.

^d Applying all Delta Water Charges paid prior to 1970 to reimburse Capital costs (the charge was not divided into components until 1970).

TABLE B-20B Delta Water Rates by Facility (in dollars per acre-foot)

| Item | Capital Cost Component [1] | Minimum Operation, Maintenance, Power and Replacement Component [2] | Total Delta Water Rate [3] |
|--|-------------------------------|--|-------------------------------|
| Initial Conservation Facilities | | | |
| Oroville Division | | | |
| Water Supply and Power Costs ^a | 132.28 | 88.07 | 220.35 |
| Less, Oroville Power Revenues | <u>-75.55</u> | <u>-35.78</u> | <u>-111.33</u> |
| Subtotal | 56.74 | 52.28 | 109.02 |
| Delta Facilities ^b | 44.25 | 64.58 | 108.83 |
| California Aqueduct portion | | | |
| Reach1 | 7.77 | 14.84 | 22.61 |
| Reach 2A | 4.41 | 1.78 | 6.19 |
| Reach 2B | 2.30 | 1.62 | 3.91 |
| Reach 3 | <u>1.55</u> | <u>0.68</u> | <u>2.23</u> |
| Subtotal | 16.04 | 18.91 | 34.94 |
| San Luis Facilities | 24.01 | 21.56 | 45.56 |
| Planning and Preoperating Costs through 2018 | 6.24 | 0.00 | 6.24 |
| 45,000 acre-feet Relinquished Costs | 0.48 | 0.83 | 1.31 |
| Less, Capital Cost Credits | -3.02 | 0.00 | -3.02 |
| Less, Delta Water Charges paid prior to 2020 | <u>-111.45</u> | <u>-109.83</u> | <u>-221.28</u> |
| Rate Applicable in 2020 | 33.27 | 48.33 | 81.60 |

^aIncludes revenue received from non-SWP water contractors.^bIncludes: 1. Delta Facility planning costs; 2. Delta Studies costs; and 3. Suisun Marsh Facilities costs.

TABLE B-21 Total Delta Water Charge for Each Contractor (in dollars)

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA | | | | CENTRAL COASTAL AREA | | |
|---------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|----------------------|--------------------|--------------------|
| | Napa | Solano | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| [1] | [2] | [3] | [0] | [4] | [5] | [6] | [0] | [8] | [9] | [10] |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 14,000 | 50,050 | 177,100 | 241,150 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 19,156 | 29,701 | 193,245 | 242,102 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 30,324 | 44,096 | 215,483 | 289,903 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 80,908 | 107,730 | 585,200 | 773,838 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 57,320 | 123,080 | 637,120 | 817,520 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 99,668 | 143,877 | 707,328 | 950,873 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 120,880 | 167,099 | 782,167 | 1,070,146 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 137,684 | 182,339 | 818,664 | 1,138,687 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 146,204 | 187,324 | 804,123 | 1,137,651 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 168,489 | 208,652 | 862,036 | 1,239,177 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 172,931 | 208,645 | 827,062 | 1,208,638 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 206,378 | 243,231 | 926,594 | 1,376,203 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 237,771 | 273,208 | 1,005,955 | 1,516,934 | 0 | 0 | 0 |
| 1980 | 0 | 18,325 | 18,325 | 272,717 | 307,426 | 1,090,867 | 1,671,010 | 12,396 | 3,479 | 15,875 |
| 1981 | 0 | 25,440 | 25,440 | 415,564 | 469,768 | 1,589,984 | 2,475,316 | 18,068 | 10,414 | 28,482 |
| 1982 | 0 | 34,917 | 34,917 | 457,988 | 519,053 | 1,679,289 | 2,656,330 | 38,166 | 99,788 | 137,954 |
| 1983 | 0 | 12,035 | 12,035 | 316,703 | 359,775 | 1,114,795 | 1,791,273 | 38,004 | 68,902 | 106,906 |
| 1984 | 0 | 22,453 | 22,453 | 334,587 | 380,914 | 1,132,448 | 1,847,949 | 57,909 | 105,498 | 163,407 |
| 1985 | 0 | 22,001 | 22,001 | 381,970 | 435,728 | 1,244,939 | 2,062,637 | 106,103 | 192,937 | 299,040 |
| 1986 | 35,358 | 21,767 | 57,125 | 423,378 | 485,372 | 1,330,615 | 2,239,365 | 151,206 | 275,347 | 426,553 |
| 1987 | 0 | 22,984 | 22,984 | 430,024 | 493,786 | 1,304,900 | 2,228,710 | 185,355 | 336,664 | 522,019 |
| 1988 | 88,878 | 150,466 | 239,344 | 464,114 | 533,731 | 1,361,400 | 2,359,245 | 239,792 | 436,607 | 676,399 |
| 1989 | 102,688 | 305,328 | 408,016 | 513,853 | 591,760 | 1,491,833 | 2,597,446 | 331,518 | 602,402 | 933,920 |
| 1990 | 112,723 | 355,132 | 467,855 | 534,787 | 616,676 | 1,537,512 | 2,688,975 | 417,802 | 760,166 | 1,177,968 |
| 1991 | 129,296 | 395,515 | 524,811 | 603,028 | 681,067 | 1,667,194 | 2,951,289 | 443,403 | 806,745 | 1,250,148 |
| 1992 | 158,879 | 489,808 | 648,687 | 729,545 | 808,579 | 1,945,453 | 3,483,577 | 506,628 | 921,780 | 1,428,408 |
| 1993 | 172,457 | 530,778 | 703,235 | 771,894 | 840,958 | 1,990,673 | 3,603,525 | 507,825 | 923,957 | 1,431,782 |
| 1994 | 177,824 | 546,610 | 724,434 | 778,647 | 817,579 | 1,946,615 | 3,542,841 | 486,654 | 885,437 | 1,372,091 |
| 1995 | 203,738 | 713,497 | 917,235 | 874,946 | 874,946 | 2,083,205 | 3,833,097 | 520,801 | 947,567 | 1,468,368 |
| 1996 | 213,506 | 774,152 | 987,658 | 901,129 | 860,168 | 2,048,020 | 3,809,317 | 512,005 | 931,562 | 1,443,567 |
| 1997 | 250,558 | 866,141 | 1,116,699 | 1,041,633 | 951,056 | 2,264,420 | 4,257,109 | 566,105 | 1,029,994 | 1,596,099 |
| 1998 | 266,952 | 882,469 | 1,149,421 | 1,048,658 | 957,470 | 2,279,691 | 4,285,819 | 141,683 | 888,760 | 1,030,443 |
| 1999 | 290,688 | 923,459 | 1,214,147 | 1,084,480 | 990,178 | 2,357,566 | 4,432,224 | 589,391 | 1,072,362 | 1,661,753 |
| 2000 | 390,936 | 948,784 | 1,339,720 | 1,628,402 | 1,005,778 | 2,394,709 | 5,028,889 | 598,677 | 1,089,257 | 1,687,934 |
| 2001 | 496,412 | 1,097,880 | 1,594,292 | 1,868,283 | 1,005,998 | 2,395,234 | 5,269,515 | 598,809 | 1,089,496 | 1,688,305 |
| 2002 | 512,928 | 1,125,429 | 1,638,357 | 1,896,134 | 1,020,996 | 2,430,942 | 5,348,072 | 607,736 | 1,105,738 | 1,713,474 |
| 2003 | 511,059 | 1,112,692 | 1,623,751 | 1,856,232 | 999,510 | 2,379,785 | 5,235,527 | 594,946 | 1,082,469 | 1,677,415 |
| 2004 | 569,615 | 1,230,627 | 1,800,242 | 2,033,406 | 1,094,911 | 2,606,931 | 5,735,248 | 651,732 | 1,185,788 | 1,837,520 |
| 2005 | 573,729 | 1,219,893 | 1,793,622 | 2,081,144 | 1,084,212 | 2,581,456 | 5,746,812 | 645,364 | 1,174,201 | 1,819,565 |
| 2006 | 606,343 | 1,272,001 | 1,878,344 | 2,167,748 | 1,129,330 | 2,688,880 | 5,985,958 | 672,220 | 1,223,064 | 1,895,284 |
| 2007 | 623,728 | 1,291,247 | 1,914,975 | 2,198,222 | 1,145,206 | 2,726,679 | 6,070,107 | 681,671 | 1,240,257 | 1,921,928 |
| 2008 | 647,091 | 1,322,240 | 1,969,331 | 2,248,610 | 1,171,457 | 2,789,182 | 6,209,249 | 697,295 | 1,268,688 | 1,965,983 |
| 2009 | 717,087 | 1,446,549 | 2,163,636 | 2,457,420 | 1,280,240 | 3,048,190 | 6,785,850 | 762,047 | 1,386,499 | 2,148,546 |
| 2010 | 1,105,529 | 1,809,450 | 2,914,979 | 3,070,686 | 1,599,732 | 3,808,886 | 8,479,304 | 952,222 | 1,732,510 | 2,684,732 |
| 2011 | 1,216,921 | 1,993,865 | 3,210,786 | 3,380,086 | 1,760,920 | 4,192,667 | 9,333,673 | 1,048,166 | 1,907,076 | 2,955,242 |
| 2012 | 1,270,523 | 2,083,876 | 3,354,399 | 3,528,968 | 1,838,483 | 4,377,339 | 9,744,790 | 1,094,335 | 1,991,077 | 3,085,412 |
| 2013 | 1,344,704 | 2,207,862 | 3,552,566 | 3,735,010 | 1,945,825 | 4,632,915 | 10,313,750 | 1,158,229 | 2,107,328 | 3,265,557 |
| 2014 | 1,276,099 | 2,097,420 | 3,373,519 | 3,544,457 | 1,846,552 | 4,396,552 | 9,787,561 | 1,099,138 | 1,999,815 | 3,098,953 |
| 2015 | 1,736,721 | 2,857,498 | 4,594,219 | 4,823,867 | 2,513,086 | 5,983,536 | 13,320,489 | 1,495,884 | 2,721,671 | 4,217,555 |
| 2016 | 2,075,875 | 3,415,521 | 5,491,396 | 5,765,891 | 3,003,850 | 7,152,025 | 15,921,766 | 1,788,006 | 3,253,170 | 5,041,176 |
| 2017 | 1,999,142 | 3,289,270 | 5,288,412 | 5,552,760 | 2,892,816 | 6,887,657 | 15,333,233 | 1,721,914 | 3,132,919 | 4,854,833 |
| 2018 | 2,016,381 | 3,317,632 | 5,334,013 | 5,600,640 | 2,917,760 | 6,947,047 | 15,465,447 | 1,736,761 | 3,159,934 | 4,896,695 |
| 2019 | 2,033,904 | 3,346,465 | 5,380,369 | 5,649,314 | 2,943,117 | 7,007,422 | 15,599,853 | 1,751,856 | 3,187,396 | 4,939,252 |
| 2020 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2021 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2022 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2023 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2024 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2025 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2026 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2027 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2028 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2029 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2030 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2031 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2032 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2033 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2034 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| 2035 | 2,368,518 | 3,897,017 | 6,265,535 | 6,578,726 | 3,427,312 | 8,160,269 | 18,166,307 | 2,040,067 | 3,711,780 | 5,751,847 |
| TOTAL | 61,824,560 | 107,951,750 | 169,776,510 | 184,218,254 | 103,981,793 | 253,995,834 | 542,195,881 | 58,868,894 | 107,727,201 | 166,596,095 |

TABLE B-21 Total Delta Water Charge for Each Contractor (in dollars)

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | | |
|---------------|-------------------------|------------------|--------------------------------------|--------------------------|----------------------|-------------------|-------------------|--------------------|----------------------|
| | Dudley Ridge | Empire | Future Contractor San Joaquin Valley | Kern | | Kings | Oak Flat | Tulare | Total |
| | | | | Municipal and Industrial | Agricultural | | | | |
| 1964 | [11] 0 | [12] 0 | [13] 0 | [14] 0 | [15] 0 | [16] 0 | [17] 0 | [18] 0 | [19] 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 40,695 | 10,469 | 0 | 0 | 165,522 | 3,177 | 8,073 | 98,608 | 326,544 |
| 1969 | 61,267 | 3,281 | 0 | 0 | 337,686 | 4,200 | 8,805 | 102,478 | 517,717 |
| 1970 | 104,405 | 19,950 | 0 | 0 | 964,915 | 8,645 | 17,290 | 228,095 | 1,343,300 |
| 1971 | 129,596 | 21,720 | 0 | 0 | 1,377,772 | 9,412 | 20,272 | 264,260 | 1,823,032 |
| 1972 | 160,756 | 24,113 | 0 | 0 | 2,175,835 | 11,253 | 43,131 | 905,057 | 3,320,145 |
| 1973 | 195,541 | 26,664 | 0 | 386,638 | 2,373,167 | 13,333 | 27,553 | 373,307 | 3,396,203 |
| 1974 | 224,202 | 27,909 | 0 | 446,545 | 2,781,595 | 13,954 | 29,770 | 445,138 | 3,969,113 |
| 1975 | 329,688 | 27,413 | 0 | 481,560 | 3,041,048 | 14,620 | 33,702 | 827,591 | 4,755,622 |
| 1976 | 414,245 | 29,388 | 0 | 549,549 | 3,931,785 | 15,673 | 35,966 | 877,151 | 5,853,757 |
| 1977 | 312,532 | 28,195 | 0 | 569,545 | 4,071,218 | 15,977 | 40,289 | 626,210 | 5,663,966 |
| 1978 | 342,208 | 31,588 | 0 | 674,939 | 4,950,959 | 20,006 | 41,065 | 666,516 | 6,727,281 |
| 1979 | 395,523 | 34,294 | 0 | 772,757 | 5,901,986 | 22,863 | 45,725 | 771,613 | 7,944,761 |
| 1980 | 555,341 | 37,679 | 0 | 881,371 | 6,984,026 | 27,272 | 70,658 | 933,481 | 9,489,828 |
| 1981 | 740,789 | 54,204 | 0 | 1,351,487 | 11,140,730 | 41,556 | 77,692 | 1,373,168 | 14,779,626 |
| 1982 | 782,396 | 57,248 | 0 | 1,518,993 | 12,703,436 | 47,707 | 85,873 | 1,530,443 | 16,726,096 |
| 1983 | 543,462 | 38,004 | 0 | 1,057,789 | 9,141,315 | 35,471 | 58,273 | 78,506 | 10,952,820 |
| 1984 | 580,379 | 13,572 | 0 | 1,333,200 | 9,741,623 | 39,893 | 61,770 | 756,132 | 12,526,569 |
| 1985 | 667,740 | 42,441 | 0 | 1,540,611 | 11,403,920 | 48,100 | 69,320 | 644,383 | 14,416,515 |
| 1986 | 745,447 | 45,362 | 0 | 1,714,679 | 12,925,113 | 55,946 | 77,115 | 1,469,725 | 17,033,387 |
| 1987 | 762,180 | 44,485 | 0 | 1,766,065 | 13,410,817 | 59,314 | 77,108 | 1,503,601 | 17,623,570 |
| 1988 | 827,669 | 46,411 | 0 | 1,916,790 | 14,707,763 | 61,882 | 83,540 | 1,633,680 | 19,277,735 |
| 1989 | 921,621 | 49,728 | 0 | 2,125,033 | 16,312,361 | 66,304 | 92,825 | 1,821,693 | 21,389,565 |
| 1990 | 964,288 | 50,136 | 0 | 1,998,766 | 17,276,959 | 66,848 | 95,259 | 1,980,383 | 22,432,639 |
| 1991 | 1,023,374 | 53,208 | 0 | 2,121,239 | 18,335,590 | 70,944 | 101,096 | 2,101,729 | 23,807,180 |
| 1992 | 1,169,299 | 60,795 | 0 | 2,727,688 | 20,646,125 | 81,061 | 115,511 | 2,401,419 | 27,201,898 |
| 1993 | 1,172,060 | 60,939 | 0 | 2,734,129 | 20,694,874 | 81,252 | 115,784 | 2,407,089 | 27,266,127 |
| 1994 | 1,123,198 | 58,398 | 0 | 2,156,809 | 20,295,455 | 77,865 | 110,957 | 2,306,739 | 26,129,421 |
| 1995 | 1,202,009 | 62,497 | 0 | 2,803,995 | 21,223,694 | 83,328 | 118,743 | 2,468,598 | 27,962,864 |
| 1996 | 534,818 | 69,191 | 0 | 2,756,635 | 19,492,814 | 81,921 | 102,219 | 2,426,904 | 25,464,502 |
| 1997 | 1,208,521 | 67,162 | 0 | 3,047,908 | 22,148,973 | 90,576 | 129,072 | 2,683,338 | 29,375,550 |
| 1998 | 1,216,671 | 77,807 | 0 | 2,726,511 | 22,070,376 | 91,188 | 129,942 | 2,820,148 | 29,132,643 |
| 1999 | 1,258,233 | 69,974 | 0 | 2,819,648 | 22,824,299 | 94,303 | 134,381 | 2,793,715 | 29,994,553 |
| 2000 | 1,278,056 | 70,943 | 0 | 3,223,279 | 21,220,235 | 95,788 | 136,498 | 2,837,730 | 28,862,529 |
| 2001 | 1,278,336 | 71,058 | 0 | 2,864,700 | 21,110,372 | 95,809 | 136,528 | 2,838,352 | 28,395,155 |
| 2002 | 1,393,975 | 72,121 | 0 | 3,272,056 | 21,060,431 | 97,237 | 138,564 | 2,711,156 | 28,745,540 |
| 2003 | 1,364,640 | 70,550 | 0 | 3,203,191 | 20,617,243 | 95,192 | 135,648 | 2,654,103 | 28,140,567 |
| 2004 | 1,494,892 | 77,810 | 0 | 3,508,929 | 22,585,122 | 104,277 | 148,595 | 2,897,005 | 30,816,630 |
| 2005 | 1,480,284 | 77,153 | 0 | 3,474,640 | 22,307,136 | 232,331 | 147,143 | 2,739,621 | 30,458,308 |
| 2006 | 1,541,884 | 80,380 | 0 | 3,619,232 | 23,235,418 | 242,000 | 153,266 | 2,587,428 | 31,459,608 |
| 2007 | 1,563,559 | 81,479 | 0 | 3,670,110 | 23,562,051 | 253,717 | 155,421 | 2,615,486 | 31,901,823 |
| 2008 | 1,599,401 | 83,191 | 0 | 3,754,239 | 24,102,160 | 259,533 | 158,984 | 2,675,439 | 32,632,947 |
| 2009 | 1,747,923 | 90,846 | 0 | 4,102,863 | 26,340,321 | 283,634 | 173,747 | 2,923,885 | 35,663,219 |
| 2010 | 1,917,507 | 113,466 | 0 | 5,126,760 | 32,304,300 | 354,417 | 217,107 | 3,386,937 | 43,420,494 |
| 2011 | 2,110,714 | 123,965 | 0 | 5,643,329 | 35,559,263 | 390,127 | 238,982 | 3,728,203 | 47,794,583 |
| 2012 | 2,203,684 | 129,358 | 0 | 5,891,899 | 37,125,531 | 407,312 | 249,508 | 3,892,417 | 49,899,709 |
| 2013 | 2,332,348 | 136,898 | 0 | 6,235,904 | 39,293,142 | 431,093 | 264,076 | 4,119,681 | 52,813,142 |
| 2014 | 2,125,733 | 129,639 | 0 | 5,917,760 | 37,288,481 | 409,099 | 250,603 | 3,845,708 | 49,967,023 |
| 2015 | 2,713,534 | 176,957 | 0 | 8,053,840 | 50,748,164 | 556,768 | 341,062 | 5,233,858 | 67,824,183 |
| 2016 | 3,243,443 | 211,761 | 0 | 9,626,626 | 60,658,473 | 665,496 | 407,666 | 6,255,949 | 81,069,414 |
| 2017 | 3,123,553 | 203,580 | 0 | 9,270,786 | 58,416,281 | 640,896 | 392,596 | 6,024,702 | 78,072,394 |
| 2018 | 3,150,486 | 205,003 | 0 | 9,350,725 | 58,919,991 | 646,423 | 395,981 | 6,076,651 | 78,745,260 |
| 2019 | 3,177,866 | 206,735 | 0 | 9,431,990 | 59,432,048 | 652,040 | 399,423 | 6,129,462 | 79,429,564 |
| 2020 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2021 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2022 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2023 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2024 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2025 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2026 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2027 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2028 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2029 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2030 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2031 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2032 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2033 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2034 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| 2035 | 3,374,271 | 240,881 | 0 | 10,983,721 | 69,209,686 | 759,313 | 465,136 | 7,137,868 | 92,170,876 |
| TOTAL | 115,540,307 | 7,611,214 | 0 | 329,963,273 | 2,158,794,890 | 20,518,041 | 14,342,353 | 232,700,559 | 2,879,470,637 |

TABLE B-21 Total Delta Water Charge for Each Contractor (in dollars)

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|--------------------|-------------------|--------------------|------------------|--------------------|-------------------|--------------------|-------------------|-------------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] | |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 160,756 | 41,797 | 4,662 | 64,303 | 1,367 | 67,518 | 13,021 | 369,739 | 85,202 | 0 |
| 1973 | 222,207 | 51,552 | 7,279 | 79,994 | 2,577 | 95,104 | 26,131 | 54,908 | 14,338 | 0 |
| 1974 | 279,090 | 59,539 | 10,791 | 93,030 | 3,721 | 121,869 | 39,631 | 465,150 | 114,427 | 0 |
| 1975 | 319,822 | 63,964 | 13,250 | 100,515 | 4,752 | 140,722 | 50,989 | 479,733 | 119,705 | 0 |
| 1976 | 431,018 | 74,449 | 17,045 | 117,550 | 6,269 | 174,366 | 67,591 | 538,772 | 137,142 | 0 |
| 1977 | 469,922 | 79,144 | 19,079 | 122,180 | 6,861 | 189,848 | 77,255 | 504,410 | 139,097 | 0 |
| 1978 | 600,180 | 97,313 | 24,428 | 147,413 | 9,687 | 236,913 | 98,345 | 631,768 | 165,313 | 0 |
| 1979 | 720,173 | 115,033 | 29,836 | 171,470 | 11,889 | 284,640 | 117,285 | 714,457 | 189,760 | 0 |
| 1980 | 857,818 | 134,920 | 35,949 | 210,736 | 14,256 | 337,177 | 138,590 | 811,952 | 215,694 | 84,294 |
| 1981 | 1,355,100 | 218,713 | 57,637 | 343,292 | 22,946 | 534,813 | 211,396 | 1,237,658 | 330,644 | 140,930 |
| 1982 | 1,551,434 | 254,298 | 66,408 | 400,739 | 26,335 | 313,057 | 235,100 | 1,341,923 | 364,482 | 167,929 |
| 1983 | 1,110,994 | 184,283 | 47,759 | 291,367 | 19,002 | 434,517 | 163,925 | 943,775 | 252,096 | 124,148 |
| 1984 | 450,405 | 202,914 | 52,247 | 321,718 | 20,719 | 472,282 | 174,500 | 1,003,760 | 266,383 | 138,982 |
| 1985 | 565,881 | 240,344 | 61,540 | 381,970 | 24,474 | 551,734 | 200,605 | 1,152,983 | 308,405 | 166,935 |
| 1986 | 635,066 | 275,347 | 70,160 | 438,498 | 27,822 | 625,994 | 223,785 | 1,285,253 | 350,799 | 195,056 |
| 1987 | 652,450 | 288,131 | 73,104 | 467,095 | 29,064 | 648,002 | 228,654 | 1,319,729 | 364,779 | 207,598 |
| 1988 | 711,641 | 319,496 | 80,756 | 525,996 | 32,024 | 711,641 | 248,146 | 1,438,752 | 402,232 | 233,604 |
| 1989 | 2,083,593 | 362,565 | 91,333 | 605,021 | 36,301 | 803,932 | 276,155 | 1,607,864 | 454,180 | 268,530 |
| 1990 | 2,207,667 | 386,049 | 96,930 | 636,731 | 38,438 | 848,974 | 289,119 | 1,696,277 | 481,308 | 289,119 |
| 1991 | 2,454,678 | 409,704 | 102,869 | 675,746 | 40,793 | 900,994 | 306,835 | 1,819,725 | 510,800 | 306,835 |
| 1992 | 2,804,695 | 468,125 | 117,538 | 772,102 | 46,610 | 1,029,469 | 350,587 | 2,079,203 | 583,636 | 350,587 |
| 1993 | 2,811,318 | 469,230 | 117,815 | 773,925 | 46,720 | 1,031,900 | 351,415 | 2,084,113 | 585,014 | 351,415 |
| 1994 | 2,694,116 | 449,668 | 112,905 | 741,661 | 44,772 | 988,880 | 336,766 | 1,997,227 | 560,625 | 336,766 |
| 1995 | 2,883,156 | 481,220 | 120,826 | 793,702 | 47,914 | 1,058,269 | 360,394 | 2,137,369 | 599,963 | 360,394 |
| 1996 | 2,834,460 | 473,093 | 118,785 | 780,296 | 47,104 | 1,040,394 | 354,307 | 2,101,269 | 589,830 | 0 |
| 1997 | 3,133,957 | 523,081 | 131,336 | 862,744 | 52,082 | 1,150,325 | 391,745 | 2,323,295 | 652,153 | 0 |
| 1998 | 3,155,093 | 526,609 | 132,222 | 868,562 | 52,433 | 1,728,006 | 394,387 | 2,338,963 | 656,551 | 0 |
| 1999 | 3,262,870 | 544,598 | 136,739 | 898,233 | 54,224 | 1,787,034 | 407,859 | 2,418,863 | 678,979 | 47,152 |
| 2000 | 3,314,278 | 553,178 | 138,893 | 912,384 | 55,078 | 1,815,190 | 510,073 | 2,456,972 | 689,676 | 71,841 |
| 2001 | 3,315,004 | 553,299 | 138,924 | 912,584 | 55,090 | 1,815,587 | 510,185 | 2,457,510 | 689,827 | 95,809 |
| 2002 | 3,437,351 | 561,548 | 140,995 | 926,188 | 55,912 | 1,842,654 | 517,791 | 2,494,146 | 700,112 | 97,237 |
| 2003 | 3,365,016 | 549,731 | 138,028 | 906,698 | 54,735 | 1,803,877 | 506,894 | 2,441,659 | 685,379 | 118,989 |
| 2004 | 3,686,201 | 602,201 | 151,202 | 993,241 | 59,960 | 1,976,053 | 555,277 | 2,674,711 | 750,797 | 156,416 |
| 2005 | 3,650,179 | 596,316 | 149,725 | 983,535 | 59,374 | 1,956,744 | 549,850 | 2,648,574 | 743,459 | 167,795 |
| 2006 | 3,802,076 | 3,256,234 | 155,955 | 1,344,440 | 61,844 | 2,038,171 | 572,732 | 2,758,791 | 774,397 | 188,222 |
| 2007 | 3,855,524 | 3,302,008 | 158,148 | 1,363,339 | 62,714 | 2,066,822 | 580,783 | 2,797,573 | 785,284 | 204,501 |
| 2008 | 3,943,904 | 3,377,700 | 161,772 | 1,394,591 | 64,151 | 2,114,200 | 594,096 | 2,861,701 | 803,284 | 482,528 |
| 2009 | 4,310,140 | 3,691,358 | 176,795 | 1,524,095 | 70,109 | 2,310,528 | 649,264 | 3,127,443 | 877,878 | 527,337 |
| 2010 | 5,385,764 | 5,269,593 | 220,916 | 2,123,453 | 87,605 | 3,153,757 | 811,293 | 3,907,916 | 1,096,959 | 658,937 |
| 2011 | 5,928,431 | 5,800,554 | 243,174 | 2,337,412 | 96,432 | 3,471,528 | 893,038 | 4,301,676 | 1,207,488 | 725,331 |
| 2012 | 6,189,558 | 6,056,050 | 253,886 | 2,440,367 | 100,679 | 3,624,437 | 932,373 | 4,491,150 | 1,260,674 | 757,280 |
| 2013 | 6,550,942 | 6,409,638 | 268,709 | 2,582,850 | 106,557 | 3,836,054 | 986,811 | 4,753,371 | 1,334,279 | 801,494 |
| 2014 | 6,368,143 | 6,082,630 | 255,000 | 2,451,078 | 101,120 | 3,640,346 | 936,466 | 4,510,863 | 1,266,208 | 760,603 |
| 2015 | 8,666,793 | 8,278,222 | 347,045 | 3,335,822 | 137,621 | 5,133,874 | 1,274,493 | 6,139,108 | 1,723,258 | 1,035,151 |
| 2016 | 10,359,280 | 9,894,827 | 414,817 | 3,987,255 | 164,497 | 6,136,437 | 1,523,381 | 7,337,978 | 2,059,784 | 1,237,301 |
| 2017 | 9,976,357 | 9,529,073 | 399,484 | 3,839,869 | 158,416 | 5,909,610 | 1,467,071 | 7,066,735 | 1,983,645 | 1,191,565 |
| 2018 | 10,062,381 | 9,611,239 | 402,928 | 3,872,979 | 159,782 | 5,960,566 | 1,479,721 | 7,127,671 | 2,000,749 | 1,201,839 |
| 2019 | 10,149,831 | 9,694,768 | 406,431 | 3,906,638 | 161,170 | 6,012,368 | 1,492,581 | 7,189,615 | 2,018,138 | 1,212,284 |
| 2020 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2021 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2022 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2023 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2024 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2025 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2026 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2027 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2028 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2029 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2030 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2031 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2032 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2033 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2034 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| 2035 | 11,819,659 | 11,289,731 | 473,296 | 4,549,349 | 187,686 | 7,327,921 | 1,738,137 | 8,372,436 | 2,350,157 | 1,411,727 |
| TOTAL | 346,851,257 | 282,101,042 | 14,246,791 | 127,614,991 | 5,646,978 | 202,173,913 | 51,288,883 | 254,439,029 | 71,227,324 | 38,050,366 |

TABLE B-21 Total Delta Water Charge for Each Contractor (in dollars)

Sheet 4 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | South Bay Area Future Contractor | Grand Total |
|---------------|--------------------------------------|----------------------|-------------------|----------------------|--------------------|-------------------|------------------|-------------------|----------------------------------|-----------------------|
| | Santa Clarita ^a | Metropolitan | Ventura | Total | Yuba City | Butte | Plumas | Total | | |
| 1964 | [30] | [31] | [32] | 0 | 0 | 0 | 0 | 0 | [38] | [39] |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 241,150 |
| 1968 | 13,060 | 0 | 0 | 13,060 | 0 | 1,050 | 875 | 1,925 | 0 | 583,631 |
| 1969 | 17,804 | 0 | 0 | 17,804 | 0 | 1,225 | 929 | 2,154 | 0 | 827,578 |
| 1970 | 37,905 | 0 | 0 | 37,905 | 0 | 3,848 | 1,995 | 5,843 | 0 | 2,160,886 |
| 1971 | 48,508 | 0 | 0 | 48,508 | 0 | 4,546 | 3,186 | 7,732 | 0 | 2,696,792 |
| 1972 | 74,751 | 2,043,211 | 0 | 2,926,327 | 0 | 4,929 | 3,778 | 8,707 | 0 | 7,206,052 |
| 1973 | 107,163 | 2,317,893 | 0 | 2,979,146 | 0 | 7,059 | 4,444 | 11,503 | 0 | 7,456,998 |
| 1974 | 143,266 | 4,231,933 | 0 | 5,562,447 | 0 | 8,336 | 4,931 | 13,267 | 0 | 10,683,514 |
| 1975 | 166,307 | 5,073,286 | 0 | 6,533,045 | 0 | 9,416 | 5,117 | 14,533 | 0 | 12,440,851 |
| 1976 | 207,673 | 6,422,167 | 0 | 8,194,042 | 0 | 7,004 | 5,780 | 12,784 | 0 | 15,299,760 |
| 1977 | 226,502 | 7,104,278 | 0 | 8,974,576 | 0 | 16,917 | 5,827 | 22,744 | 0 | 15,869,924 |
| 1978 | 274,819 | 9,016,389 | 0 | 11,302,568 | 0 | 12,635 | 6,844 | 19,479 | 0 | 19,425,531 |
| 1979 | 320,077 | 10,935,192 | 0 | 13,609,812 | 0 | 16,575 | 7,773 | 24,348 | 0 | 23,095,855 |
| 1980 | 376,845 | 13,102,796 | 12,396 | 16,333,423 | 0 | 19,834 | 8,801 | 28,635 | 0 | 27,557,096 |
| 1981 | 592,631 | 20,910,099 | 36,136 | 25,991,995 | 0 | 21,682 | 13,370 | 35,052 | 0 | 43,335,911 |
| 1982 | 664,082 | 23,998,560 | 57,248 | 29,441,595 | 0 | 16,117 | 14,694 | 30,811 | 0 | 49,027,703 |
| 1983 | 472,521 | 17,203,307 | 50,672 | 21,298,366 | 0 | 15,202 | 10,134 | 25,336 | 0 | 34,186,736 |
| 1984 | 509,602 | 18,766,458 | 64,344 | 22,444,314 | 20,590 | 15,442 | 10,681 | 46,713 | 0 | 37,051,405 |
| 1985 | 591,346 | 22,050,974 | 84,882 | 26,382,073 | 24,050 | 16,976 | 12,166 | 53,192 | 0 | 43,235,458 |
| 1986 | 659,259 | 25,089,658 | 120,965 | 29,997,662 | 31,753 | 18,145 | 13,457 | 63,355 | 0 | 49,817,447 |
| 1987 | 676,176 | 26,095,043 | 148,284 | 31,198,109 | 37,071 | 17,794 | 13,642 | 68,507 | 0 | 51,663,899 |
| 1988 | 742,582 | 28,781,238 | 201,116 | 34,429,224 | 46,722 | 18,565 | 14,852 | 80,139 | 0 | 57,062,086 |
| 1989 | 830,453 | 32,505,376 | 265,215 | 40,190,518 | 61,184 | 19,891 | 16,576 | 97,651 | 0 | 65,617,116 |
| 1990 | 869,029 | 33,616,369 | 334,242 | 41,790,252 | 63,506 | 20,055 | 17,381 | 100,942 | 0 | 68,658,631 |
| 1991 | 961,298 | 35,676,185 | 354,722 | 44,521,184 | 170,267 | 21,283 | 19,155 | 210,705 | 0 | 73,265,317 |
| 1992 | 1,098,371 | 40,763,329 | 405,303 | 50,869,555 | 194,545 | 24,318 | 22,697 | 241,560 | 0 | 83,873,685 |
| 1993 | 1,100,964 | 40,859,579 | 406,260 | 50,989,668 | 195,005 | 24,376 | 23,563 | 242,944 | 0 | 84,237,281 |
| 1994 | 1,055,065 | 39,156,173 | 389,323 | 48,863,947 | 186,875 | 23,360 | 23,360 | 233,595 | 0 | 80,866,329 |
| 1995 | 1,129,097 | 41,903,674 | 416,641 | 52,292,619 | 199,987 | 24,999 | 26,040 | 251,026 | 0 | 86,725,209 |
| 1996 | 1,110,027 | 41,195,923 | 409,604 | 51,055,092 | 196,610 | 24,576 | 26,624 | 247,810 | 0 | 83,007,946 |
| 1997 | 1,227,316 | 45,548,810 | 447,746 | 56,444,590 | 214,918 | 27,173 | 30,223 | 272,314 | 0 | 93,062,361 |
| 1998 | 1,235,593 | 45,855,992 | 450,529 | 57,394,940 | 107,459 | 27,356 | 31,537 | 166,352 | 0 | 93,159,618 |
| 1999 | 1,277,800 | 47,422,430 | 466,491 | 59,403,272 | 226,327 | 28,291 | 33,820 | 288,438 | 0 | 96,994,387 |
| 2000 | 2,279,763 | 48,169,576 | 478,942 | 61,445,844 | 229,892 | 69,207 | 35,708 | 334,807 | 0 | 98,699,723 |
| 2001 | 2,280,263 | 48,180,135 | 479,047 | 61,483,264 | 229,942 | 83,833 | 37,187 | 350,962 | 0 | 98,781,493 |
| 2002 | 2,314,256 | 48,898,394 | 486,188 | 62,472,772 | 233,371 | 85,083 | 39,185 | 357,639 | 0 | 100,275,854 |
| 2003 | 2,265,555 | 47,869,376 | 475,957 | 61,181,894 | 228,460 | 83,293 | 39,743 | 351,496 | 0 | 98,210,650 |
| 2004 | 2,481,798 | 52,438,419 | 521,386 | 67,047,662 | 250,266 | 92,048 | 0 | 342,314 | 0 | 107,579,616 |
| 2005 | 2,457,547 | 51,925,988 | 516,291 | 66,405,377 | 247,820 | 717,290 | 0 | 965,110 | 0 | 107,188,794 |
| 2006 | 2,559,814 | 51,397,939 | 537,776 | 69,448,391 | 258,133 | 32,606 | 8,699 | 299,438 | 0 | 110,967,023 |
| 2007 | 2,595,798 | 52,120,469 | 545,336 | 70,438,299 | 268,738 | 33,950 | 19,600 | 322,288 | 0 | 112,569,420 |
| 2008 | 2,655,301 | 53,315,217 | 557,837 | 72,326,282 | 274,736 | 794,785 | 56,138 | 1,125,659 | 0 | 116,229,451 |
| 2009 | 2,901,877 | 58,266,144 | 609,638 | 79,042,606 | 292,626 | 844,842 | 63,417 | 1,200,885 | 0 | 127,004,742 |
| 2010 | 3,626,059 | 72,806,845 | 761,778 | 99,910,875 | 365,653 | 1,054,033 | 81,825 | 1,501,511 | 0 | 158,911,895 |
| 2011 | 3,991,418 | 80,142,822 | 838,533 | 109,977,837 | 414,001 | 1,185,940 | 92,561 | 1,692,502 | 0 | 174,964,623 |
| 2012 | 4,167,227 | 83,672,846 | 875,468 | 114,821,995 | 424,826 | 1,216,951 | 100,037 | 1,741,814 | 0 | 182,648,119 |
| 2013 | 4,410,535 | 88,558,170 | 926,583 | 121,525,993 | 444,760 | 1,274,052 | 109,975 | 1,828,787 | 0 | 193,299,795 |
| 2014 | 4,185,518 | 84,040,101 | 879,310 | 115,477,386 | 431,273 | 1,235,416 | 108,033 | 1,774,722 | 0 | 183,479,164 |
| 2015 | 5,696,327 | 114,375,290 | 1,196,707 | 157,339,711 | 574,420 | 1,645,472 | 153,363 | 2,373,255 | 0 | 249,669,412 |
| 2016 | 6,808,728 | 136,710,965 | 1,430,405 | 188,065,655 | 686,595 | 1,966,807 | 190,584 | 2,843,986 | 0 | 298,433,393 |
| 2017 | 6,557,049 | 131,657,554 | 1,377,531 | 181,113,959 | 703,970 | 2,016,581 | 183,222 | 2,903,773 | 0 | 287,566,604 |
| 2018 | 6,613,589 | 132,792,806 | 1,389,410 | 182,675,660 | 671,729 | 1,924,226 | 184,502 | 2,780,457 | 0 | 289,897,532 |
| 2019 | 6,671,066 | 133,946,873 | 1,401,484 | 184,263,247 | 687,783 | 1,970,211 | 186,062 | 2,844,056 | 0 | 292,456,341 |
| 2020 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2021 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2022 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2023 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2024 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2025 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2026 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2027 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2028 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2029 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2030 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2031 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2032 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2033 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2034 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| 2035 | 7,768,576 | 155,983,533 | 1,632,054 | 214,904,262 | 783,386 | 2,244,074 | 216,793 | 3,244,253 | 0 | 340,503,080 |
| TOTAL | 220,634,596 | 4,754,668,779 | 47,520,590 | 6,416,464,539 | 22,430,039 | 54,750,785 | 5,592,781 | 82,773,605 | 0 | 10,257,277,067 |

^a Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-22 Water System Revenue Bond Surcharge for Each Contractor^a (in dollars)

Sheet 1 of 4

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA | | | | CENTRAL COASTAL AREA | | |
|---------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|----------------------|-------------------|-------------------|
| | Napa | Solano | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| [1] | [2] | [3] | 0 | [4] | [5] | [6] | [7] | [8] | [9] | [10] |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 29,131 | 40,505 | 69,636 | 25,436 | 30,176 | 100,035 | 155,647 | 13,126 | 24,392 | 37,518 |
| 1989 | 48,804 | 69,621 | 118,425 | 43,343 | 51,681 | 170,303 | 265,327 | 26,828 | 49,634 | 76,462 |
| 1990 | 41,166 | 60,482 | 101,648 | 38,407 | 51,185 | 149,440 | 239,032 | 27,956 | 51,795 | 79,751 |
| 1991 | 63,389 | 92,401 | 155,790 | 62,470 | 81,991 | 235,712 | 380,173 | 44,887 | 83,709 | 128,596 |
| 1992 | 84,320 | 126,227 | 210,547 | 89,247 | 115,208 | 325,629 | 530,084 | 61,137 | 113,925 | 175,062 |
| 1993 | 90,152 | 137,473 | 227,625 | 98,432 | 125,174 | 347,457 | 571,063 | 67,725 | 126,662 | 194,387 |
| 1994 | 91,785 | 141,222 | 233,007 | 102,021 | 126,216 | 352,415 | 580,652 | 81,420 | 159,156 | 240,576 |
| 1995 | 108,311 | 181,787 | 290,098 | 126,001 | 149,377 | 416,956 | 692,334 | 131,675 | 270,726 | 402,401 |
| 1996 | 132,305 | 232,343 | 364,648 | 158,514 | 180,787 | 505,042 | 844,343 | 242,654 | 534,449 | 777,103 |
| 1997 | 135,556 | 237,492 | 373,048 | 171,263 | 187,162 | 522,127 | 880,552 | 141,810 | 846,617 | 988,427 |
| 1998 | 130,346 | 228,366 | 358,712 | 164,682 | 179,971 | 502,065 | 846,718 | 136,361 | 814,087 | 950,448 |
| 1999 | 182,507 | 316,416 | 498,923 | 227,072 | 248,031 | 691,830 | 1,166,933 | 188,835 | 1,124,110 | 1,312,945 |
| 2000 | 238,571 | 364,418 | 602,989 | 260,766 | 284,875 | 794,730 | 1,340,371 | 218,359 | 1,364,019 | 1,582,378 |
| 2001 | 234,773 | 358,616 | 593,389 | 561,965 | 280,341 | 782,078 | 1,624,384 | 214,883 | 1,342,304 | 1,557,187 |
| 2002 | 257,520 | 391,851 | 649,371 | 610,230 | 288,977 | 806,174 | 1,705,381 | 221,503 | 1,383,661 | 1,605,164 |
| 2003 | 268,151 | 408,027 | 676,178 | 635,422 | 300,907 | 839,455 | 1,775,784 | 230,647 | 1,440,782 | 1,671,429 |
| 2004 | 268,425 | 408,444 | 676,869 | 636,070 | 301,214 | 840,312 | 1,777,596 | 230,883 | 1,442,252 | 1,673,135 |
| 2005 | 253,413 | 385,602 | 639,015 | 610,756 | 284,369 | 793,318 | 1,688,443 | 217,970 | 1,361,594 | 1,579,564 |
| 2006 | 274,219 | 417,261 | 691,480 | 660,900 | 307,716 | 858,451 | 1,827,067 | 235,866 | 1,473,385 | 1,709,251 |
| 2007 | 177,891 | 270,066 | 447,957 | 441,730 | 197,505 | 550,975 | 1,190,210 | 152,478 | 975,872 | 1,128,350 |
| 2008 | 254,590 | 386,862 | 641,452 | 773,686 | 288,283 | 803,089 | 1,865,058 | 223,659 | 1,369,892 | 1,593,551 |
| 2009 | 285,324 | 434,158 | 719,482 | 687,665 | 320,178 | 893,215 | 1,901,058 | 245,418 | 1,533,052 | 1,778,470 |
| 2010 | 273,015 | 415,428 | 688,443 | 657,998 | 306,365 | 854,681 | 1,819,044 | 234,831 | 1,466,914 | 1,701,745 |
| 2011 | 294,866 | 448,677 | 743,543 | 710,662 | 330,884 | 923,085 | 1,964,631 | 253,625 | 1,584,318 | 1,837,943 |
| 2012 | 383,092 | 455,983 | 839,075 | 753,264 | 330,355 | 933,048 | 2,016,667 | 229,311 | 1,456,050 | 1,685,361 |
| 2013 | 416,223 | 495,679 | 911,902 | 820,192 | 360,039 | 1,013,496 | 2,193,727 | 249,613 | 1,583,700 | 1,833,313 |
| 2014 | 454,438 | 541,511 | 995,949 | 894,353 | 392,064 | 1,103,675 | 2,390,092 | 271,760 | 1,722,805 | 1,994,565 |
| 2015 | 436,482 | 520,709 | 957,191 | 854,027 | 375,378 | 1,053,325 | 2,282,730 | 260,767 | 1,649,215 | 1,909,982 |
| 2016 | 435,356 | 520,887 | 956,243 | 851,748 | 374,332 | 1,047,728 | 2,273,808 | 260,376 | 1,644,453 | 1,904,829 |
| 2017 | 401,057 | 480,649 | 881,706 | 843,557 | 345,672 | 966,381 | 2,155,610 | 240,390 | 1,517,572 | 1,757,962 |
| 2018 | 776,986 | 934,577 | 1,711,563 | 1,522,713 | 669,079 | 1,869,953 | 4,061,745 | 465,832 | 2,954,217 | 3,420,049 |
| 2019 | 1,037,357 | 1,250,754 | 2,288,111 | 2,037,780 | 897,587 | 2,508,924 | 5,444,291 | 622,710 | 3,934,711 | 4,557,421 |
| 2020 | 763,852 | 921,954 | 1,685,806 | 1,456,947 | 658,951 | 1,839,575 | 3,955,473 | 459,788 | 2,909,838 | 3,369,626 |
| 2021 | 792,275 | 956,260 | 1,748,535 | 1,511,161 | 683,471 | 1,908,027 | 4,102,659 | 476,897 | 3,018,115 | 3,495,012 |
| 2022 | 779,591 | 940,951 | 1,720,542 | 1,486,968 | 672,529 | 1,877,480 | 4,036,977 | 449,262 | 2,969,796 | 3,439,058 |
| 2023 | 792,280 | 956,266 | 1,748,546 | 1,511,169 | 683,475 | 1,908,037 | 4,102,681 | 476,900 | 3,018,131 | 3,495,031 |
| 2024 | 774,991 | 935,398 | 1,710,389 | 1,478,192 | 668,560 | 1,866,400 | 4,013,152 | 466,493 | 2,952,269 | 3,418,762 |
| 2025 | 741,921 | 895,483 | 1,637,404 | 1,415,116 | 640,032 | 1,786,758 | 3,841,906 | 446,587 | 2,826,293 | 3,272,880 |
| 2026 | 709,677 | 856,566 | 1,566,243 | 1,353,615 | 612,216 | 1,709,106 | 3,674,937 | 427,178 | 2,703,462 | 3,130,640 |
| 2027 | 743,810 | 897,764 | 1,641,574 | 1,418,720 | 641,662 | 1,791,308 | 3,851,690 | 447,724 | 2,833,490 | 3,281,214 |
| 2028 | 656,473 | 792,349 | 1,448,822 | 1,252,135 | 566,318 | 1,580,975 | 3,399,428 | 395,153 | 2,500,785 | 2,895,938 |
| 2029 | 678,560 | 819,009 | 1,497,569 | 1,294,265 | 585,373 | 1,634,169 | 3,513,807 | 408,448 | 2,584,926 | 2,993,374 |
| 2030 | 538,132 | 649,514 | 1,187,646 | 1,026,415 | 464,229 | 1,295,976 | 2,786,620 | 323,919 | 2,049,973 | 2,373,892 |
| 2031 | 537,564 | 648,829 | 1,186,393 | 1,025,332 | 463,739 | 1,294,608 | 2,783,679 | 323,578 | 2,047,809 | 2,371,387 |
| 2032 | 538,098 | 649,474 | 1,187,572 | 1,026,351 | 464,200 | 1,295,895 | 2,786,446 | 323,899 | 2,049,845 | 2,373,744 |
| 2033 | 537,470 | 648,715 | 1,186,185 | 1,025,152 | 463,658 | 1,294,381 | 2,783,191 | 323,521 | 2,047,451 | 2,370,972 |
| 2034 | 537,411 | 648,644 | 1,186,055 | 1,025,041 | 463,607 | 1,294,240 | 2,782,888 | 323,486 | 2,047,228 | 2,370,714 |
| 2035 | 536,711 | 647,799 | 1,184,510 | 1,023,705 | 463,003 | 1,292,553 | 2,779,261 | 323,064 | 2,044,559 | 2,367,623 |
| TOTAL | 19,218,337 | 24,619,469 | 43,837,806 | 37,462,656 | 17,958,102 | 50,224,592 | 105,645,350 | 12,861,192 | 78,004,000 | 90,865,192 |

^a 1988 through 2018 charges are debt service only and do not include bond cover; 2019 charges and after include bond cover.

TABLE B-22 Water System Revenue Bond Surcharge for Each Contractor^a (in dollars)

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | | |
|---------------|-------------------------|----------------|--------------------------------------|--------------------------|--------------------|------------------|------------------|-------------------|--------------------|
| | Dudley Ridge | Empire | Future Contractor San Joaquin Valley | Kern | | Kings | Oak Flat | Tulare | Total |
| | | | | Municipal and Industrial | Agricultural | | | | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 33,986 | 1,657 | 0 | 67,288 | 726,501 | 2,228 | 2,851 | 66,748 | 901,259 |
| 1989 | 59,273 | 2,785 | 0 | 116,689 | 1,251,452 | 3,733 | 4,927 | 116,736 | 1,555,595 |
| 1990 | 53,349 | 2,419 | 0 | 287,811 | 947,351 | 3,248 | 4,367 | 109,118 | 1,407,663 |
| 1991 | 82,252 | 3,731 | 0 | 359,380 | 1,564,983 | 5,035 | 6,771 | 168,217 | 2,190,369 |
| 1992 | 112,566 | 5,127 | 0 | 452,691 | 2,153,423 | 6,927 | 9,285 | 230,217 | 2,970,236 |
| 1993 | 119,670 | 5,459 | 0 | 272,449 | 2,491,672 | 7,381 | 9,894 | 244,813 | 3,151,338 |
| 1994 | 118,265 | 5,379 | 0 | 244,671 | 2,485,820 | 7,300 | 9,766 | 241,933 | 3,113,134 |
| 1995 | 139,226 | 6,340 | 0 | 317,885 | 2,894,181 | 8,599 | 11,490 | 284,798 | 3,662,519 |
| 1996 | 169,333 | 7,703 | 0 | 354,341 | 2,722,240 | 10,461 | 13,978 | 346,367 | 3,624,423 |
| 1997 | 165,364 | 7,980 | 0 | 366,285 | 2,673,847 | 10,826 | 14,465 | 357,986 | 3,596,753 |
| 1998 | 159,011 | 7,672 | 0 | 352,211 | 2,571,110 | 10,410 | 13,909 | 344,232 | 3,458,555 |
| 1999 | 218,784 | 10,373 | 0 | 485,897 | 3,371,115 | 14,376 | 19,166 | 476,017 | 4,595,728 |
| 2000 | 251,339 | 11,735 | 0 | 557,296 | 3,620,348 | 16,500 | 21,990 | 546,406 | 5,025,614 |
| 2001 | 247,338 | 11,547 | 0 | 548,424 | 3,461,158 | 16,238 | 21,640 | 537,707 | 4,844,052 |
| 2002 | 273,542 | 11,904 | 0 | 565,321 | 3,496,023 | 16,737 | 22,306 | 521,659 | 4,907,492 |
| 2003 | 284,834 | 12,395 | 0 | 588,659 | 3,640,346 | 17,428 | 23,227 | 543,193 | 5,110,082 |
| 2004 | 285,125 | 12,408 | 0 | 589,259 | 3,644,059 | 17,446 | 23,251 | 543,748 | 5,115,296 |
| 2005 | 269,179 | 11,714 | 0 | 556,305 | 3,431,851 | 39,485 | 21,951 | 488,483 | 4,818,968 |
| 2006 | 291,279 | 12,676 | 0 | 601,979 | 3,713,614 | 42,726 | 23,753 | 528,589 | 5,214,616 |
| 2007 | 187,144 | 8,113 | 0 | 383,463 | 2,314,841 | 34,088 | 15,230 | 285,915 | 3,228,794 |
| 2008 | 271,383 | 11,832 | 0 | 563,171 | 3,478,837 | 41,080 | 22,094 | 445,805 | 4,834,202 |
| 2009 | 303,076 | 13,189 | 0 | 626,357 | 3,864,004 | 46,037 | 24,715 | 497,108 | 5,374,486 |
| 2010 | 257,209 | 12,620 | 0 | 599,335 | 3,631,924 | 44,051 | 23,648 | 440,950 | 5,009,737 |
| 2011 | 277,794 | 13,630 | 0 | 647,304 | 3,922,606 | 47,577 | 25,542 | 476,242 | 5,410,695 |
| 2012 | 271,192 | 12,709 | 0 | 666,489 | 5,450,478 | 40,125 | 23,964 | 510,822 | 6,975,779 |
| 2013 | 286,050 | 13,814 | 0 | 724,170 | 5,680,875 | 43,592 | 26,041 | 521,112 | 7,295,654 |
| 2014 | 302,692 | 15,056 | 0 | 790,204 | 6,189,586 | 47,573 | 28,404 | 561,312 | 7,934,827 |
| 2015 | 278,438 | 14,506 | 0 | 758,484 | 5,949,402 | 45,814 | 27,366 | 540,099 | 7,614,109 |
| 2016 | 278,950 | 14,593 | 0 | 759,888 | 5,962,338 | 46,008 | 27,523 | 541,874 | 7,631,174 |
| 2017 | 258,290 | 13,525 | 0 | 701,525 | 5,532,979 | 43,005 | 25,472 | 506,783 | 7,081,579 |
| 2018 | 500,847 | 26,202 | 0 | 1,357,207 | 10,705,138 | 82,310 | 49,399 | 973,302 | 13,694,405 |
| 2019 | 675,964 | 35,286 | 0 | 1,823,266 | 14,442,630 | 110,548 | 66,447 | 1,314,843 | 18,458,984 |
| 2020 | 495,284 | 26,006 | 0 | 1,342,408 | 10,585,089 | 81,600 | 49,021 | 964,265 | 13,543,673 |
| 2021 | 513,714 | 26,974 | 0 | 1,392,360 | 10,978,966 | 84,636 | 50,845 | 1,000,146 | 14,047,641 |
| 2022 | 505,489 | 26,542 | 0 | 1,370,069 | 10,803,197 | 83,281 | 50,031 | 984,134 | 13,822,743 |
| 2023 | 513,717 | 26,974 | 0 | 1,392,367 | 10,979,025 | 84,637 | 50,845 | 1,000,151 | 14,047,716 |
| 2024 | 502,506 | 26,385 | 0 | 1,361,983 | 10,739,442 | 82,790 | 49,736 | 978,326 | 13,741,168 |
| 2025 | 481,064 | 25,259 | 0 | 1,303,866 | 10,281,176 | 79,257 | 47,614 | 936,580 | 13,154,816 |
| 2026 | 460,157 | 24,162 | 0 | 1,247,200 | 9,834,357 | 75,813 | 45,544 | 895,876 | 12,583,109 |
| 2027 | 482,289 | 25,324 | 0 | 1,307,186 | 10,307,359 | 79,459 | 47,735 | 938,965 | 13,188,317 |
| 2028 | 425,659 | 22,350 | 0 | 1,153,698 | 9,097,080 | 70,129 | 42,130 | 828,713 | 11,639,759 |
| 2029 | 439,981 | 23,102 | 0 | 1,192,515 | 9,403,161 | 72,489 | 43,547 | 856,595 | 12,031,390 |
| 2030 | 348,926 | 18,321 | 0 | 945,723 | 7,457,167 | 57,487 | 34,535 | 679,322 | 9,541,481 |
| 2031 | 348,558 | 18,302 | 0 | 944,725 | 7,449,296 | 57,426 | 34,499 | 678,605 | 9,531,411 |
| 2032 | 348,905 | 18,320 | 0 | 945,664 | 7,456,702 | 57,483 | 34,533 | 679,280 | 9,540,887 |
| 2033 | 348,497 | 18,299 | 0 | 944,559 | 7,447,991 | 57,416 | 34,493 | 678,486 | 9,529,741 |
| 2034 | 348,459 | 18,297 | 0 | 944,456 | 7,447,179 | 57,410 | 34,489 | 678,412 | 9,528,702 |
| 2035 | 348,005 | 18,273 | 0 | 943,225 | 7,437,474 | 57,335 | 34,444 | 677,528 | 9,516,284 |
| TOTAL | 14,393,954 | 718,969 | 0 | 36,817,708 | 275,681,393 | 2,067,540 | 1,348,873 | 27,768,518 | 358,796,955 |

^a 1988 through 2018 charges are debt service only and do not include bond cover; 2019 charges and after include bond cover.

TABLE B-22 Water System Revenue Bond Surcharge for Each Contractor^a (in dollars)

Sheet 3 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|-------------------|-------------------|-------------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 64,266 | 27,032 | 7,656 | 44,492 | 2,154 | 55,996 | 16,240 | 151,182 | 39,907 | 24,019 |
| 1989 | 205,668 | 46,993 | 13,263 | 78,104 | 3,763 | 97,138 | 27,981 | 259,860 | 69,104 | 42,040 |
| 1990 | 185,010 | 42,449 | 11,905 | 69,970 | 3,385 | 87,327 | 24,956 | 231,650 | 61,851 | 38,023 |
| 1991 | 296,854 | 65,947 | 18,548 | 108,704 | 5,236 | 135,623 | 38,641 | 363,310 | 96,172 | 59,122 |
| 1992 | 402,015 | 89,358 | 25,192 | 147,297 | 7,053 | 183,813 | 52,160 | 491,537 | 130,372 | 80,131 |
| 1993 | 424,871 | 93,981 | 26,566 | 154,919 | 7,437 | 193,361 | 55,045 | 517,379 | 137,298 | 84,371 |
| 1994 | 424,023 | 94,502 | 26,865 | 155,776 | 7,431 | 194,191 | 54,968 | 525,394 | 139,422 | 85,698 |
| 1995 | 500,084 | 111,730 | 31,822 | 184,170 | 8,769 | 229,530 | 64,852 | 623,848 | 165,593 | 101,792 |
| 1996 | 606,388 | 135,428 | 38,634 | 223,237 | 10,640 | 278,178 | 78,696 | 760,333 | 201,821 | 124,074 |
| 1997 | 626,151 | 139,565 | 39,802 | 230,058 | 10,972 | 286,779 | 81,146 | 808,482 | 207,472 | 28,259 |
| 1998 | 602,091 | 134,202 | 38,273 | 221,218 | 10,550 | 275,761 | 78,028 | 777,418 | 199,501 | 27,174 |
| 1999 | 826,108 | 184,524 | 52,650 | 304,166 | 14,475 | 642,815 | 107,060 | 1,041,566 | 277,200 | 53,545 |
| 2000 | 940,325 | 210,453 | 60,212 | 346,906 | 16,486 | 736,157 | 121,898 | 1,191,538 | 316,860 | 70,117 |
| 2001 | 925,355 | 207,102 | 59,254 | 341,384 | 16,224 | 724,438 | 135,581 | 1,172,568 | 311,816 | 69,001 |
| 2002 | 974,814 | 213,483 | 61,079 | 351,902 | 16,724 | 746,758 | 139,071 | 1,208,696 | 321,423 | 71,126 |
| 2003 | 1,015,056 | 222,296 | 63,601 | 366,429 | 17,415 | 777,586 | 144,812 | 1,258,593 | 334,692 | 74,063 |
| 2004 | 1,016,092 | 222,523 | 63,666 | 366,803 | 17,432 | 778,379 | 144,960 | 1,259,877 | 335,033 | 74,138 |
| 2005 | 959,268 | 210,078 | 60,105 | 346,290 | 16,457 | 734,849 | 136,853 | 1,189,420 | 316,297 | 69,992 |
| 2006 | 1,038,026 | 1,213,645 | 65,040 | 501,286 | 17,809 | 795,182 | 148,089 | 1,287,074 | 342,266 | 75,738 |
| 2007 | 666,215 | 1,036,396 | 41,723 | 354,543 | 11,413 | 520,847 | 95,550 | 825,932 | 219,727 | 45,192 |
| 2008 | 999,433 | 1,157,440 | 61,924 | 478,719 | 17,175 | 757,686 | 144,009 | 1,367,672 | 325,069 | 250,631 |
| 2009 | 1,080,062 | 1,262,793 | 67,674 | 521,586 | 18,529 | 827,383 | 154,087 | 1,339,196 | 356,126 | 78,805 |
| 2010 | 1,033,467 | 1,283,384 | 64,754 | 524,108 | 17,731 | 824,481 | 147,438 | 1,281,421 | 340,762 | 75,405 |
| 2011 | 1,116,181 | 1,386,101 | 69,937 | 566,054 | 19,149 | 890,469 | 159,239 | 1,383,979 | 368,035 | 81,440 |
| 2012 | 1,090,934 | 1,073,158 | 67,263 | 523,945 | 18,453 | 731,452 | 154,732 | 1,323,822 | 351,925 | 215,055 |
| 2013 | 1,186,869 | 1,172,413 | 73,154 | 570,092 | 20,052 | 795,549 | 168,130 | 1,438,513 | 382,372 | 233,662 |
| 2014 | 1,345,233 | 1,276,763 | 79,660 | 621,395 | 21,838 | 866,523 | 183,142 | 1,568,301 | 416,868 | 254,740 |
| 2015 | 1,288,246 | 1,228,651 | 76,255 | 595,985 | 20,924 | 868,542 | 175,577 | 1,500,551 | 398,955 | 243,775 |
| 2016 | 1,287,598 | 1,232,122 | 76,009 | 595,354 | 20,895 | 867,266 | 175,457 | 1,495,424 | 397,690 | 242,979 |
| 2017 | 1,186,800 | 1,209,316 | 70,025 | 549,319 | 19,257 | 799,852 | 161,746 | 1,377,995 | 366,493 | 223,908 |
| 2018 | 2,295,675 | 2,219,292 | 135,462 | 1,064,379 | 37,239 | 1,548,497 | 312,825 | 2,664,966 | 708,792 | 433,001 |
| 2019 | 3,072,197 | 2,964,868 | 181,204 | 1,423,133 | 49,834 | 2,071,831 | 418,552 | 3,563,713 | 947,829 | 579,030 |
| 2020 | 2,248,244 | 2,177,372 | 132,123 | 1,040,704 | 36,415 | 1,577,205 | 306,181 | 2,597,255 | 691,120 | 422,091 |
| 2021 | 2,331,902 | 2,258,393 | 137,039 | 1,079,429 | 37,770 | 1,635,894 | 317,574 | 2,693,900 | 716,837 | 437,797 |
| 2022 | 2,294,570 | 2,222,237 | 134,845 | 1,062,148 | 37,165 | 1,609,704 | 312,490 | 2,650,772 | 705,361 | 430,788 |
| 2023 | 2,331,915 | 2,258,405 | 137,040 | 1,079,435 | 37,770 | 1,635,902 | 317,576 | 2,693,915 | 716,841 | 437,800 |
| 2024 | 2,281,028 | 2,209,123 | 134,050 | 1,055,880 | 36,946 | 1,600,204 | 310,646 | 2,635,128 | 701,198 | 428,246 |
| 2025 | 2,183,694 | 2,114,857 | 128,330 | 1,010,824 | 35,369 | 1,531,921 | 297,390 | 2,522,684 | 671,277 | 409,972 |
| 2026 | 2,088,791 | 2,022,945 | 122,752 | 966,894 | 33,832 | 1,465,344 | 284,466 | 2,413,048 | 642,103 | 392,155 |
| 2027 | 2,189,255 | 2,120,242 | 128,656 | 1,013,398 | 35,460 | 1,535,823 | 298,147 | 2,529,109 | 672,986 | 411,016 |
| 2028 | 1,932,195 | 1,871,286 | 113,550 | 894,406 | 31,296 | 1,355,488 | 263,139 | 2,232,144 | 593,965 | 362,755 |
| 2029 | 1,997,206 | 1,934,247 | 117,370 | 924,499 | 32,349 | 1,401,095 | 271,993 | 2,307,246 | 613,950 | 374,960 |
| 2030 | 1,583,882 | 1,533,953 | 93,080 | 733,173 | 25,654 | 1,111,137 | 215,704 | 1,829,759 | 486,892 | 297,362 |
| 2031 | 1,582,210 | 1,532,334 | 92,982 | 732,399 | 25,627 | 1,109,964 | 215,476 | 1,827,828 | 486,378 | 297,048 |
| 2032 | 1,583,783 | 1,533,857 | 93,075 | 733,128 | 25,653 | 1,111,067 | 215,690 | 1,829,645 | 486,862 | 297,343 |
| 2033 | 1,581,933 | 1,532,065 | 92,966 | 732,271 | 25,623 | 1,109,769 | 215,438 | 1,827,508 | 486,293 | 296,996 |
| 2034 | 1,581,761 | 1,531,898 | 92,956 | 732,191 | 25,620 | 1,109,649 | 215,415 | 1,827,309 | 486,240 | 296,964 |
| 2035 | 1,579,699 | 1,529,902 | 92,834 | 731,237 | 25,587 | 1,108,202 | 215,134 | 1,824,927 | 485,606 | 296,577 |
| TOTAL | 61,053,443 | 52,551,104 | 3,672,825 | 27,453,739 | 1,011,037 | 42,332,607 | 8,373,980 | 72,493,387 | 19,228,652 | 10,099,916 |

^a 1988 through 2018 charges are debt service only and do not include bond cover; 2019 charges and after include bond cover.

TABLE B-22 Water System Revenue Bond Surcharge for Each Contractor^a (in dollars)

Sheet 4 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | South Bay Area Future Contractor | Grand Total |
|---------------|--------------------------------------|----------------------|-------------------|----------------------|--------------------|------------------|----------------|------------------|----------------------------------|----------------------|
| | Santa Clarita ^b | Metropolitan | Ventura | Total | Yuba City | Butte | Plumas | Total | | |
| 1971 | 0 | [30] | [31] | [32] | 0 | [33] | 0 | [34] | 0 | [38] 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [35] | 0 | [39] 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [36] | 0 | [39] 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [37] | 0 | [39] 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [38] | 0 | [39] 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [39] | 0 | [39] 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [40] | 0 | [39] 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [41] | 0 | [39] 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [42] | 0 | [39] 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [43] | 0 | [39] 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [44] | 0 | [39] 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [45] | 0 | [39] 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [46] | 0 | [39] 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [47] | 0 | [39] 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [48] | 0 | [39] 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [49] | 0 | [39] 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | [50] | 0 | [39] 0 |
| 1988 | 57,111 | 2,642,354 | 18,118 | 3,150,527 | 1,336 | 552 | 853 | 2,741 | 0 | 4,317,328 |
| 1989 | 98,720 | 4,587,641 | 34,565 | 5,564,840 | 0 | 918 | 1,454 | 2,372 | 0 | 7,583,021 |
| 1990 | 87,808 | 4,037,980 | 34,994 | 4,917,308 | 2,535 | 800 | 1,283 | 4,618 | 0 | 6,750,020 |
| 1991 | 140,371 | 6,259,893 | 54,115 | 7,642,536 | 9,945 | 1,243 | 2,027 | 13,215 | 0 | 10,510,679 |
| 1992 | 234,421 | 8,435,312 | 72,892 | 10,351,553 | 13,671 | 1,710 | 2,806 | 18,187 | 0 | 14,255,669 |
| 1993 | 247,076 | 8,885,273 | 76,858 | 10,904,435 | 14,608 | 1,827 | 3,026 | 19,461 | 0 | 15,068,309 |
| 1994 | 247,222 | 8,926,755 | 76,794 | 10,959,041 | 14,409 | 1,801 | 3,070 | 19,280 | 0 | 15,145,690 |
| 1995 | 290,998 | 10,539,430 | 90,436 | 12,943,054 | 16,958 | 2,119 | 3,705 | 22,782 | 0 | 18,013,188 |
| 1996 | 353,132 | 12,810,359 | 109,783 | 15,730,703 | 20,640 | 2,579 | 4,620 | 27,839 | 0 | 21,369,059 |
| 1997 | 362,776 | 13,168,230 | 112,960 | 16,102,652 | 21,382 | 2,674 | 4,872 | 28,928 | 0 | 21,970,360 |
| 1998 | 348,838 | 12,662,268 | 108,619 | 15,483,941 | 20,562 | 2,571 | 4,685 | 27,818 | 0 | 21,126,192 |
| 1999 | 479,470 | 17,454,651 | 149,123 | 21,587,353 | 28,348 | 3,543 | 6,765 | 38,656 | 0 | 29,200,538 |
| 2000 | 1,150,965 | 19,805,800 | 168,259 | 25,135,976 | 32,271 | 9,794 | 7,996 | 50,061 | 0 | 33,737,389 |
| 2001 | 1,132,642 | 19,490,499 | 165,580 | 24,751,444 | 31,757 | 9,638 | 7,869 | 49,264 | 0 | 33,419,720 |
| 2002 | 1,167,539 | 20,091,004 | 170,682 | 25,534,301 | 32,736 | 9,935 | 8,112 | 50,783 | 0 | 34,452,492 |
| 2003 | 1,215,738 | 20,920,403 | 177,728 | 26,588,412 | 34,087 | 10,345 | 8,446 | 52,878 | 0 | 35,874,763 |
| 2004 | 1,216,978 | 20,941,743 | 177,910 | 26,615,534 | 34,121 | 10,356 | 8,456 | 52,933 | 0 | 35,911,363 |
| 2005 | 1,148,920 | 19,770,593 | 167,960 | 25,127,082 | 32,213 | 9,776 | 7,983 | 49,972 | 0 | 33,903,044 |
| 2006 | 1,243,248 | 20,330,228 | 181,750 | 27,239,381 | 34,858 | 10,579 | 8,638 | 54,075 | 0 | 36,735,870 |
| 2007 | 820,799 | 12,752,863 | 116,415 | 17,507,615 | 22,362 | 7,007 | 5,579 | 34,948 | 0 | 23,537,874 |
| 2008 | 1,167,531 | 19,303,204 | 173,561 | 26,204,054 | 32,180 | 9,751 | 7,973 | 49,904 | 0 | 35,188,221 |
| 2009 | 1,293,596 | 21,153,536 | 189,110 | 28,342,483 | 36,270 | 11,008 | 8,988 | 56,266 | 0 | 38,172,245 |
| 2010 | 1,237,788 | 20,240,944 | 180,952 | 27,252,635 | 34,705 | 10,532 | 8,600 | 53,837 | 0 | 36,525,441 |
| 2011 | 1,336,855 | 21,860,932 | 195,434 | 29,433,805 | 37,482 | 11,375 | 9,289 | 58,146 | 0 | 39,448,763 |
| 2012 | 915,850 | 22,686,017 | 191,051 | 29,343,657 | 35,313 | 101,156 | 12,344 | 148,813 | 0 | 41,009,352 |
| 2013 | 996,745 | 23,602,562 | 207,636 | 30,847,749 | 38,359 | 109,882 | 13,628 | 161,869 | 0 | 43,244,214 |
| 2014 | 1,085,473 | 25,718,327 | 226,122 | 33,664,385 | 41,861 | 119,916 | 15,370 | 177,147 | 0 | 47,156,965 |
| 2015 | 1,039,717 | 24,614,514 | 216,476 | 32,268,168 | 40,374 | 115,656 | 15,317 | 171,347 | 0 | 45,203,527 |
| 2016 | 1,037,955 | 24,546,439 | 215,981 | 32,191,169 | 40,634 | 116,401 | 15,914 | 172,949 | 0 | 45,130,172 |
| 2017 | 957,063 | 22,620,590 | 198,956 | 29,741,320 | 37,618 | 107,762 | 14,712 | 160,092 | 0 | 41,778,269 |
| 2018 | 1,849,307 | 43,719,334 | 384,082 | 57,372,851 | 72,958 | 208,994 | 28,526 | 310,478 | 0 | 80,571,091 |
| 2019 | 2,472,366 | 58,478,538 | 513,433 | 76,736,528 | 98,105 | 281,030 | 38,239 | 417,374 | 0 | 107,902,709 |
| 2020 | 1,809,165 | 42,685,548 | 375,129 | 56,098,552 | 72,507 | 207,701 | 27,827 | 308,035 | 0 | 78,961,165 |
| 2021 | 1,876,485 | 44,273,902 | 389,088 | 58,186,010 | 75,205 | 215,430 | 28,862 | 319,497 | 0 | 81,899,354 |
| 2022 | 1,846,443 | 43,565,092 | 382,859 | 57,254,474 | 74,001 | 211,981 | 28,400 | 314,382 | 0 | 80,588,176 |
| 2023 | 1,876,495 | 44,274,136 | 389,090 | 58,186,320 | 75,205 | 215,431 | 28,863 | 319,499 | 0 | 81,899,793 |
| 2024 | 1,835,546 | 43,307,991 | 380,599 | 56,916,585 | 73,564 | 210,730 | 28,233 | 312,527 | 0 | 80,112,583 |
| 2025 | 1,757,221 | 41,459,986 | 364,359 | 54,487,884 | 70,425 | 201,738 | 27,028 | 299,191 | 0 | 76,694,081 |
| 2026 | 1,680,853 | 39,658,135 | 348,524 | 52,119,842 | 67,365 | 192,970 | 25,853 | 286,188 | 0 | 73,360,959 |
| 2027 | 1,761,696 | 41,565,571 | 365,286 | 54,626,645 | 70,605 | 202,251 | 27,097 | 299,953 | 0 | 76,889,393 |
| 2028 | 1,554,840 | 36,684,989 | 322,395 | 48,212,448 | 62,314 | 178,503 | 23,915 | 264,732 | 0 | 67,861,127 |
| 2029 | 1,607,154 | 37,919,290 | 333,242 | 49,834,601 | 64,411 | 184,509 | 24,720 | 273,640 | 0 | 70,144,381 |
| 2030 | 1,274,552 | 30,071,855 | 264,277 | 39,521,280 | 51,081 | 146,325 | 19,604 | 217,010 | 0 | 55,627,929 |
| 2031 | 1,273,207 | 30,040,111 | 263,998 | 39,479,562 | 51,027 | 146,170 | 19,583 | 216,780 | 0 | 55,569,212 |
| 2032 | 1,274,473 | 30,069,981 | 264,261 | 39,518,818 | 51,078 | 146,316 | 19,603 | 216,997 | 0 | 55,624,464 |
| 2033 | 1,272,984 | 30,034,850 | 263,952 | 39,472,648 | 51,018 | 146,145 | 19,580 | 216,743 | 0 | 55,559,480 |
| 2034 | 1,272,845 | 30,031,577 | 263,923 | 39,468,348 | 51,013 | 146,129 | 19,578 | 216,720 | 0 | 55,553,427 |
| 2035 | 1,271,186 | 29,992,441 | 263,579 | 39,416,911 | 50,946 | 145,938 | 19,552 | 216,436 | 0 | 55,481,025 |
| TOTAL | 52,680,163 | 1,188,693,671 | 10,392,896 | 1,550,037,420 | 1,976,423 | 4,201,497 | 679,443 | 6,857,363 | 0 | 2,156,040,086 |

^a 1988 through 2018 charges are debt service only and do not include bond cover; 2019 charges and after include bond cover.^b Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-23 Total Transportation and Delta Water Charge for Each Contractor^a (in dollars)

Sheet 1 of 4

| Calendar Year | NORTH BAY AREA | | | SOUTH BAY AREA | | | | CENTRAL COASTAL AREA | | |
|---------------|------------------|-------------------|-------------------|-------------------|------------------|-------------------|-------------------|----------------------|-------------------|-------------------|
| | Napa | Solano | Total | Alameda-Zone 7 | Alameda County | Santa Clara | Total | San Luis Obispo | Santa Barbara | Total |
| 1961 | [1] 0 | [2] 0 | [3] 0 | [4] 0 | [5] 0 | [6] 0 | [7] 0 | [8] 0 | [9] 0 | [10] 0 |
| 1962 | 0 | 0 | 0 | 11,750 | 43,787 | 21,132 | 76,669 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 193,920 | 190,272 | 447,723 | 831,915 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 255,449 | 277,455 | 621,356 | 1,154,260 | 6,696 | 21,667 | 28,363 |
| 1965 | 0 | 0 | 0 | 364,163 | 404,324 | 1,158,090 | 1,926,577 | 13,756 | 36,029 | 49,785 |
| 1966 | 18,063 | 0 | 18,063 | 409,118 | 421,723 | 1,412,954 | 2,243,794 | 26,524 | 61,349 | 87,873 |
| 1967 | 41,574 | 0 | 41,574 | 541,991 | 548,491 | 1,863,198 | 2,953,680 | 56,469 | 118,263 | 174,731 |
| 1968 | 128,628 | 0 | 128,628 | 671,505 | 633,184 | 2,178,465 | 3,483,154 | 115,961 | 229,807 | 345,768 |
| 1969 | 254,715 | 0 | 254,715 | 805,706 | 583,436 | 2,298,736 | 3,687,878 | 185,156 | 358,861 | 544,017 |
| 1970 | 277,547 | 0 | 277,547 | 891,857 | 640,297 | 2,787,967 | 4,320,121 | 200,150 | 387,675 | 587,825 |
| 1971 | 227,474 | 0 | 227,474 | 833,520 | 675,193 | 2,807,017 | 4,315,730 | 202,413 | 392,912 | 595,325 |
| 1972 | 224,978 | 0 | 224,978 | 917,974 | 822,397 | 3,027,749 | 4,768,120 | 209,057 | 406,589 | 615,646 |
| 1973 | 221,091 | 31,366 | 252,457 | 904,617 | 716,492 | 3,120,787 | 4,741,896 | 206,557 | 402,724 | 609,281 |
| 1974 | 240,498 | 32,938 | 273,437 | 945,383 | 746,932 | 3,325,022 | 5,017,337 | 208,545 | 407,090 | 615,635 |
| 1975 | 237,459 | 36,291 | 273,750 | 1,004,122 | 793,055 | 3,214,046 | 5,011,223 | 225,895 | 439,873 | 665,768 |
| 1976 | 271,292 | 40,836 | 312,127 | 1,117,312 | 943,464 | 3,362,542 | 5,423,317 | 228,976 | 447,299 | 676,275 |
| 1977 | 293,627 | 45,096 | 338,723 | 1,086,086 | 922,203 | 3,303,461 | 5,311,751 | 238,699 | 468,721 | 707,420 |
| 1978 | 273,870 | 49,178 | 323,048 | 1,175,054 | 935,818 | 3,712,581 | 5,823,453 | 245,331 | 484,259 | 729,590 |
| 1979 | 289,479 | 53,340 | 342,819 | 1,271,734 | 1,009,566 | 3,819,533 | 6,100,833 | 243,110 | 483,437 | 726,547 |
| 1980 | 310,846 | 86,073 | 396,919 | 1,424,906 | 1,173,798 | 4,119,071 | 6,717,775 | 282,254 | 540,553 | 822,807 |
| 1981 | 347,781 | 112,848 | 460,629 | 1,533,508 | 1,349,125 | 4,507,566 | 7,390,198 | 307,065 | 596,671 | 903,736 |
| 1982 | 438,335 | 141,835 | 580,171 | 1,614,219 | 1,369,536 | 4,941,393 | 7,925,148 | 328,215 | 682,545 | 1,010,760 |
| 1983 | 354,787 | 163,294 | 518,081 | 1,484,855 | 1,260,138 | 4,910,241 | 7,655,234 | 357,218 | 702,083 | 1,059,301 |
| 1984 | 467,336 | 246,698 | 714,034 | 1,794,758 | 1,478,394 | 6,870,249 | 10,143,402 | 409,529 | 801,057 | 1,210,586 |
| 1985 | 736,074 | 386,306 | 1,122,380 | 2,292,544 | 2,225,097 | 7,796,485 | 12,314,126 | 500,696 | 969,931 | 1,470,626 |
| 1986 | 1,120,086 | 714,246 | 1,834,332 | 2,161,437 | 2,014,104 | 8,193,845 | 12,369,386 | 536,751 | 1,038,031 | 1,574,782 |
| 1987 | 1,773,801 | 1,582,227 | 3,356,028 | 2,658,182 | 2,505,662 | 7,980,255 | 13,144,099 | 570,644 | 1,148,974 | 1,719,618 |
| 1988 | 2,349,572 | 2,524,763 | 4,874,335 | 2,719,524 | 2,774,430 | 7,830,285 | 13,324,238 | 673,071 | 1,439,620 | 2,112,691 |
| 1989 | 2,548,764 | 3,701,385 | 6,250,149 | 2,703,440 | 2,515,471 | 7,578,850 | 12,797,761 | 772,570 | 1,814,759 | 2,587,329 |
| 1990 | 2,900,024 | 3,848,934 | 6,748,958 | 3,138,835 | 2,929,775 | 8,355,392 | 14,424,002 | 933,367 | 2,046,370 | 2,979,737 |
| 1991 | 2,941,321 | 4,170,227 | 7,111,548 | 2,410,492 | 2,384,246 | 6,430,834 | 11,225,572 | 979,709 | 2,366,841 | 3,346,550 |
| 1992 | 2,797,727 | 4,144,993 | 6,942,720 | 2,884,144 | 2,927,115 | 7,656,940 | 13,468,199 | 1,118,807 | 2,526,861 | 3,645,668 |
| 1993 | 2,855,497 | 4,172,491 | 7,027,988 | 3,740,572 | 2,977,354 | 8,849,995 | 15,567,921 | 1,185,665 | 2,726,057 | 3,911,722 |
| 1994 | 2,987,938 | 4,225,291 | 7,213,229 | 3,773,359 | 3,586,255 | 9,613,545 | 16,977,158 | 1,335,974 | 3,518,042 | 4,854,015 |
| 1995 | 2,961,322 | 4,405,219 | 7,366,541 | 4,025,865 | 3,313,350 | 8,393,828 | 15,733,044 | 1,647,817 | 6,195,415 | 7,843,231 |
| 1996 | 3,045,021 | 4,898,210 | 7,943,232 | 3,633,451 | 3,178,398 | 9,228,554 | 16,040,402 | 2,592,043 | 15,232,542 | 17,824,585 |
| 1997 | 3,028,005 | 4,734,808 | 7,762,813 | 3,859,834 | 3,145,550 | 9,338,016 | 16,343,400 | 3,002,832 | 23,737,164 | 26,739,996 |
| 1998 | 2,936,062 | 4,588,897 | 7,524,960 | 3,466,484 | 3,201,607 | 9,077,806 | 15,745,896 | 3,254,940 | 28,393,640 | 31,648,580 |
| 1999 | 3,163,021 | 5,083,084 | 8,246,104 | 4,192,637 | 3,693,329 | 11,434,972 | 19,320,939 | 3,810,971 | 29,676,309 | 33,487,280 |
| 2000 | 3,462,081 | 5,621,291 | 9,083,372 | 5,795,759 | 3,594,439 | 10,219,800 | 19,609,999 | 3,763,854 | 30,288,867 | 34,052,721 |
| 2001 | 4,079,627 | 6,370,498 | 10,450,125 | 9,738,180 | 4,082,024 | 11,628,753 | 25,448,957 | 4,315,191 | 32,422,390 | 36,737,581 |
| 2002 | 4,326,261 | 6,567,990 | 10,894,251 | 13,267,467 | 4,087,080 | 13,155,985 | 30,510,532 | 4,041,707 | 32,104,599 | 36,146,306 |
| 2003 | 4,446,233 | 6,915,087 | 11,361,321 | 9,898,280 | 3,807,457 | 11,948,846 | 25,654,583 | 4,120,206 | 32,395,489 | 36,515,694 |
| 2004 | 4,981,718 | 7,258,705 | 12,240,423 | 8,260,596 | 4,208,242 | 11,648,225 | 24,117,063 | 4,189,896 | 32,929,025 | 37,118,921 |
| 2005 | 4,330,346 | 6,735,286 | 11,065,632 | 8,294,603 | 4,334,313 | 12,350,092 | 24,979,008 | 4,295,058 | 32,946,124 | 37,241,183 |
| 2006 | 4,287,972 | 6,316,863 | 10,604,834 | 8,395,102 | 4,399,871 | 12,652,164 | 25,447,137 | 4,182,691 | 32,749,369 | 36,932,060 |
| 2007 | 4,403,206 | 6,661,087 | 11,064,294 | 9,257,373 | 4,822,486 | 13,638,021 | 27,717,881 | 4,258,970 | 33,475,099 | 37,734,069 |
| 2008 | 5,195,681 | 6,766,570 | 11,962,251 | 10,485,384 | 5,234,890 | 14,116,763 | 29,837,037 | 4,849,175 | 35,161,454 | 40,010,629 |
| 2009 | 5,731,192 | 6,989,027 | 12,720,219 | 9,508,418 | 4,907,121 | 14,215,112 | 28,630,651 | 4,736,070 | 33,756,976 | 38,493,046 |
| 2010 | 6,356,559 | 8,751,464 | 15,108,023 | 10,885,971 | 5,561,915 | 15,782,141 | 32,230,027 | 5,266,954 | 36,208,861 | 41,475,815 |
| 2011 | 6,857,474 | 9,361,717 | 16,219,191 | 12,526,581 | 6,430,539 | 18,048,952 | 37,006,073 | 5,455,753 | 37,632,347 | 43,088,100 |
| 2012 | 7,462,432 | 9,412,792 | 16,875,224 | 13,484,138 | 6,498,030 | 20,441,271 | 40,423,438 | 5,520,236 | 37,965,978 | 43,486,214 |
| 2013 | 7,221,981 | 9,320,257 | 16,542,238 | 14,591,771 | 7,392,018 | 20,815,119 | 42,798,909 | 5,832,345 | 39,637,453 | 45,469,798 |
| 2014 | 7,824,874 | 9,811,322 | 17,636,196 | 14,166,784 | 7,567,533 | 20,660,516 | 42,394,833 | 5,633,756 | 36,859,162 | 42,492,919 |
| 2015 | 8,371,418 | 10,501,642 | 18,873,060 | 16,136,068 | 7,661,297 | 23,544,827 | 47,342,192 | 6,596,714 | 39,459,566 | 46,056,279 |
| 2016 | 9,048,372 | 11,676,000 | 20,724,372 | 17,334,071 | 7,743,983 | 30,652,066 | 55,730,120 | 6,676,374 | 44,515,751 | 51,192,125 |
| 2017 | 7,989,435 | 10,070,180 | 18,059,615 | 17,447,726 | 8,024,984 | 26,945,320 | 52,418,030 | 6,718,013 | 48,033,813 | 54,751,827 |
| 2018 | 9,325,859 | 11,659,026 | 20,984,885 | 20,070,809 | 8,923,093 | 28,617,807 | 57,611,709 | 7,120,683 | 48,774,835 | 55,895,519 |
| 2019 | 10,505,930 | 12,540,438 | 23,046,369 | 20,383,817 | 8,803,415 | 25,717,137 | 54,904,369 | 7,402,370 | 47,724,258 | 55,126,628 |
| 2020 | 9,823,620 | 13,282,194 | 23,105,814 | 21,151,062 | 9,730,059 | 26,548,819 | 57,429,940 | 8,612,056 | 46,858,241 | 55,470,297 |
| 2021 | 9,971,139 | 12,364,607 | 22,335,745 | 21,883,131 | 10,045,058 | 27,279,660 | 59,207,848 | 8,712,129 | 47,229,359 | 55,941,488 |
| 2022 | 10,186,369 | 13,184,911 | 23,371,280 | 21,734,106 | 10,003,409 | 27,205,841 | 58,943,355 | 9,224,166 | 48,810,539 | 58,034,705 |
| 2023 | 10,202,390 | 13,170,246 | 23,372,637 | 21,519,585 | 9,885,897 | 26,929,749 | 58,335,231 | 9,177,479 | 48,806,660 | 57,984,139 |
| 2024 | 10,211,331 | 13,193,975 | 23,405,305 | 21,592,695 | 9,914,507 | 27,009,737 | 58,516,940 | 9,195,297 | 48,874,371 | 58,069,668 |
| 2025 | 10,198,617 | 13,197,274 | 23,395,891 | 21,668,326 | 9,946,653 | 27,091,037 | 58,706,015 | 9,214,843 | 48,906,492 | 58,121,335 |
| 2026 | 10,191,043 | 13,200,710 | 23,391,753 | 21,557,338 | 9,881,043 | 26,942,225 | 58,380,606 | 9,182,414 | 48,830,019 | 58,012,433 |
| 2027 | 10,252,405 | 13,285,221 | 23,537,626 | 21,765,261 | 9,972,786 | 27,188,470 | 58,926,517 | 9,243,907 | 49,120,233 | 58,364,140 |
| 2028 | 10,191,918 | 13,223,582 | 23,415,499 | 21,657,246 | 9,915,372 | 27,038,681 | 58,611,299 | 9,203,040 | 48,887,642 | 58,090,682 |
| 2029 | 10,241,630 | 13,294,853 | 23,536,483 | 21,594,886 | 9,867,242 | 26,949,321 | 58,411,448 | 9,193,230 | 48,997,584 | 58,190,814 |
| 2030 | 10,120,685 | 13,158,556 | 23,279,241 | 21,598,020 | 9,874,734 | 26,936,182 | 58,408,936 | 9,179,987 | 48,688,611 | 57,868,598 |
| 2031 | 10,136,745 | 13,186,616 | 23,323,361 | 21,660,977 | 9,894,568 | 26,998,407 | 58,553,952 | 9,201,458 | 48,799,711 | 58,001,169 |
| 2032 | 10,154,963 | 13,215,789 | 23,370,753 | 21,959,442 | 10,035,654 | 27,369,533 | 59,364,629 | 9,260,529 | 49,011, | |

TABLE B-23 Total Transportation and Delta Water Charge for Each Contractor^a (in dollars)

Sheet 2 of 4

| Calendar Year | SAN JOAQUIN VALLEY AREA | | | | | | | | |
|---------------|-------------------------|-------------------|--------------------------------------|--------------------------|----------------------|-------------------|-------------------|--------------------|----------------------|
| | Dudley Ridge | Empire | Future Contractor San Joaquin Valley | Kern | | Kings | Oak Flat | Tulare | Total |
| | | | | Municipal and Industrial | Agricultural | | | | |
| 1961 | [11] | [12] | [13] | [14] | [15] | [16] | [17] | [18] | [19] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 2,725 | 0 | 0 | 0 | 0 | 0 | 2,725 |
| 1965 | 0 | 0 | 6,029 | 73,569 | 0 | 0 | 0 | 0 | 79,598 |
| 1966 | 0 | 0 | 12,039 | 137,330 | 0 | 0 | 0 | 0 | 149,368 |
| 1967 | 0 | 0 | 26,257 | 267,611 | 0 | 0 | 0 | 0 | 293,869 |
| 1968 | 230,012 | 19,616 | 54,588 | 445,439 | 1,732,598 | 16,947 | 19,938 | 311,527 | 2,830,664 |
| 1969 | 246,199 | 11,641 | 87,576 | 525,094 | 2,776,387 | 16,825 | 19,698 | 474,733 | 4,158,154 |
| 1970 | 311,807 | 35,077 | 94,675 | 573,998 | 3,936,499 | 21,435 | 30,732 | 533,068 | 5,537,290 |
| 1971 | 334,002 | 37,805 | 95,695 | 605,889 | 5,276,512 | 27,175 | 35,039 | 725,076 | 7,137,192 |
| 1972 | 388,420 | 41,066 | 98,788 | 631,615 | 7,282,731 | 26,473 | 64,500 | 2,023,716 | 10,557,309 |
| 1973 | 406,454 | 39,688 | 97,550 | 1,025,888 | 7,430,443 | 28,816 | 39,663 | 796,885 | 9,865,387 |
| 1974 | 518,849 | 40,902 | 98,460 | 1,144,792 | 8,157,296 | 29,544 | 43,007 | 1,067,084 | 11,099,935 |
| 1975 | 693,860 | 41,351 | 106,703 | 1,197,166 | 9,567,969 | 31,240 | 48,637 | 1,584,975 | 13,271,900 |
| 1976 | 730,065 | 43,872 | 108,084 | 1,323,840 | 10,826,594 | 32,666 | 52,632 | 1,462,528 | 14,580,281 |
| 1977 | 590,150 | 39,789 | 112,554 | 1,367,404 | 11,159,403 | 34,434 | 54,694 | 1,157,564 | 14,515,992 |
| 1978 | 709,418 | 36,029 | 115,521 | 1,565,884 | 13,516,214 | 38,927 | 59,536 | 1,192,986 | 17,234,515 |
| 1979 | 794,820 | 48,625 | 114,253 | 1,668,951 | 15,615,862 | 43,065 | 71,141 | 1,749,624 | 20,106,340 |
| 1980 | 976,622 | 50,360 | 125,950 | 1,770,264 | 17,279,446 | 48,021 | 95,672 | 1,696,020 | 22,042,355 |
| 1981 | 1,225,561 | 84,726 | 134,169 | 2,430,802 | 22,908,415 | 66,495 | 101,191 | 2,308,517 | 29,259,877 |
| 1982 | 1,261,677 | 70,920 | 135,057 | 2,523,660 | 25,328,672 | 70,662 | 108,864 | 2,304,624 | 31,804,136 |
| 1983 | 1,196,601 | 53,270 | 149,202 | 2,085,047 | 25,003,117 | 75,442 | 87,920 | 509,925 | 29,160,525 |
| 1984 | 1,506,849 | 29,252 | 164,505 | 3,396,379 | 33,752,118 | 94,320 | 122,042 | 1,562,101 | 40,627,567 |
| 1985 | 1,783,378 | 130,682 | 184,905 | 3,891,204 | 39,746,443 | 117,583 | 140,135 | 2,831,039 | 48,825,370 |
| 1986 | 2,025,945 | 80,059 | 180,445 | 4,079,838 | 43,843,047 | 136,715 | 153,816 | 3,686,235 | 54,186,100 |
| 1987 | 1,901,875 | 95,977 | 179,872 | 4,570,841 | 43,168,153 | 137,332 | 152,069 | 3,780,549 | 53,986,668 |
| 1988 | 1,987,580 | 110,355 | 193,735 | 4,734,502 | 45,128,084 | 138,278 | 147,254 | 3,936,446 | 56,376,233 |
| 1989 | 2,142,959 | 102,482 | 187,913 | 4,677,357 | 47,336,712 | 137,085 | 167,105 | 4,419,291 | 59,170,904 |
| 1990 | 1,893,367 | 87,686 | 221,392 | 4,827,893 | 46,130,555 | 121,154 | 149,421 | 4,000,167 | 57,431,633 |
| 1991 | 1,707,084 | 80,975 | 220,282 | 4,535,869 | 38,006,210 | 103,909 | 135,431 | 3,541,177 | 48,330,937 |
| 1992 | 2,254,248 | 105,794 | 241,455 | 5,550,167 | 49,203,306 | 143,783 | 176,414 | 4,580,007 | 62,255,175 |
| 1993 | 2,476,403 | 120,797 | 264,959 | 5,806,060 | 55,104,473 | 161,522 | 195,979 | 5,333,861 | 69,464,054 |
| 1994 | 2,281,226 | 108,302 | 306,359 | 5,210,309 | 52,575,013 | 145,625 | 178,791 | 4,706,561 | 65,512,185 |
| 1995 | 2,877,686 | 116,220 | 304,297 | 6,621,491 | 61,035,168 | 180,802 | 211,124 | 5,565,395 | 76,912,184 |
| 1996 | 2,068,790 | 125,909 | 389,203 | 6,671,115 | 59,099,058 | 178,474 | 190,736 | 7,131,161 | 75,854,446 |
| 1997 | 2,780,053 | 101,314 | 276,681 | 6,521,956 | 57,874,616 | 138,117 | 212,936 | 4,753,291 | 72,658,964 |
| 1998 | 2,625,734 | 120,606 | 381,847 | 5,733,156 | 54,449,995 | 143,433 | 204,546 | 5,006,591 | 68,665,907 |
| 1999 | 2,725,454 | 137,132 | 369,935 | 6,378,472 | 58,211,834 | 184,423 | 219,757 | 7,494,357 | 75,721,364 |
| 2000 | 2,610,894 | 121,410 | 302,665 | 6,100,216 | 51,763,382 | 174,158 | 213,975 | 6,207,867 | 67,494,567 |
| 2001 | 3,285,284 | 146,262 | 328,028 | 5,650,458 | 58,991,087 | 192,167 | 260,017 | 6,474,797 | 75,328,098 |
| 2002 | 3,004,111 | 128,388 | 320,541 | 6,168,328 | 53,950,509 | 187,350 | 239,445 | 5,818,991 | 69,817,662 |
| 2003 | 3,054,458 | 132,208 | 339,960 | 6,533,590 | 56,474,657 | 202,324 | 238,680 | 6,101,855 | 73,077,732 |
| 2004 | 3,241,918 | 168,842 | 342,484 | 7,857,831 | 57,063,569 | 357,201 | 254,252 | 5,855,713 | 75,141,809 |
| 2005 | 3,800,882 | 177,431 | 355,581 | 7,013,406 | 67,642,089 | 691,474 | 251,040 | 6,692,982 | 86,624,885 |
| 2006 | 3,633,089 | 168,554 | 295,502 | 7,504,676 | 64,857,447 | 538,033 | 256,355 | 5,930,737 | 83,184,483 |
| 2007 | 3,418,680 | 159,719 | 334,118 | 7,119,208 | 61,672,307 | 522,792 | 253,386 | 5,869,335 | 79,349,546 |
| 2008 | 3,394,684 | 157,523 | 471,717 | 7,772,452 | 62,695,719 | 549,040 | 261,968 | 5,566,524 | 80,869,628 |
| 2009 | 3,269,550 | 154,359 | 437,320 | 6,915,644 | 60,930,848 | 522,122 | 261,076 | 5,454,278 | 77,945,198 |
| 2010 | 3,621,100 | 232,484 | 507,046 | 8,082,562 | 72,184,973 | 648,296 | 324,986 | 6,472,489 | 92,073,934 |
| 2011 | 4,578,074 | 219,867 | 506,678 | 9,735,104 | 90,593,653 | 741,775 | 357,114 | 6,946,403 | 113,678,668 |
| 2012 | 3,746,780 | 230,999 | 467,806 | 9,792,085 | 83,450,469 | 764,474 | 365,907 | 7,874,381 | 106,692,901 |
| 2013 | 4,242,355 | 233,525 | 519,769 | 10,372,072 | 86,112,942 | 755,491 | 382,316 | 7,406,520 | 110,024,989 |
| 2014 | 4,039,942 | 210,935 | 630,866 | 9,495,889 | 79,703,640 | 684,043 | 372,463 | 6,517,401 | 101,655,179 |
| 2015 | 4,400,922 | 259,798 | 753,863 | 12,014,984 | 94,808,263 | 831,183 | 450,384 | 8,087,936 | 121,607,332 |
| 2016 | 4,917,215 | 316,334 | 484,489 | 13,314,419 | 106,479,349 | 975,590 | 522,108 | 9,513,726 | 136,523,229 |
| 2017 | 5,319,612 | 295,328 | 480,557 | 13,117,007 | 113,938,338 | 1,006,958 | 513,044 | 9,359,661 | 144,030,504 |
| 2018 | 5,352,968 | 316,805 | 589,041 | 13,260,678 | 111,056,830 | 992,939 | 542,313 | 9,714,947 | 141,826,520 |
| 2019 | 5,635,471 | 350,736 | 618,833 | 15,593,012 | 123,254,664 | 1,120,513 | 557,711 | 11,349,541 | 158,480,480 |
| 2020 | 5,623,696 | 367,950 | 631,268 | 17,422,042 | 127,010,467 | 1,181,962 | 641,776 | 11,385,235 | 164,264,396 |
| 2021 | 5,591,345 | 366,015 | 636,077 | 17,515,949 | 126,654,487 | 1,180,601 | 635,838 | 11,321,634 | 163,901,947 |
| 2022 | 5,705,804 | 373,440 | 685,052 | 17,962,626 | 128,607,204 | 1,206,645 | 648,472 | 11,534,765 | 166,724,009 |
| 2023 | 5,577,710 | 365,299 | 689,778 | 17,552,510 | 126,364,845 | 1,181,343 | 632,578 | 11,300,850 | 163,664,912 |
| 2024 | 5,590,840 | 366,259 | 694,462 | 17,574,284 | 126,606,071 | 1,184,241 | 634,282 | 11,324,257 | 163,974,697 |
| 2025 | 5,617,361 | 368,171 | 699,154 | 17,647,107 | 127,150,658 | 1,190,062 | 637,229 | 11,371,145 | 164,680,889 |
| 2026 | 5,528,008 | 362,778 | 704,195 | 17,398,381 | 125,476,434 | 1,173,223 | 626,927 | 11,205,221 | 162,475,167 |
| 2027 | 5,601,355 | 367,183 | 708,913 | 17,603,136 | 127,043,366 | 1,186,839 | 634,376 | 11,342,929 | 164,488,097 |
| 2028 | 5,541,169 | 364,002 | 711,894 | 17,428,961 | 125,805,707 | 1,176,731 | 628,234 | 11,226,679 | 162,883,377 |
| 2029 | 5,459,070 | 358,695 | 717,048 | 17,220,823 | 124,472,676 | 1,160,206 | 617,421 | 11,077,965 | 161,083,904 |
| 2030 | 5,490,215 | 361,631 | 722,283 | 17,280,344 | 124,802,125 | 1,169,036 | 622,937 | 11,125,735 | 161,574,306 |
| 2031 | 5,503,263 | 362,474 | 726,275 | 17,336,783 | 125,334,813 | 1,171,213 | 622,769 | 11,150,216 | 162,207,806 |
| 2032 | 5,594,715 | 368,250 | 731,899 | 17,519,784 | 126,803,642 | 1,189,109 | 635,171 | 11,318,821 | 164,161,390 |
| 2033 | 5,521,198 | 363,640 | 737,253 | 17,379,638 | 125,834,615 | 1,174,648 | 624,087 | 11,184,279 | 162,819,358 |
| 2034 | 5,478,884 | 360,992 | 742,383 | 17,211,180 | 124,887,956 | 1,166,255 | 620,250 | 11,107,107 | 161,575,007 |
| 2035 | 5,787,828 | 380,480 | 747,460 | 18,122,557 | 131,212,057 | 1,226,433 | 653,260 | 11,675,200 | 169,805,275 |
| TOTAL | 213,433,598 | 12,387,044 | 26,215,913 | 568,160,668 | 4,554,154,800 | 34,247,191 | 20,684,568 | 416,095,198 | 5,845,378,981 |

^a Capital charges repaid through bond debt service prior to 2018 exclude bond cover; capital charges for 2019 and after include both bond debt service and bond cover.

TABLE B-23 Total Transportation and Delta Water Charge for Each Contractor^a (in dollars)

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | | | |
|---------------|--------------------------|-------------------|------------------|-------------------|----------------|-------------------|------------------|-------------------|-------------------|-------------------|
| | AVEK | Coachella | Crestline | Desert | Littlerock | Mojave | Palmdale | San Bernardino | San Gabriel | San Gorgonio |
| [20] | [21] | [22] | [23] | [24] | [25] | [26] | [27] | [28] | [29] | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 34,411 | 0 | 0 | 726 | 0 | 0 | 0 | 51,729 | 0 | 0 |
| 1964 | 64,494 | 19,542 | 4,370 | 38,211 | 1,143 | 31,079 | 8,205 | 82,811 | 34,987 | 21,735 |
| 1965 | 121,484 | 34,348 | 7,194 | 42,701 | 2,082 | 55,096 | 15,222 | 135,069 | 35,344 | 21,866 |
| 1966 | 221,012 | 62,476 | 12,478 | 76,886 | 3,753 | 99,564 | 27,679 | 232,502 | 61,465 | 37,964 |
| 1967 | 427,622 | 121,269 | 23,472 | 148,839 | 7,284 | 193,330 | 54,023 | 433,350 | 115,574 | 71,283 |
| 1968 | 754,401 | 218,649 | 41,509 | 265,168 | 12,870 | 346,391 | 95,466 | 782,163 | 208,927 | 128,915 |
| 1969 | 1,090,136 | 334,105 | 61,226 | 394,024 | 18,693 | 517,627 | 138,063 | 1,205,834 | 321,755 | 198,764 |
| 1970 | 1,420,639 | 470,423 | 89,700 | 552,223 | 25,231 | 716,191 | 184,837 | 1,778,187 | 467,573 | 289,633 |
| 1971 | 1,760,670 | 627,331 | 128,360 | 754,065 | 31,837 | 961,821 | 231,280 | 2,538,219 | 659,414 | 409,327 |
| 1972 | 2,245,455 | 819,635 | 185,868 | 1,035,804 | 43,771 | 1,296,928 | 287,620 | 3,758,473 | 950,297 | 537,186 |
| 1973 | 2,399,531 | 971,770 | 190,992 | 1,264,690 | 46,059 | 1,392,735 | 313,446 | 4,026,451 | 961,024 | 587,963 |
| 1974 | 2,520,870 | 998,399 | 204,074 | 1,305,235 | 48,933 | 1,453,991 | 331,702 | 4,463,660 | 1,104,491 | 611,428 |
| 1975 | 2,739,680 | 1,047,544 | 219,290 | 1,381,319 | 53,242 | 1,543,431 | 355,270 | 4,638,827 | 1,208,046 | 644,621 |
| 1976 | 3,204,880 | 1,106,524 | 232,129 | 1,474,438 | 57,732 | 1,621,425 | 381,276 | 4,838,364 | 1,278,740 | 668,315 |
| 1977 | 3,187,208 | 1,008,676 | 245,111 | 1,317,096 | 54,209 | 1,710,542 | 406,620 | 5,094,241 | 1,336,313 | 696,515 |
| 1978 | 3,635,572 | 1,208,919 | 255,468 | 1,618,071 | 56,805 | 1,759,487 | 420,026 | 5,091,935 | 1,374,033 | 709,040 |
| 1979 | 4,309,554 | 1,295,874 | 267,791 | 1,740,645 | 60,285 | 1,936,796 | 449,757 | 5,136,839 | 1,342,135 | 712,866 |
| 1980 | 4,994,298 | 1,406,781 | 295,350 | 1,941,392 | 67,604 | 2,110,823 | 499,051 | 5,647,604 | 1,485,141 | 862,275 |
| 1981 | 5,824,304 | 1,574,217 | 328,818 | 2,194,094 | 100,752 | 2,436,803 | 603,265 | 6,461,840 | 1,688,324 | 946,961 |
| 1982 | 5,582,860 | 1,657,630 | 346,721 | 2,336,914 | 82,296 | 2,410,514 | 641,991 | 6,752,799 | 1,929,664 | 1,021,329 |
| 1983 | 6,335,170 | 2,181,785 | 380,840 | 3,172,326 | 88,383 | 2,609,692 | 658,613 | 6,964,704 | 1,808,748 | 1,076,279 |
| 1984 | 7,713,111 | 3,287,286 | 497,586 | 4,929,764 | 96,492 | 2,878,570 | 727,821 | 8,053,209 | 2,598,232 | 1,211,621 |
| 1985 | 9,545,818 | 4,122,840 | 601,928 | 6,265,166 | 103,706 | 3,070,747 | 959,657 | 8,893,342 | 2,686,799 | 1,287,789 |
| 1986 | 9,515,134 | 4,584,188 | 647,634 | 7,009,695 | 130,222 | 3,256,017 | 1,223,847 | 9,142,822 | 3,398,540 | 1,344,770 |
| 1987 | 9,550,203 | 4,452,838 | 678,086 | 6,885,936 | 240,873 | 3,312,200 | 1,255,052 | 10,544,337 | 3,398,921 | 1,379,613 |
| 1988 | 9,149,230 | 4,510,360 | 704,411 | 7,052,631 | 158,845 | 3,487,827 | 1,044,206 | 11,095,193 | 3,271,137 | 1,465,829 |
| 1989 | 11,039,912 | 4,218,204 | 691,191 | 6,635,387 | 210,634 | 3,569,788 | 1,746,763 | 10,811,990 | 3,453,679 | 1,505,481 |
| 1990 | 12,432,751 | 4,916,384 | 729,229 | 7,720,886 | 331,172 | 3,804,849 | 1,953,905 | 11,722,946 | 4,221,266 | 1,624,763 |
| 1991 | 9,293,533 | 3,471,782 | 688,867 | 5,335,009 | 221,166 | 4,665,434 | 1,640,084 | 11,104,874 | 3,642,610 | 1,720,878 |
| 1992 | 11,850,715 | 3,626,099 | 612,895 | 5,587,383 | 174,998 | 5,644,260 | 1,532,325 | 11,144,101 | 3,694,099 | 1,779,902 |
| 1993 | 12,264,759 | 3,830,889 | 617,198 | 5,922,476 | 211,904 | 5,536,081 | 1,753,971 | 12,107,175 | 4,042,324 | 1,943,336 |
| 1994 | 14,334,329 | 3,857,907 | 694,421 | 5,963,596 | 278,012 | 6,488,116 | 2,090,724 | 12,731,704 | 4,776,753 | 1,920,217 |
| 1995 | 14,201,115 | 4,680,553 | 661,811 | 7,318,575 | 212,244 | 5,681,282 | 1,952,494 | 12,204,445 | 4,480,933 | 1,982,808 |
| 1996 | 14,628,006 | 7,634,303 | 710,651 | 12,187,480 | 208,356 | 5,779,947 | 2,300,206 | 12,730,931 | 4,599,073 | 1,651,239 |
| 1997 | 15,198,058 | 7,251,237 | 750,419 | 8,515,792 | 207,887 | 6,203,055 | 2,342,198 | 14,400,157 | 4,897,487 | 1,758,607 |
| 1998 | 13,714,014 | 6,324,675 | 717,140 | 7,018,227 | 209,057 | 7,806,326 | 1,946,444 | 14,309,132 | 4,177,167 | 1,947,195 |
| 1999 | 15,620,657 | 5,427,378 | 827,907 | 7,263,387 | 215,899 | 8,478,652 | 2,379,773 | 15,812,151 | 5,154,973 | 2,267,918 |
| 2000 | 14,833,919 | 3,823,491 | 793,089 | 5,621,219 | 186,831 | 8,361,377 | 2,079,411 | 15,466,029 | 4,255,999 | 2,469,082 |
| 2001 | 24,848,284 | 4,861,082 | 995,705 | 7,603,913 | 199,105 | 9,049,799 | 3,987,223 | 21,197,778 | 4,397,025 | 3,151,981 |
| 2002 | 16,403,484 | 4,133,283 | 961,222 | 6,403,149 | 182,302 | 8,226,098 | 3,395,518 | 22,062,779 | 5,804,406 | 4,358,497 |
| 2003 | 17,746,743 | 4,252,442 | 931,249 | 6,597,952 | 187,473 | 9,881,213 | 2,929,359 | 20,437,290 | 5,970,925 | 5,602,119 |
| 2004 | 18,938,603 | 4,938,204 | 1,044,004 | 6,725,098 | 201,554 | 10,164,625 | 3,218,537 | 24,999,305 | 5,474,566 | 5,961,000 |
| 2005 | 19,250,686 | 18,593,268 | 863,710 | 11,611,845 | 190,110 | 9,901,945 | 3,254,128 | 22,946,681 | 5,711,879 | 6,237,634 |
| 2006 | 20,941,990 | 31,742,681 | 854,640 | 11,714,431 | 201,929 | 12,738,822 | 3,210,572 | 22,886,179 | 5,783,805 | 6,740,457 |
| 2007 | 24,158,557 | 30,465,921 | 1,081,115 | 11,087,152 | 200,867 | 16,321,930 | 4,708,041 | 28,694,410 | 4,839,830 | 7,382,432 |
| 2008 | 22,068,813 | 30,190,067 | 1,030,055 | 12,144,144 | 216,520 | 14,930,671 | 4,689,343 | 29,419,708 | 5,918,442 | 9,149,800 |
| 2009 | 20,232,613 | 28,253,986 | 1,025,402 | 10,178,724 | 221,989 | 14,853,369 | 4,477,819 | 29,519,294 | 6,493,962 | 9,327,051 |
| 2010 | 23,940,430 | 38,294,720 | 973,436 | 13,611,306 | 228,010 | 18,014,861 | 3,975,781 | 32,546,036 | 8,190,011 | 10,500,087 |
| 2011 | 30,849,332 | 40,374,811 | 1,057,703 | 14,809,747 | 251,756 | 11,982,967 | 4,068,140 | 30,249,914 | 9,013,929 | 11,367,975 |
| 2012 | 31,181,036 | 46,712,305 | 1,167,378 | 17,141,380 | 267,048 | 13,694,966 | 5,435,851 | 43,641,921 | 9,282,334 | 12,417,514 |
| 2013 | 27,089,201 | 39,505,330 | 1,401,593 | 13,996,705 | 292,177 | 13,971,095 | 4,635,053 | 35,352,708 | 7,626,907 | 13,075,020 |
| 2014 | 22,474,948 | 34,692,904 | 1,487,642 | 11,830,184 | 293,830 | 13,910,542 | 4,716,883 | 35,312,367 | 6,520,541 | 15,496,295 |
| 2015 | 22,653,074 | 39,878,907 | 1,551,572 | 14,002,224 | 321,796 | 16,876,401 | 4,206,851 | 42,124,257 | 8,005,588 | 17,760,394 |
| 2016 | 28,012,724 | 44,309,080 | 1,519,884 | 15,460,429 | 341,692 | 19,470,676 | 4,935,928 | 49,640,672 | 9,640,066 | 21,101,831 |
| 2017 | 35,605,454 | 43,057,896 | 1,398,106 | 15,778,828 | 324,803 | 20,768,422 | 5,240,739 | 52,762,268 | 9,893,140 | 23,350,096 |
| 2018 | 31,646,998 | 60,726,105 | 1,520,900 | 20,613,114 | 351,448 | 16,277,392 | 5,021,381 | 51,251,353 | 10,054,306 | 24,506,120 |
| 2019 | 33,975,944 | 46,629,833 | 1,801,004 | 15,712,748 | 389,445 | 19,884,957 | 6,234,476 | 59,556,729 | 11,003,316 | 25,599,158 |
| 2020 | 40,499,360 | 54,052,528 | 2,143,495 | 19,289,596 | 389,603 | 24,211,727 | 7,136,382 | 58,026,721 | 10,745,838 | 26,595,380 |
| 2021 | 41,023,230 | 55,037,258 | 2,167,978 | 19,452,883 | 388,173 | 24,406,581 | 7,251,050 | 57,908,798 | 10,826,786 | 26,373,068 |
| 2022 | 41,885,600 | 56,646,009 | 2,187,475 | 19,880,327 | 393,243 | 24,561,688 | 7,415,806 | 58,513,057 | 10,985,995 | 26,477,534 |
| 2023 | 41,314,550 | 55,626,408 | 2,167,175 | 19,622,900 | 394,158 | 24,373,899 | 7,293,267 | 58,126,283 | 10,889,507 | 26,439,095 |
| 2024 | 41,096,702 | 55,583,066 | 2,154,689 | 19,528,185 | 394,311 | 24,261,783 | 7,245,024 | 57,981,243 | 10,838,042 | 26,440,614 |
| 2025 | 41,392,055 | 55,727,409 | 2,167,063 | 19,658,634 | 393,631 | 24,384,944 | 7,314,637 | 58,258,744 | 10,902,598 | 26,512,633 |
| 2026 | 40,764,710 | 55,074,658 | 2,139,951 | 19,389,497 | 393,165 | 24,129,421 | 7,179,082 | 57,794,496 | 10,758,404 | 26,459,094 |
| 2027 | 41,487,474 | 55,836,940 | 2,173,576 | 19,701,677 | 395,915 | 24,464,844 | 7,325,445 | 58,474,124 | 10,931,467 | 26,597,810 |
| 2028 | 40,951,292 | 55,361,032 | 2,149,187 | 19,481,879 | 392,910 | 24,211,116 | 7,223,555 | 58,069,930 | 10,805,928 | 26,555,888 |
| 2029 | 40,992,127 | 55,521,857 | 2,155,352 | 19,541,566 | 395,061 | 24,292,886 | 7,222,223 | 58,283,743 | 10,848,231 | 26,617,671 |
| 2030 | 40,671,441 | 55,274,719 | 2,136,978 | 19,400,202 | 389,440 | 24,059,787 | 7,182,056 | 57,983,822 | 10,753,986 | 26,593,734 |
| 2031 | 41,943,382 | 56,585,351 | 2,191,378 | 19,919,124 | 389,153 | 24,557,485 | 7,464,896 | 59,019,375 | 11,028,507 | 26,794,709 |
| 2032 | 40,446,130 | 55,237,538 | 2,131,175 | 19,363,965 | 390,716 | 24,012,295 | 7,127,337 | 58,084,125 | 10,748,592 | 26,660,774 |
| 2033 | 41,954,481 | 56,737,815 | 2,198,324 | 1 | | | | | | |

TABLE B-23 Total Transportation and Delta Water Charge for Each Contractor^a (in dollars)

Sheet 4 of 4

| Calendar Year | SOUTHERN CALIFORNIA AREA (continued) | | | | FEATHER RIVER AREA | | | | South Bay Area Future Contractor | Grand Total |
|---------------|--------------------------------------|-----------------------|--------------------|-----------------------|--------------------|------------------|----------------|------------------|----------------------------------|----------------------|
| | Santa Clarita ^b | Metropolitan | Ventura | Total | Yuba City | Butte | Plumas | Total | | |
| 1961 | [30] | [31] | [32] | [33] | [34] | [35] | [36] | [37] | [38] | [39] |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,219 | 79,888 |
| 1963 | 0 | 690,812 | 0 | 777,678 | 0 | 0 | 0 | 0 | 12,626 | 1,622,219 |
| 1964 | 27,447 | 1,260,513 | 9,378 | 1,603,916 | 0 | 0 | 0 | 0 | 13,938 | 2,803,202 |
| 1965 | 53,007 | 2,180,589 | 17,766 | 2,721,767 | 0 | 0 | 405 | 405 | 28,937 | 4,807,069 |
| 1966 | 101,264 | 3,900,172 | 33,426 | 4,870,643 | 0 | 0 | 565 | 565 | 31,321 | 7,401,629 |
| 1967 | 210,814 | 7,693,703 | 68,155 | 9,568,718 | 0 | 0 | 562 | 562 | 47,718 | 13,080,852 |
| 1968 | 492,490 | 15,317,881 | 142,803 | 18,807,634 | 0 | 1,050 | 1,439 | 2,489 | 46,945 | 25,645,282 |
| 1969 | 744,745 | 23,153,064 | 215,209 | 28,393,246 | 0 | 1,225 | 4,120 | 5,345 | 52,963 | 37,096,318 |
| 1970 | 945,293 | 30,617,164 | 273,605 | 37,830,698 | 0 | 3,848 | 17,116 | 20,964 | 69,744 | 48,644,189 |
| 1971 | 1,140,734 | 39,958,997 | 342,425 | 49,544,481 | 0 | 4,546 | 19,187 | 23,733 | 55,532 | 61,899,466 |
| 1972 | 1,387,797 | 54,991,810 | 422,304 | 67,962,948 | 0 | 4,929 | 21,150 | 26,079 | 80,412 | 84,235,492 |
| 1973 | 1,437,156 | 59,591,118 | 435,655 | 73,618,589 | 0 | 7,059 | 21,778 | 28,837 | 54,219 | 89,170,666 |
| 1974 | 1,533,489 | 66,008,399 | 455,565 | 81,040,237 | 0 | 8,336 | 22,408 | 30,744 | 76,783 | 98,154,108 |
| 1975 | 1,626,028 | 71,830,070 | 478,403 | 87,765,771 | 0 | 9,416 | 23,523 | 32,939 | 84,547 | 107,105,898 |
| 1976 | 1,663,439 | 74,907,214 | 475,587 | 91,910,062 | 0 | 7,004 | 23,257 | 30,261 | 106,717 | 113,039,041 |
| 1977 | 1,752,260 | 73,338,457 | 507,063 | 90,654,311 | 0 | 16,917 | 24,059 | 40,976 | 98,618 | 111,667,790 |
| 1978 | 1,886,544 | 81,951,168 | 523,177 | 100,490,244 | 0 | 12,635 | 24,225 | 36,860 | 100,786 | 124,738,495 |
| 1979 | 1,967,541 | 83,601,786 | 526,405 | 103,348,273 | 0 | 16,575 | 28,352 | 44,927 | 119,352 | 130,789,091 |
| 1980 | 2,107,138 | 93,029,351 | 583,628 | 115,030,437 | 0 | 19,834 | 26,562 | 46,396 | 178,812 | 145,235,502 |
| 1981 | 2,577,872 | 112,171,493 | 672,540 | 137,581,282 | 0 | 21,682 | 34,563 | 56,245 | 185,347 | 175,837,313 |
| 1982 | 2,742,189 | 117,143,301 | 727,623 | 143,375,831 | 0 | 16,117 | 43,117 | 59,234 | 173,894 | 184,929,173 |
| 1983 | 2,814,229 | 118,991,007 | 854,263 | 147,936,040 | 0 | 15,202 | 29,410 | 44,612 | 220,926 | 186,594,718 |
| 1984 | 3,893,873 | 156,273,535 | 933,311 | 193,094,411 | 20,590 | 15,442 | 31,795 | 67,827 | 225,959 | 246,083,787 |
| 1985 | 4,361,215 | 194,967,204 | 993,651 | 237,859,861 | 24,050 | 16,976 | 32,405 | 73,431 | 340,322 | 302,006,115 |
| 1986 | 4,997,902 | 218,331,684 | 1,058,276 | 264,640,730 | 31,753 | 18,145 | 33,596 | 83,494 | 279,227 | 334,968,050 |
| 1987 | 4,856,668 | 204,859,482 | 1,056,318 | 252,470,526 | 37,071 | 17,794 | 33,384 | 88,249 | 345,116 | 325,110,304 |
| 1988 | 5,044,615 | 221,667,115 | 1,124,102 | 269,775,501 | 48,058 | 19,117 | 33,605 | 100,780 | 365,207 | 346,928,986 |
| 1989 | 5,054,807 | 230,328,278 | 1,232,379 | 280,498,493 | 61,184 | 20,809 | 37,188 | 119,181 | 422,329 | 361,846,146 |
| 1990 | 5,523,731 | 277,194,766 | 1,855,991 | 334,032,638 | 66,041 | 20,855 | 36,812 | 123,708 | 474,284 | 416,214,960 |
| 1991 | 4,637,495 | 221,887,061 | 1,549,955 | 269,858,747 | 180,212 | 22,526 | 42,200 | 244,938 | 214,683 | 340,332,974 |
| 1992 | 5,826,184 | 245,365,618 | 1,503,480 | 298,342,060 | 208,216 | 26,028 | 43,517 | 277,761 | 443,676 | 385,375,258 |
| 1993 | 5,472,847 | 219,238,180 | 1,551,253 | 274,492,394 | 209,613 | 26,203 | 47,588 | 283,404 | 599,571 | 371,347,055 |
| 1994 | 6,039,306 | 257,365,883 | 1,475,069 | 318,016,037 | 201,284 | 25,161 | 46,079 | 272,524 | 609,966 | 413,455,115 |
| 1995 | 6,414,953 | 225,863,369 | 1,568,401 | 287,222,980 | 216,945 | 27,118 | 50,022 | 294,085 | 534,971 | 395,907,036 |
| 1996 | 6,646,097 | 235,410,311 | 1,622,641 | 306,109,242 | 217,250 | 27,155 | 56,622 | 301,027 | 571,857 | 424,644,791 |
| 1997 | 6,539,751 | 245,453,567 | 1,777,266 | 315,295,480 | 236,300 | 29,847 | 59,915 | 326,062 | 428,638 | 439,555,353 |
| 1998 | 6,162,557 | 227,090,227 | 1,796,534 | 293,218,695 | 128,021 | 29,927 | 36,222 | 194,170 | 465,095 | 417,463,303 |
| 1999 | 6,785,846 | 257,177,969 | 1,881,647 | 329,294,156 | 254,675 | 31,834 | 40,585 | 327,094 | 584,116 | 466,981,053 |
| 2000 | 10,273,978 | 252,908,188 | 1,968,120 | 323,040,733 | 262,163 | 79,001 | 43,704 | 384,868 | 0 | 453,666,259 |
| 2001 | 15,880,151 | 441,710,358 | 2,260,648 | 540,143,051 | 261,699 | 93,471 | 45,056 | 400,226 | 0 | 688,508,038 |
| 2002 | 13,171,700 | 333,573,284 | 2,305,096 | 420,980,818 | 266,107 | 95,018 | 47,297 | 408,422 | 0 | 568,757,990 |
| 2003 | 14,225,488 | 361,640,701 | 2,321,867 | 452,724,820 | 262,547 | 93,638 | 68,989 | 425,174 | 0 | 599,759,324 |
| 2004 | 15,508,367 | 413,357,269 | 2,609,212 | 513,140,345 | 284,387 | 102,404 | 29,286 | 416,077 | 0 | 662,174,639 |
| 2005 | 14,462,290 | 384,539,517 | 2,082,380 | 499,646,072 | 280,033 | 727,066 | 28,810 | 1,035,909 | 0 | 660,592,688 |
| 2006 | 13,769,616 | 360,150,454 | 2,047,708 | 492,783,284 | 292,991 | 43,185 | 38,618 | 374,794 | 0 | 649,326,592 |
| 2007 | 16,799,077 | 438,766,347 | 2,532,968 | 587,038,648 | 291,100 | 40,957 | 46,072 | 378,129 | 0 | 743,282,565 |
| 2008 | 19,111,238 | 412,361,495 | 2,998,166 | 564,228,462 | 306,916 | 804,536 | 86,522 | 1,197,974 | 0 | 728,105,982 |
| 2009 | 17,197,408 | 382,673,374 | 2,869,843 | 527,324,834 | 328,896 | 855,850 | 90,625 | 1,275,371 | 0 | 686,389,317 |
| 2010 | 17,545,145 | 441,535,471 | 3,045,936 | 612,401,230 | 400,358 | 1,064,565 | 108,873 | 1,573,796 | 0 | 794,862,825 |
| 2011 | 17,669,283 | 492,878,609 | 3,127,562 | 667,701,727 | 451,483 | 1,197,315 | 121,980 | 1,770,778 | 0 | 879,464,535 |
| 2012 | 19,413,758 | 480,048,886 | 3,397,702 | 683,802,081 | 460,139 | 1,318,107 | 130,850 | 1,909,096 | 0 | 893,188,955 |
| 2013 | 22,478,506 | 477,803,141 | 3,411,518 | 660,638,953 | 483,119 | 1,383,934 | 141,268 | 2,008,321 | 0 | 877,483,208 |
| 2014 | 21,072,269 | 425,643,076 | 2,923,077 | 596,374,557 | 473,134 | 1,355,332 | 140,895 | 1,969,361 | 0 | 802,523,045 |
| 2015 | 21,729,715 | 472,646,118 | 3,301,049 | 665,057,947 | 614,794 | 1,761,128 | 185,768 | 2,561,690 | 0 | 901,498,501 |
| 2016 | 21,701,084 | 539,688,442 | 3,834,448 | 759,656,954 | 727,229 | 2,083,208 | 228,712 | 3,039,149 | 0 | 1,026,865,950 |
| 2017 | 23,754,731 | 584,880,135 | 5,474,400 | 822,289,017 | 741,588 | 2,124,343 | 214,861 | 3,080,792 | 0 | 1,094,629,786 |
| 2018 | 24,094,085 | 502,662,863 | 3,512,144 | 752,228,209 | 744,687 | 2,133,220 | 277,421 | 3,155,328 | 0 | 1,031,712,172 |
| 2019 | 26,625,013 | 616,938,639 | 8,457,945 | 872,809,207 | 800,901 | 2,294,248 | 241,233 | 3,336,382 | 0 | 1,167,703,434 |
| 2020 | 29,127,306 | 620,562,955 | 5,971,003 | 898,751,895 | 855,893 | 2,451,775 | 249,824 | 3,557,492 | 0 | 1,202,579,834 |
| 2021 | 29,538,825 | 628,003,975 | 6,083,877 | 908,462,482 | 858,591 | 2,459,504 | 249,884 | 3,567,979 | 0 | 1,213,417,490 |
| 2022 | 29,739,633 | 638,709,244 | 6,137,001 | 923,532,612 | 857,387 | 2,456,055 | 248,097 | 3,561,539 | 0 | 1,234,167,500 |
| 2023 | 29,487,481 | 631,685,172 | 6,097,079 | 913,516,974 | 858,591 | 2,459,505 | 248,588 | 3,566,684 | 0 | 1,220,440,576 |
| 2024 | 29,267,836 | 627,180,123 | 6,046,261 | 907,817,879 | 856,950 | 2,454,804 | 247,986 | 3,559,740 | 0 | 1,215,344,229 |
| 2025 | 29,504,192 | 631,221,482 | 6,094,622 | 913,532,643 | 853,811 | 2,445,812 | 246,808 | 3,546,431 | 0 | 1,221,983,204 |
| 2026 | 29,117,526 | 622,670,063 | 6,009,069 | 901,879,137 | 850,751 | 2,437,044 | 245,661 | 3,533,456 | 0 | 1,207,672,552 |
| 2027 | 29,562,034 | 632,444,005 | 6,103,834 | 915,499,144 | 853,991 | 2,446,325 | 246,932 | 3,547,248 | 0 | 1,224,362,771 |
| 2028 | 29,227,427 | 624,687,706 | 6,030,007 | 905,147,856 | 845,700 | 2,422,577 | 243,779 | 3,512,056 | 0 | 1,211,660,768 |
| 2029 | 29,218,969 | 625,481,052 | 6,027,855 | 906,598,591 | 847,797 | 2,428,583 | 244,613 | 3,520,993 | 0 | 1,211,342,233 |
| 2030 | 28,952,574 | 618,940,280 | 5,967,117 | 898,306,134 | 834,467 | 2,390,399 | 239,526 | 3,464,392 | 0 | 1,202,901,607 |
| 2031 | 29,506,718 | 632,051,564 | 6,091,072 | 917,542,715 | 834,413 | 2,390,244 | 239,534 | 3,464,191 | 0 | 1,223,093,194 |
| 2032 | 28,774,318 | 615,994,297 | 5,918,806 | 894,890,067 | 834,464 | 2,390,390 | 239,585 | 3,464,439 | 0 | 1,203,523,648 |
| 2033 | 29,521,013 | 632,287,207 | 6,088,261 | 918,441,388 | 834,404 | 2,390,219 | 239,592 | 3,464,215 | 0 | 1,225,284,250 |
| 2034 | 28,634,766 | 613,377,689 | 5,885,397 | 891,636,554 | 834,399 | 2,390,203 | 239,621 | 3,464,223 | 0 | 1,197,348,167 |
| 2035 | 30,804,024 | 663,097,056 | 6,377,474 | 962,319,133 | 834,332 | 2,390,012 | 239,626 | 3,463,970 | 0 | 1,278,063,464 |
| TOTAL | 951,936,865 | 23,645,602,551 | 192,155,778 | 32,510,950,911 | < | | | | | |

TABLE B-24 Equivalent Unit Charge for Water Supply for Each Contractor^a (in dollars per acre-foot)

| Project Service Area and SWP Water Contractor | Transportation Charge | | | | | Delta Water Charge | Water System Revenue Bond Surcharge | Total Equivalent Unit Charge |
|---|------------------------------|-------------------------------|-------------------------------|--------------------------------|----------|--------------------------|---|---------------------------------------|
| | Capital Cost Component | Minimum OMP&R Component | Off- Aqueduct Component | Variable OMP&R Component | Total | | | |
| FEATHER RIVER AREA | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] |
| Yuba City | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 160.50 | 14.65 | 175.15 |
| Butte | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 599.95 | 43.52 | 643.48 |
| Plumas | 45.13 | 6.32 | 0.00 | 0.00 | 51.45 | 95.27 | 11.21 | 157.93 |
| Feather River Area | 9.58 | 1.34 | 0.00 | 0.00 | 10.92 | 264.87 | 21.69 | 297.48 |
| NORTH BAY AREA | | | | | | | | |
| Napa | 180.50 | 83.61 | 4.90 | 13.71 | 282.72 | 48.07 | 16.51 | 347.30 |
| Solano | 106.23 | 70.29 | 5.30 | 7.85 | 189.66 | 53.33 | 13.05 | 256.04 |
| North Bay Area | 133.63 | 75.20 | 5.15 | 10.01 | 223.99 | 51.39 | 14.32 | 289.71 |
| SOUTH BAY AREA | | | | | | | | |
| Alameda-Zone 7 | 49.81 | 66.03 | 9.14 | 20.56 | 145.54 | 48.81 | 9.17 | 203.51 |
| Alameda County | 31.04 | 35.24 | 7.46 | 13.19 | 86.94 | 33.24 | 4.90 | 125.08 |
| Santa Clara | 25.11 | 25.88 | 6.55 | 11.17 | 68.71 | 21.31 | 3.30 | 93.31 |
| South Bay Area | 30.12 | 33.98 | 7.12 | 13.03 | 84.26 | 27.75 | 4.52 | 116.53 |
| SAN JOAQUIN VALLEY AREA | | | | | | | | |
| Kings | 6.62 | 9.57 | 3.83 | 8.09 | 28.10 | 40.23 | 3.86 | 72.19 |
| Dudley Ridge | 5.64 | 5.91 | 3.32 | 4.91 | 19.79 | 21.58 | 2.17 | 43.53 |
| Empire | 2.46 | 5.62 | 2.54 | 4.54 | 15.16 | 24.66 | 1.80 | 41.62 |
| Kern | 10.19 | 11.64 | 5.07 | 6.86 | 33.75 | 27.27 | 2.84 | 63.86 |
| Oak Flat | 2.33 | 3.16 | 2.05 | 3.01 | 10.54 | 23.54 | 1.82 | 35.90 |
| Tulare | 5.88 | 6.12 | 3.26 | 4.74 | 19.99 | 22.85 | 2.24 | 45.09 |
| San Joaquin Valley Area | 9.43 | 10.70 | 4.76 | 6.52 | 31.42 | 26.54 | 2.74 | 60.70 |
| CENTRAL COASTAL AREA | | | | | | | | |
| San Luis Obispo | 480.57 | 330.50 | 15.32 | 117.75 | 944.14 | 247.59 | 55.31 | 1,247.04 |
| Santa Barbara | 1118.61 | 328.22 | 20.29 | 98.02 | 1,565.13 | 110.15 | 76.01 | 1,751.30 |
| Central Coastal Area | 994.44 | 328.66 | 19.33 | 101.86 | 1,444.28 | 136.90 | 71.98 | 1,653.17 |
| SOUTHERN CALIFORNIA AREA | | | | | | | | |
| AVEK | 59.02 | 59.69 | 33.36 | 65.71 | 217.78 | 59.24 | 9.71 | 286.73 |
| Coachella | 87.61 | 102.52 | 44.41 | 76.10 | 310.64 | 58.29 | 11.30 | 380.24 |
| Crestline | 169.77 | 163.06 | 36.28 | 77.32 | 446.43 | 89.79 | 21.00 | 557.22 |
| Desert | 55.02 | 58.50 | 53.29 | 43.21 | 210.02 | 35.76 | 7.30 | 253.08 |
| Littlerock | 134.23 | 135.34 | 41.09 | 24.29 | 334.95 | 130.31 | 21.23 | 486.49 |
| Mojave | 233.86 | 262.08 | 39.47 | 125.24 | 660.65 | 195.34 | 40.16 | 896.14 |
| Palmdale | 62.56 | 66.82 | 40.62 | 100.34 | 270.34 | 70.50 | 10.55 | 351.39 |
| San Bernardino | 292.93 | 232.15 | 31.30 | 79.14 | 635.52 | 100.11 | 25.04 | 760.67 |
| San Gabriel | 125.14 | 123.49 | 48.24 | 49.29 | 346.16 | 63.03 | 15.05 | 424.24 |
| San Gorgonio | 1722.37 | 695.06 | 35.48 | 226.37 | 2,679.28 | 170.05 | 41.79 | 2,891.13 |
| Santa Clarita ^b | 63.56 | 65.07 | 25.89 | 43.33 | 197.84 | 52.12 | 12.48 | 262.44 |
| Metropolitan | 93.22 | 79.91 | 39.75 | 43.16 | 256.04 | 52.13 | 11.63 | 319.80 |
| Ventura | 300.05 | 259.99 | 22.15 | 131.19 | 713.38 | 188.02 | 41.37 | 942.77 |
| Southern California Area | 98.46 | 85.35 | 39.35 | 47.67 | 270.83 | 55.21 | 12.12 | 338.16 |
| ALL AREAS | 56.55 | 48.12 | 20.57 | 25.98 | 151.22 | 40.47 | 7.53 | 199.22 |

^a Hypothetical charges, which, if assessed on all Table A water delivered to date, all surplus water delivered prior to May 1, 1973, and all Table A water estimated to be delivered during the remainder of the project repayment period (Table B-5B), would provide a sum at the end of the period financially equivalent to all Transportation Charge and Delta Water Charge payments required under a water supply contract, considering interest at the Project Interest Rate, 4.610 percent per annum.

^b Castaic Lake Water Agency's SWP Water Supply Contract was transferred to Santa Clarita Valley Water Agency effective November 2, 2018.

TABLE B-25 Equivalent Unit Transportation Costs of Water Delivered from or through Each Aqueduct Reach^a (in dollars per acre-foot)

| Aqueduct Reach | Unit Cost of Reach ^b | | | | | | Cumulative Unit Costs from the Delta | | | | | |
|----------------|---------------------------------|--|---------------|--------------------|----------------|--------|--------------------------------------|--|---------------|--------------------|----------------|--------|
| | Capital Costs | Water System Revenue Bond Surcharge ^c | Minimum OMP&R | Off-Aqueduct Costs | Variable OMP&R | Total | Capital Costs | Water System Revenue Bond Surcharge ^c | Minimum OMP&R | Off-Aqueduct Costs | Variable OMP&R | Total |
| NBA | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] | [12] |
| 1 | 45.99 | 13.26 | 17.48 | 2.51 | 1.41 | 80.65 | 45.99 | 13.26 | 17.48 | 2.51 | 1.41 | 80.65 |
| 2 | 48.94 | 14.11 | 7.64 | 0.00 | 0.00 | 70.69 | 94.93 | 27.37 | 25.12 | 2.51 | 1.41 | 151.34 |
| 3A | 8.72 | 2.51 | 15.19 | 5.68 | 2.28 | 34.38 | 103.65 | 29.88 | 40.31 | 8.19 | 3.69 | 185.72 |
| 3B | 56.12 | 16.18 | 34.34 | 3.84 | 5.06 | 115.54 | 151.05 | 43.55 | 59.46 | 6.35 | 6.47 | 266.88 |
| SBA | | | | | | | | | | | | |
| 1 | 8.04 | 2.32 | 20.49 | 5.63 | 5.27 | 41.75 | 10.29 | 2.97 | 24.52 | 8.36 | 7.74 | 53.88 |
| 2 | 0.76 | 0.22 | 2.31 | 0.00 | 0.00 | 3.29 | 11.05 | 3.19 | 26.83 | 8.36 | 7.74 | 57.17 |
| 4 | 2.53 | 0.73 | 3.95 | 0.00 | 0.00 | 7.21 | 13.58 | 3.92 | 30.78 | 8.36 | 7.74 | 64.38 |
| 5 | 5.31 | 1.53 | 3.09 | 0.00 | 0.00 | 9.93 | 18.89 | 5.45 | 33.87 | 8.36 | 7.74 | 74.31 |
| 6 | 0.31 | 0.09 | 0.33 | 0.00 | 0.00 | 0.73 | 19.20 | 5.54 | 34.20 | 8.36 | 7.74 | 75.04 |
| 7 | 2.35 | 0.68 | 0.60 | 0.00 | 0.00 | 3.63 | 21.55 | 6.22 | 34.80 | 8.36 | 7.74 | 78.67 |
| 8 | 3.19 | 0.92 | 0.99 | 0.00 | 0.00 | 5.10 | 24.74 | 7.14 | 35.79 | 8.36 | 7.74 | 83.77 |
| 9 | 6.59 | 1.90 | 3.72 | 0.00 | 0.00 | 12.21 | 31.33 | 9.04 | 39.51 | 8.36 | 7.74 | 95.98 |
| CA | | | | | | | | | | | | |
| 1 | 2.25 | 0.65 | 4.03 | 2.73 | 2.47 | 12.13 | 2.25 | 0.65 | 4.03 | 2.73 | 2.47 | 12.13 |
| 2A | 1.43 | 0.41 | 0.80 | 0.00 | 0.00 | 2.64 | 3.68 | 1.06 | 4.83 | 2.73 | 2.47 | 14.77 |
| 2B | 0.73 | 0.21 | 0.40 | 0.00 | 0.00 | 1.34 | 4.41 | 1.27 | 5.23 | 2.73 | 2.47 | 16.11 |
| 3 | 0.64 | 0.18 | 0.30 | 0.00 | 0.00 | 1.12 | 5.05 | 1.45 | 5.53 | 2.73 | 2.47 | 17.23 |
| 4 | 1.02 | 0.29 | 2.00 | 1.30 | 1.11 | 5.72 | 6.07 | 1.74 | 7.53 | 4.03 | 3.58 | 22.95 |
| 5 | 0.78 | 0.22 | 0.40 | 0.00 | 0.00 | 1.40 | 6.85 | 1.96 | 7.93 | 4.03 | 3.58 | 24.35 |
| 6 | 0.20 | 0.06 | 0.20 | 0.00 | 0.00 | 0.46 | 7.05 | 2.02 | 8.13 | 4.03 | 3.58 | 24.81 |
| 7 | 1.17 | 0.34 | 0.48 | 0.00 | 0.00 | 1.99 | 8.22 | 2.36 | 8.61 | 4.03 | 3.58 | 26.80 |
| 8C | 0.02 | 0.01 | 0.09 | 0.00 | 0.00 | 0.12 | 8.24 | 2.37 | 8.70 | 4.03 | 3.58 | 26.92 |
| 8D | 0.45 | 0.13 | 0.38 | 0.00 | 0.00 | 0.96 | 8.69 | 2.50 | 9.08 | 4.03 | 3.58 | 27.88 |
| 9 | 0.38 | 0.11 | 0.35 | 0.00 | 0.00 | 0.84 | 9.07 | 2.61 | 9.43 | 4.03 | 3.58 | 28.72 |
| 10A | 0.40 | 0.12 | 0.47 | 0.00 | 0.00 | 0.99 | 9.47 | 2.73 | 9.90 | 4.03 | 3.58 | 29.71 |
| 11B | 0.59 | 0.17 | 0.30 | 0.00 | 0.00 | 1.06 | 10.06 | 2.90 | 10.20 | 4.03 | 3.58 | 30.77 |
| 12D | 0.56 | 0.16 | 0.27 | 0.00 | 0.00 | 0.99 | 10.62 | 3.06 | 10.47 | 4.03 | 3.58 | 31.76 |
| 12E | 0.39 | 0.11 | 0.45 | 0.00 | 0.00 | 0.95 | 11.01 | 3.17 | 10.92 | 4.03 | 3.58 | 32.71 |
| 13B | 0.84 | 0.24 | 0.53 | 0.00 | 0.00 | 1.61 | 11.85 | 3.41 | 11.45 | 4.03 | 3.58 | 34.32 |
| 14A | 3.24 | 0.93 | 4.05 | 2.31 | 2.10 | 12.63 | 15.09 | 4.34 | 15.50 | 6.34 | 5.68 | 46.95 |
| 14B | 0.51 | 0.15 | 0.50 | 0.00 | 0.00 | 1.16 | 15.60 | 4.49 | 16.00 | 6.34 | 5.68 | 48.11 |
| 14C | 0.43 | 0.12 | 0.37 | 0.00 | 0.00 | 0.92 | 16.03 | 4.61 | 16.37 | 6.34 | 5.68 | 49.03 |
| 15A | 2.40 | 0.69 | 4.22 | 2.82 | 2.28 | 12.41 | 18.43 | 5.30 | 20.59 | 9.16 | 7.96 | 61.44 |
| 16A | 3.97 | 1.14 | 6.53 | 6.11 | 5.32 | 23.07 | 22.40 | 6.44 | 27.12 | 15.27 | 13.28 | 84.51 |
| 17E | 13.40 | 3.86 | 18.34 | 21.37 | 19.63 | 76.60 | 35.80 | 10.30 | 45.46 | 36.64 | 32.91 | 161.11 |
| 17F | 3.47 | 1.00 | 0.23 | 0.00 | 0.00 | 4.70 | 39.27 | 11.30 | 45.69 | 36.64 | 32.91 | 165.81 |
| 18A | 3.12 | 0.90 | 2.20 | 0.00 | -2.06 | 4.16 | 42.39 | 12.20 | 47.89 | 36.64 | 30.85 | 169.97 |
| 19 | 2.30 | 0.66 | 1.33 | 0.00 | 0.00 | 4.29 | 44.69 | 12.86 | 49.22 | 36.64 | 30.85 | 174.26 |
| 19C | 2.51 | 0.72 | 0.00 | 0.00 | 0.00 | 3.23 | 47.20 | 13.58 | 49.22 | 36.64 | 30.85 | 177.49 |
| 20A | 1.83 | 0.53 | 2.20 | 0.00 | 0.00 | 4.56 | 49.03 | 14.11 | 51.42 | 36.64 | 30.85 | 182.05 |
| 20B | 2.22 | 0.64 | 1.45 | 0.00 | 0.00 | 4.31 | 51.25 | 14.75 | 52.87 | 0.00 | 30.85 | 149.72 |
| 21 | 1.12 | 0.32 | 1.01 | 0.00 | 0.00 | 2.45 | 52.37 | 15.07 | 53.88 | 0.00 | 30.85 | 152.17 |
| 22A | 1.17 | 0.34 | 0.53 | 0.00 | 0.00 | 2.04 | 53.54 | 15.41 | 54.41 | 0.00 | 30.85 | 154.21 |
| 22B | 11.49 | 3.31 | 14.20 | 6.45 | 6.48 | 41.93 | 65.03 | 18.72 | 68.61 | 6.45 | 37.33 | 196.14 |
| 23 | 3.16 | 0.91 | 0.98 | 0.00 | -2.63 | 2.42 | 68.19 | 19.63 | 69.59 | 6.45 | 34.70 | 198.56 |
| 24 | 6.12 | 1.76 | 2.75 | 0.00 | 0.00 | 10.63 | 74.31 | 21.39 | 72.34 | 6.45 | 34.70 | 209.19 |
| 25 | 4.47 | 1.29 | 0.16 | 0.00 | 0.00 | 5.92 | 78.78 | 22.68 | 72.50 | 6.45 | 34.70 | 215.11 |
| 26A | 4.88 | 1.41 | 9.20 | 0.00 | 17.95 | (2.46) | 83.66 | 24.09 | 81.70 | 6.45 | 16.75 | 212.65 |
| 28G | 9.09 | 2.62 | 3.48 | 0.00 | 0.00 | 15.19 | 92.75 | 26.71 | 85.18 | 6.45 | 16.75 | 227.84 |
| 28H | 8.75 | 2.52 | 3.65 | 0.00 | 0.00 | 14.92 | 101.50 | 29.23 | 88.83 | 6.45 | 16.75 | 242.76 |
| 28J | 98.11 | 28.29 | 50.73 | 0.00 | 0.00 | 177.13 | 199.61 | 57.52 | 139.56 | 6.45 | 16.75 | 419.89 |
| EBX | | | | | | | | | | | | |
| 1 | N/A | 0.00 | 0.18 | 0.00 | 0.00 | 0.18 | N/A | 24.09 | 81.88 | 6.45 | 16.75 | 129.17 |
| 2A | N/A | 0.00 | 1.42 | 0.00 | 0.00 | 1.42 | N/A | 24.09 | 83.30 | 6.45 | 16.75 | 130.59 |
| 2B | N/A | 0.00 | 59.69 | 10.84 | 15.01 | 85.54 | N/A | 24.09 | 142.99 | 17.29 | 31.76 | 216.13 |
| 2C | N/A | 0.00 | 4.81 | 0.00 | 0.00 | 4.81 | N/A | 24.09 | 147.80 | 17.29 | 31.76 | 220.94 |
| 2D | N/A | 0.00 | 7.14 | 0.00 | 0.00 | 7.14 | N/A | 24.09 | 154.93 | 17.29 | 31.76 | 228.07 |
| 2E | N/A | 0.00 | 41.65 | 0.37 | 20.43 | 62.46 | N/A | 24.09 | 196.59 | 17.66 | 52.19 | 290.53 |
| 3A | N/A | 0.00 | 187.29 | 8.40 | 34.63 | 230.32 | N/A | 24.09 | 383.88 | 26.06 | 86.82 | 520.85 |
| 3B | N/A | 0.00 | 60.90 | 0.00 | 0.00 | 60.90 | N/A | 24.09 | 444.78 | 26.06 | 86.82 | 581.76 |
| 3C | N/A | 0.00 | 42.31 | 0.00 | 0.00 | 42.31 | N/A | 24.09 | 487.09 | 26.06 | 86.82 | 624.06 |
| 3E | N/A | 0.00 | 3.86 | 0.00 | 0.00 | 3.86 | N/A | 24.09 | 490.95 | 26.06 | 86.82 | 627.92 |
| 4A | N/A | 0.00 | 5.85 | 0.00 | 0.00 | 5.85 | N/A | 24.09 | 496.80 | 26.06 | 86.82 | 633.78 |
| 4B | N/A | 0.00 | 48.09 | 1.01 | 6.47 | 55.57 | N/A | 24.09 | 544.89 | 27.07 | 93.30 | 689.34 |
| WB | | | | | | | | | | | | |
| 29A | 4.55 | 1.31 | 10.53 | 2.82 | 2.31 | 21.52 | 43.82 | 12.61 | 56.22 | 39.46 | 35.22 | 187.33 |
| 29F | 3.32 | 0.96 | 1.26 | 0.00 | 0.00 | 5.54 | 47.14 | 13.57 | 57.48 | 39.46 | 35.22 | 192.87 |
| 29G | 11.03 | 3.18 | 5.99 | 0.00 | -8.30 | 11.90 | 58.17 | 16.75 | 63.47 | 39.46 | 26.92 | 204.77 |
| 29H | 6.87 | 1.98 | 5.68 | 0.00 | 0.00 | 14.53 | 65.04 | 18.73 | 69.15 | 39.46 | 26.92 | 219.30 |
| 29J | 11.51 | 3.32 | 1.63 | 0.00 | -15.52 | 0.94 | 76.55 | 22.05 | 70.78 | 39.46 | 11.40 | 220.24 |
| 30 | 18.47 | 5.33 | 5.10 | 0.00 | 0.00 | 28.90 | 95.02 | 27.38 | 75.88 | 39.46 | 11.40 | 249.14 |
| CB | | | | | | | | | | | | |
| 31A | 8.36 | 2.41 | 24.05 | 2.10 | 1.98 | 38.90 | 17.05 | 4.91 | 33.13 | 6.13 | 5.56 | 66.78 |
| 33A | 312.23 | 90.03 | 45.36 | 15.12 | 25.93 | 488.67 | 329.28 | 94.94 | 78.49 | 21.25 | 31.49 | 555.45 |
| 34 | 223.08 | 64.32 | 1.26 | 0.00 | 0.00 | 288.66 | 552.36 | 159.26 | 79.75 | 21.25 | 31.49 | 844.11 |
| 35 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 552.36 | 159.26 | 79.75 | 21.25 | 31.49 | 844.11 |

^a Representative of transportation unit costs only; does not include a unit cost of conservation. The Delta Water Rate should be added to these values in order to approximate unit costs at canalside. Includes surplus water prior to May 1, 1973.

^b Hypothetical charges which, if assessed on all Table A water delivered to date, all surplus water delivered prior to May 1, 1973, and all Table A water estimated to be delivered during the remainder of the project repayment period (Table B-5B), would provide a sum at the end of the period financially equivalent to all Transportation Charges required under the water supply contract considering interest rate at the Project Interest Rate of 4.610 percent per annum.

^c The Water System Revenue Bond (WSRB) Surcharge equivalent unit rate is calculated by multiplying Column 1 by the ratio of the 2020 WSRB surcharge to the sum of the Transportation Capital and the Capital component of the Delta Water Charge.

TABLE B-26 Capital Costs of Each Aqueduct Reach to be Reimbursed through the Capital Cost Component of the East Branch Enlargement Transportation Charge Phase 1 and Phase 2 (in dollars)

Sheet 1 of 2

| Calendar Year | CALIFORNIA AQUEDUCT | | | | | | | |
|---------------|---------------------|------------------|------------------|------------------|-------------------|------------------|--------------------|-------------------|
| | MOJAVE DIVISION | | | | | | | |
| | Reach 18A | Reach 19 | Reach 20A | Reach 20B | Reach 21 | Reach 22A | Reach 22B | Reach 23B |
| 1952 | [1] 0 | [2] 0 | [3] 0 | [4] 0 | [5] 0 | [6] 0 | [7] 0 | [8] 0 |
| 1953 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1954 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1955 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1956 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1957 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1958 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1959 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1960 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 117,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 200,000 | 0 | 0 | 0 | 0 | 0 | 0 | 74,000 |
| 1981 | 135,000 | 0 | 0 | 0 | 0 | 0 | 0 | 385,000 |
| 1982 | 1,503,000 | 0 | 0 | 0 | 0 | 0 | 0 | 1,586,000 |
| 1983 | 2,260,000 | 0 | 0 | 0 | 0 | 0 | 0 | 2,965,000 |
| 1984 | 735,000 | 0 | 0 | 0 | 0 | 0 | 796,000 | 1,380,000 |
| 1985 | 93,000 | 435,000 | 75,000 | 544,000 | 859,000 | 703,000 | 970,000 | 146,000 |
| 1986 | 784,000 | 4,477,000 | 3,144,000 | 2,234,000 | 1,569,000 | 1,203,000 | 1,808,000 | 34,000 |
| 1987 | 11,000 | 951,000 | 1,076,000 | 666,000 | 399,000 | 47,000 | 16,421,000 | 43,000 |
| 1988 | 1,000 | 125,000 | 1,681,000 | 1,730,000 | 2,024,000 | 40,000 | 13,326,000 | 70,000 |
| 1989 | 0 | 206,000 | 2,089,000 | 2,174,000 | 2,510,000 | 61,000 | 11,242,000 | 229,000 |
| 1990 | 1,000 | 577,000 | 903,000 | 735,000 | 928,000 | 194,000 | 20,131,000 | 887,000 |
| 1991 | 1,000 | 280,000 | 413,000 | 333,000 | 422,000 | 93,000 | 20,702,000 | 1,215,000 |
| 1992 | 0 | 40,000 | 41,000 | 39,000 | 35,000 | 13,000 | 9,599,000 | 3,719,000 |
| 1993 | 0 | 19,000 | 16,000 | 19,000 | 12,000 | 6,000 | 2,319,000 | 19,654,000 |
| 1994 | 0 | 2,000 | 3,000 | 2,000 | 4,000 | 3,000 | 803,000 | 3,173,000 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 223,000 | 1,465,000 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 6,014,000 | 478,000 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 404,000 | 1,327,000 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2004 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2005 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2006 | 0 | 4,366 | 0 | 22,095 | 37,971 | 0 | 67,871 | 0 |
| 2007 | 0 | 34,564 | 0 | 174,915 | 300,601 | 0 | 537,312 | 0 |
| 2008 | 0 | 67,077 | 0 | 339,450 | 583,367 | 0 | 1,042,743 | 0 |
| 2009 | 0 | 90,089 | 0 | 455,906 | 783,502 | 0 | 1,400,476 | 0 |
| 2010 | 0 | 21,120 | 0 | 106,881 | 183,682 | 0 | 328,324 | 0 |
| 2011 | 0 | 16,403 | 0 | 83,011 | 142,660 | 0 | 254,998 | 0 |
| 2012 | 0 | 26,143 | 0 | 132,299 | 227,364 | 0 | 406,404 | 0 |
| 2013 | 0 | 690 | 0 | 3,492 | 6,002 | 0 | 10,728 | 0 |
| 2014 | 0 | 4,290 | 0 | 21,708 | 37,307 | 0 | 66,685 | 0 |
| 2015 | 0 | 3,519 | 0 | 17,808 | 30,604 | 0 | 54,704 | 0 |
| 2016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 5,841,000 | 7,380,261 | 9,441,000 | 9,833,565 | 11,095,061 | 2,363,000 | 108,928,245 | 38,830,000 |

TABLE B-26 Capital Costs of Each Aqueduct Reach to be Reimbursed through the Capital Cost Component of the East Branch Enlargement Transportation Charge Phase 1 and Phase 2 (in dollars)

Sheet 2 of 2

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | GRAND TOTAL | |
|---------------|---------------------------------|----------|--------------------|--------------------|--------------------|------------------|--------------------|--------------------|--|
| | MOJAVE DIVISION (continued) | | | SANTA ANA DIVISION | | | | | |
| | Reach 23C | Reach 24 | Total | Reach 25 | Reach 26A | Reach 26B | Total | | |
| [9] | [10] | [11] | | [12] | [13] | [14] | [15] | [16] | |
| 1952 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1953 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1954 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1955 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1956 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1957 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1958 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1959 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1960 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1966 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1968 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1969 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1979 | 0 | 0 | 117,000 | 0 | 0 | 0 | 0 | 117,000 | |
| 1980 | 0 | 0 | 274,000 | 0 | 0 | 0 | 0 | 274,000 | |
| 1981 | 0 | 0 | 520,000 | 0 | 0 | 0 | 0 | 520,000 | |
| 1982 | 0 | 0 | 3,089,000 | 0 | 0 | 0 | 0 | 3,089,000 | |
| 1983 | 0 | 0 | 5,225,000 | 0 | 0 | 0 | 0 | 5,225,000 | |
| 1984 | 0 | 0 | 2,911,000 | 0 | 0 | 0 | 0 | 2,911,000 | |
| 1985 | 0 | 0 | 3,825,000 | 0 | 528,000 | 89,000 | 617,000 | 4,442,000 | |
| 1986 | 25,000 | 0 | 15,278,000 | 0 | 1,926,000 | 154,000 | 2,080,000 | 17,358,000 | |
| 1987 | 178,000 | 0 | 19,792,000 | 0 | 3,699,000 | 437,000 | 4,136,000 | 23,928,000 | |
| 1988 | 632,000 | 0 | 19,629,000 | 0 | 5,667,000 | 3,329,000 | 8,996,000 | 28,625,000 | |
| 1989 | 1,130,000 | 0 | 19,641,000 | 0 | 40,879,000 | 1,650,000 | 42,529,000 | 62,170,000 | |
| 1990 | 2,066,000 | 0 | 26,422,000 | 0 | 29,853,000 | 1,650,000 | 31,503,000 | 57,925,000 | |
| 1991 | 4,980,000 | 0 | 28,439,000 | 0 | 26,027,000 | 999,000 | 27,026,000 | 55,465,000 | |
| 1992 | 11,920,000 | 0 | 25,406,000 | 0 | 15,317,000 | 299,000 | 15,616,000 | 41,022,000 | |
| 1993 | 16,303,000 | 0 | 38,348,000 | 0 | 4,878,000 | 0 | 4,878,000 | 43,226,000 | |
| 1994 | 7,081,000 | 0 | 11,071,000 | 0 | 3,151,000 | 0 | 3,151,000 | 14,222,000 | |
| 1995 | 5,350,000 | 0 | 7,038,000 | 0 | 2,137,000 | 0 | 2,137,000 | 9,175,000 | |
| 1996 | 1,706,000 | 0 | 8,198,000 | 0 | 9,181,000 | 0 | 9,181,000 | 17,379,000 | |
| 1997 | 1,905,000 | 0 | 3,636,000 | 0 | 175,000 | 0 | 175,000 | 3,811,000 | |
| 1998 | 28,000 | 0 | 28,000 | 0 | 0 | 0 | 0 | 28,000 | |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2003 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2004 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2005 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2006 | 0 | 0 | 132,302 | 0 | 0 | 0 | 0 | 132,302 | |
| 2007 | 0 | 0 | 1,047,392 | 0 | 0 | 0 | 0 | 1,047,392 | |
| 2008 | 0 | 0 | 2,032,638 | 0 | 0 | 0 | 0 | 2,032,638 | |
| 2009 | 0 | 0 | 2,729,973 | 0 | 0 | 0 | 0 | 2,729,973 | |
| 2010 | 0 | 0 | 640,008 | 0 | 0 | 0 | 0 | 640,008 | |
| 2011 | 0 | 0 | 497,072 | 0 | 0 | 0 | 0 | 497,072 | |
| 2012 | 0 | 0 | 792,210 | 0 | 0 | 0 | 0 | 792,210 | |
| 2013 | 0 | 0 | 20,913 | 0 | 0 | 0 | 0 | 20,913 | |
| 2014 | 0 | 0 | 129,990 | 0 | 0 | 0 | 0 | 129,990 | |
| 2015 | 0 | 0 | 106,635 | 0 | 0 | 0 | 0 | 106,635 | |
| 2016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| TOTAL | 53,304,000 | 0 | 247,016,132 | 0 | 143,418,000 | 8,607,000 | 152,025,000 | 399,041,132 | |

TABLE B-27 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of the East Branch Enlargement Transportation Charge Phase 1 and Phase 2 (in dollars)

Sheet 1 of 2

| Calendar Year | CALIFORNIA AQUEDUCT | | | | | | | |
|---------------|---------------------|---------------|---------------|---------------|---------------|---------------|-------------------|-----------|
| | MOJAVE DIVISION | | | | | | | |
| | Reach 18A | Reach 19 | Reach 20A | Reach 20B | Reach 21 | Reach 22A | Reach 22B | Reach 23B |
| [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 0 | 0 | 0 | 0 | 0 | 1,048,625 | 0 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 953,814 | 0 |
| 1996 | 0 | 0 | 0 | 0 | 0 | 0 | 1,171,411 | 0 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 0 | 1,110,038 | 0 |
| 1998 | 0 | 0 | 0 | 0 | 0 | 0 | 1,213,002 | 0 |
| 1999 | 1,229 | 517 | 646 | 409 | 383 | 169 | 668,466 | 0 |
| 2000 | 4,452 | 1,875 | 2,340 | 1,484 | 1,386 | 614 | 1,310,774 | 0 |
| 2001 | 347 | 146 | 183 | 116 | 108 | 48 | 1,034,428 | 0 |
| 2002 | 1,639 | 690 | 861 | 546 | 510 | 226 | 1,533,205 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 0 | 1,818,330 | 0 |
| 2004 | 2,132 | 27,868 | 18,579 | 18,731 | 10,355 | 8,528 | 1,473,712 | 0 |
| 2005 | 1,243 | 16,250 | 10,833 | 10,922 | 6,038 | 4,973 | 1,028,465 | 0 |
| 2006 | 3,279 | 42,860 | 28,573 | 28,807 | 15,926 | 13,116 | 1,466,838 | 0 |
| 2007 | 0 | 0 | 0 | 0 | 0 | 0 | 1,411,333 | 0 |
| 2008 | 0 | 0 | 0 | 0 | 0 | 0 | 2,068,366 | 0 |
| 2009 | (4) | (46) | (31) | (31) | (17) | (14) | 1,723,941 | 0 |
| 2010 | (1) | (8) | (5) | (5) | (3) | (2) | 1,815,042 | 0 |
| 2011 | 0 | 0 | 0 | 0 | 0 | 0 | 1,899,939 | 0 |
| 2012 | 4 | 54 | 36 | 36 | 20 | 17 | 1,912,303 | 0 |
| 2013 | 0 | 0 | 0 | 0 | 0 | 0 | 1,993,634 | 0 |
| 2014 | 231 | 3,023 | 2,015 | 2,032 | 1,123 | 925 | 2,460,914 | 0 |
| 2015 | (697) | (9,108) | (6,072) | (6,122) | (3,385) | (2,787) | 2,628,141 | 0 |
| 2016 | 0 | 0 | 0 | 0 | 0 | 0 | 2,906,921 | 0 |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 2,392,730 | 0 |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 1,840,064 | 0 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 2,719,993 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 2,729,941 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 2,847,507 | 0 |
| TOTAL | 13,855 | 84,122 | 57,959 | 56,926 | 32,445 | 25,812 | 89,046,974 | 0 |

TABLE B-27 Minimum OMP&R Costs of Each Aqueduct Reach to be Reimbursed through Minimum OMP&R Component of the East Branch Enlargement Transportation Charge Phase 1 and Phase 2 (in dollars)

Sheet 2 of 2

| Calendar Year | CALIFORNIA AQUEDUCT (continued) | | | | | | | GRAND TOTAL | |
|---------------|---------------------------------|----------|--------------------|--------------------|------------------------|-----------|--------------------|--------------------|--|
| | MOJAVE DIVISION (continued) | | | SANTA ANA DIVISION | | | | | |
| | Reach 23C | Reach 24 | Subtotal | Reach 25 | Reach 26A ^a | Reach 26B | Subtotal | | |
| [9] | [10] | [11] | | [12] | [13] | [14] | [15] | [16] | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1994 | 0 | 0 | 1,048,625 | 0 | 1,713,260 | 0 | 1,713,260 | 2,761,885 | |
| 1995 | 0 | 0 | 953,814 | 0 | 1,452,549 | 0 | 1,452,549 | 2,406,363 | |
| 1996 | 0 | 0 | 1,171,411 | 0 | 1,350,581 | 0 | 1,350,581 | 2,521,992 | |
| 1997 | 679,826 | 0 | 1,789,864 | 0 | 1,528,509 | 0 | 1,528,509 | 3,318,373 | |
| 1998 | 825,038 | 0 | 2,038,040 | 0 | 1,619,068 | 0 | 1,619,068 | 3,657,108 | |
| 1999 | 382,178 | 0 | 1,053,997 | 0 | 956,229 | 0 | 956,229 | 2,010,227 | |
| 2000 | 735,392 | 0 | 2,058,318 | 0 | 1,406,680 | 0 | 1,406,680 | 3,464,998 | |
| 2001 | 812,064 | 0 | 1,847,440 | 0 | 798,363 | 0 | 798,363 | 2,645,802 | |
| 2002 | 727,222 | 0 | 2,264,899 | 0 | 1,130,735 | 0 | 1,130,735 | 3,395,634 | |
| 2003 | 899,530 | 0 | 2,717,859 | 0 | 1,234,283 | 0 | 1,234,283 | 3,952,142 | |
| 2004 | 913,367 | 0 | 2,473,273 | 0 | 1,806,947 | 0 | 1,806,947 | 4,280,220 | |
| 2005 | 1,036,431 | 0 | 2,115,156 | 0 | 1,850,269 | 0 | 1,850,269 | 3,965,425 | |
| 2006 | 838,336 | 0 | 2,437,735 | 0 | 1,762,588 | 0 | 1,762,588 | 4,200,324 | |
| 2007 | 1,308,106 | 0 | 2,719,439 | 0 | 2,800,716 | 0 | 2,800,716 | 5,520,154 | |
| 2008 | 1,068,707 | 0 | 3,137,072 | 0 | 2,733,948 | 0 | 2,733,948 | 5,871,020 | |
| 2009 | 1,545,401 | 0 | 3,269,200 | 0 | 2,857,767 | 0 | 2,857,767 | 6,126,967 | |
| 2010 | 1,426,937 | 0 | 3,241,955 | 0 | 2,398,823 | 0 | 2,398,823 | 5,640,778 | |
| 2011 | 1,815,469 | 0 | 3,715,408 | 0 | 2,104,260 | 0 | 2,104,260 | 5,819,668 | |
| 2012 | 1,258,656 | 0 | 3,171,127 | 0 | 2,342,591 | 0 | 2,342,591 | 5,513,718 | |
| 2013 | 1,506,410 | 0 | 3,500,043 | 0 | 2,760,556 | 0 | 2,760,556 | 6,260,600 | |
| 2014 | 1,858,270 | 0 | 4,328,533 | 0 | 3,220,873 | 0 | 3,220,873 | 7,549,406 | |
| 2015 | 1,953,772 | 0 | 4,553,742 | 0 | 4,426,564 | 0 | 4,426,564 | 8,980,306 | |
| 2016 | 2,222,393 | 0 | 5,129,313 | 0 | 3,950,990 | 0 | 3,950,990 | 9,080,304 | |
| 2017 | 2,256,304 | 0 | 4,649,035 | 0 | 3,943,827 | 0 | 3,943,827 | 8,592,862 | |
| 2018 | 2,695,399 | 0 | 4,535,463 | 0 | 4,774,848 | 0 | 4,774,848 | 9,310,312 | |
| 2019 | 3,103,886 | 0 | 5,823,879 | 0 | 5,875,740 | 0 | 5,875,740 | 11,699,619 | |
| 2020 | 3,117,112 | 0 | 5,847,053 | 0 | 5,069,625 | 0 | 5,069,625 | 10,916,678 | |
| 2021 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2022 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2023 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2024 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2025 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2026 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2027 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2028 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2029 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2030 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2031 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2032 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2033 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2034 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| 2035 | 3,134,648 | 0 | 5,982,155 | 0 | 5,629,536 | 0 | 5,629,536 | 11,611,691 | |
| TOTAL | 82,005,927 | 0 | 171,324,019 | 0 | 152,314,229 | 0 | 152,314,229 | 323,638,249 | |

^a Units 3 and 4 at Devil Canyon Powerplant were operational in 1993.

TABLE B-28 Capital Costs of East Branch Enlargement Transportation Facilities Allocated to Each Contractor Phase 1 and Phase 2 (in dollars)

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | Total |
|---------------|--------------------------|-------------------|-------------------|-------------------|----------------|------------------|--------------------|--------------------|
| | AVEK | Coachella | Desert | Mojave | Palmdale | San Bernardino | Metropolitan | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 11,731 | 1,010 | 10,566 | 466 | 0 | 93,227 | 117,000 |
| 1980 | 0 | 28,241 | 4,708 | 27,495 | 797 | 0 | 212,759 | 274,000 |
| 1981 | 0 | 56,134 | 16,676 | 61,271 | 538 | 0 | 385,381 | 520,000 |
| 1982 | 0 | 326,180 | 76,872 | 337,913 | 5,988 | 0 | 2,342,047 | 3,089,000 |
| 1983 | 0 | 554,658 | 138,964 | 582,070 | 9,004 | 0 | 3,940,304 | 5,225,000 |
| 1984 | 0 | 306,514 | 68,842 | 314,468 | 2,928 | 0 | 2,218,248 | 2,911,000 |
| 1985 | 49,675 | 447,266 | 65,773 | 347,262 | 4,514 | 21,614 | 3,505,896 | 4,442,000 |
| 1986 | 185,353 | 1,757,633 | 236,324 | 1,363,586 | 41,900 | 78,842 | 13,694,362 | 17,358,000 |
| 1987 | 49,735 | 2,455,279 | 378,535 | 1,774,447 | 10,615 | 151,421 | 19,107,968 | 23,928,000 |
| 1988 | 124,534 | 2,689,959 | 500,466 | 1,712,431 | 13,783 | 231,982 | 23,351,845 | 28,625,000 |
| 1989 | 155,446 | 7,118,094 | 2,423,000 | 1,671,088 | 17,419 | 1,673,409 | 49,111,544 | 62,170,000 |
| 1990 | 62,786 | 6,459,229 | 1,943,918 | 2,234,452 | 8,680 | 1,222,053 | 45,993,882 | 57,925,000 |
| 1991 | 28,686 | 6,265,822 | 1,875,066 | 2,168,712 | 4,024 | 1,065,433 | 44,057,257 | 55,465,000 |
| 1992 | 2,911 | 4,826,764 | 1,610,921 | 1,359,335 | 471 | 627,012 | 32,594,586 | 41,022,000 |
| 1993 | 1,205 | 5,094,237 | 1,828,410 | 2,722,156 | 212 | 199,684 | 33,380,096 | 43,226,000 |
| 1994 | 273 | 1,726,376 | 631,816 | 478,543 | 27 | 128,988 | 11,255,977 | 14,222,000 |
| 1995 | 0 | 1,130,963 | 423,243 | 206,978 | 0 | 87,480 | 7,326,336 | 9,175,000 |
| 1996 | 0 | 2,025,987 | 645,296 | 606,205 | 0 | 375,830 | 13,725,682 | 17,379,000 |
| 1997 | 0 | 451,011 | 154,366 | 205,796 | 0 | 7,164 | 2,992,663 | 3,811,000 |
| 1998 | 0 | 3,551 | 1,293 | 0 | 0 | 0 | 23,156 | 28,000 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2001 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2003 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2004 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2005 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2006 | 1,368 | 13,170 | 1,134 | 11,862 | 103 | 0 | 104,665 | 132,302 |
| 2007 | 10,827 | 104,265 | 8,976 | 93,908 | 819 | 0 | 828,597 | 1,047,392 |
| 2008 | 21,011 | 202,344 | 17,420 | 182,243 | 1,589 | 0 | 1,608,031 | 2,032,638 |
| 2009 | 28,220 | 271,762 | 23,397 | 244,765 | 2,134 | 0 | 2,159,695 | 2,729,973 |
| 2010 | 6,616 | 63,711 | 5,485 | 57,382 | 500 | 0 | 506,314 | 640,008 |
| 2011 | 5,138 | 49,482 | 4,260 | 44,567 | 389 | 0 | 393,236 | 497,072 |
| 2012 | 8,189 | 78,862 | 6,789 | 71,028 | 619 | 0 | 626,723 | 792,210 |
| 2013 | 216 | 2,082 | 179 | 1,875 | 16 | 0 | 16,545 | 20,913 |
| 2014 | 1,344 | 12,940 | 1,114 | 11,655 | 102 | 0 | 102,835 | 129,990 |
| 2015 | 1,102 | 10,615 | 914 | 9,561 | 83 | 0 | 84,360 | 106,635 |
| 2016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2026 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2027 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2028 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2029 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2030 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2032 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2033 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2035 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 744,635 | 44,544,862 | 13,095,167 | 18,913,620 | 127,720 | 5,870,912 | 315,744,216 | 399,041,132 |

TABLE B-29 Capital Cost Component of East Branch Enlargement Facilities Transportation Charge for Each Contractor^{a,b} (in dollars)

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | Total |
|---------------|--------------------------|--------------------|-------------------|-------------------|----------------|-----------------------------|--------------------|----------------------|
| | AVEK | Coachella | Desert | Mojave | Palmdale | San Bernardino ^c | Metropolitan | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 18,266 | 1,209,293 | 360,156 | 502,810 | 3,356 | 0 | 8,552,529 | 10,646,410 |
| 1989 | 19,176 | 1,269,524 | 378,094 | 527,854 | 3,523 | 0 | 8,978,504 | 11,176,675 |
| 1990 | 19,186 | 1,270,244 | 378,308 | 528,153 | 3,525 | 0 | 8,983,597 | 11,183,013 |
| 1991 | 19,187 | 1,270,261 | 378,314 | 528,160 | 3,525 | 0 | 8,983,717 | 11,183,164 |
| 1992 | 38,420 | 2,543,616 | 757,549 | 1,057,606 | 7,059 | 0 | 17,989,315 | 22,393,565 |
| 1993 | 40,029 | 2,650,139 | 789,274 | 1,101,897 | 7,354 | 0 | 18,742,682 | 23,331,375 |
| 1994 | 39,705 | 2,628,706 | 782,890 | 1,092,986 | 7,295 | 0 | 18,591,099 | 23,142,681 |
| 1995 | 39,632 | 2,623,828 | 781,438 | 1,090,958 | 7,281 | 0 | 18,556,603 | 23,099,740 |
| 1996 | 39,825 | 2,636,667 | 785,261 | 1,096,296 | 7,317 | 0 | 18,647,406 | 23,212,772 |
| 1997 | 41,743 | 2,763,629 | 823,074 | 1,149,085 | 7,669 | 0 | 19,545,322 | 24,330,522 |
| 1998 | 42,642 | 2,823,126 | 840,793 | 1,173,823 | 7,834 | 0 | 19,966,108 | 24,854,326 |
| 1999 | 44,738 | 2,961,887 | 882,120 | 1,231,519 | 8,219 | 0 | 20,947,475 | 26,075,958 |
| 2000 | 49,031 | 3,246,109 | 966,768 | 1,349,695 | 9,008 | 0 | 22,957,586 | 28,578,197 |
| 2001 | 49,048 | 3,247,263 | 967,111 | 1,350,175 | 9,011 | 0 | 22,965,748 | 28,588,356 |
| 2002 | 47,894 | 3,170,848 | 944,353 | 1,318,402 | 8,799 | 0 | 22,425,318 | 27,915,614 |
| 2003 | 40,765 | 2,698,871 | 803,787 | 1,122,160 | 7,489 | 0 | 19,087,337 | 23,760,409 |
| 2004 | 44,199 | 2,926,222 | 871,498 | 1,216,690 | 8,120 | 0 | 20,695,237 | 25,761,966 |
| 2005 | 33,144 | 2,194,299 | 653,514 | 912,364 | 6,089 | 0 | 15,518,826 | 19,318,236 |
| 2006 | 46,979 | 3,110,276 | 926,313 | 1,293,217 | 8,631 | 0 | 21,996,926 | 27,382,342 |
| 2007 | 45,289 | 2,998,370 | 892,985 | 1,246,688 | 8,321 | 0 | 21,205,488 | 26,397,141 |
| 2008 | 42,491 | 2,813,118 | 837,813 | 1,169,662 | 7,806 | 0 | 19,895,328 | 24,766,218 |
| 2009 | 43,670 | 2,891,182 | 861,062 | 1,202,121 | 8,023 | 0 | 20,447,424 | 25,453,482 |
| 2010 | 44,839 | 2,968,619 | 884,125 | 1,234,318 | 8,238 | 0 | 20,995,084 | 26,135,223 |
| 2011 | 43,190 | 2,859,419 | 851,602 | 1,188,914 | 7,935 | 0 | 20,222,785 | 25,173,845 |
| 2012 | 43,704 | 2,893,449 | 861,737 | 1,203,063 | 8,029 | 0 | 20,463,459 | 25,473,441 |
| 2013 | 37,663 | 2,493,469 | 742,614 | 1,036,756 | 6,919 | 0 | 17,634,660 | 21,952,081 |
| 2014 | 39,985 | 2,647,224 | 788,406 | 1,100,685 | 7,346 | 0 | 18,722,067 | 23,305,713 |
| 2015 | 44,642 | 2,955,568 | 880,238 | 1,228,892 | 8,202 | 0 | 20,902,785 | 26,020,327 |
| 2016 | 44,525 | 2,947,802 | 877,925 | 1,225,662 | 8,180 | 0 | 20,847,856 | 25,951,950 |
| 2017 | 45,830 | 3,034,222 | 903,663 | 1,261,595 | 8,420 | 0 | 21,459,047 | 26,712,777 |
| 2018 | 43,516 | 2,880,977 | 858,023 | 1,197,877 | 7,995 | 0 | 20,375,245 | 25,363,633 |
| 2019 | 62,414 | 4,208,395 | 1,263,435 | 1,718,117 | 11,467 | 0 | 29,698,069 | 36,961,897 |
| 2020 | 61,498 | 4,137,896 | 1,241,145 | 1,692,875 | 11,299 | 0 | 29,207,844 | 36,352,557 |
| 2021 | 62,760 | 4,229,161 | 1,269,334 | 1,727,653 | 11,531 | 0 | 29,846,788 | 37,147,227 |
| 2022 | 60,366 | 4,066,179 | 1,220,206 | 1,661,734 | 11,091 | 0 | 28,697,919 | 35,717,495 |
| 2023 | 49,648 | 3,345,502 | 1,004,108 | 1,366,688 | 9,121 | 0 | 23,610,509 | 29,385,576 |
| 2024 | 52,180 | 3,513,606 | 1,054,236 | 1,436,386 | 9,587 | 0 | 24,798,985 | 30,864,980 |
| 2025 | 59,616 | 4,006,892 | 1,201,274 | 1,641,091 | 10,953 | 0 | 28,286,853 | 35,206,679 |
| 2026 | 22,827 | 1,555,088 | 468,933 | 628,378 | 4,194 | 0 | 10,960,679 | 13,640,099 |
| 2027 | 23,456 | 1,599,253 | 482,421 | 645,688 | 4,309 | 0 | 11,270,862 | 14,025,989 |
| 2028 | 15,305 | 1,040,817 | 313,627 | 421,288 | 2,812 | 0 | 7,337,426 | 9,131,275 |
| 2029 | 15,948 | 1,085,245 | 327,101 | 439,000 | 2,930 | 0 | 7,650,082 | 9,520,306 |
| 2030 | 3,373 | 223,320 | 66,510 | 92,854 | 620 | 0 | 1,579,389 | 1,966,066 |
| 2031 | 3,361 | 222,515 | 66,270 | 92,519 | 617 | 0 | 1,573,702 | 1,958,984 |
| 2032 | 3,367 | 222,922 | 66,391 | 92,689 | 619 | 0 | 1,576,583 | 1,962,571 |
| 2033 | 3,363 | 222,620 | 66,301 | 92,563 | 618 | 0 | 1,574,441 | 1,959,906 |
| 2034 | 3,367 | 222,934 | 66,395 | 92,693 | 619 | 0 | 1,576,658 | 1,962,666 |
| 2035 | 3,369 | 223,015 | 66,419 | 92,726 | 619 | 0 | 1,577,233 | 1,963,381 |
| TOTAL | 1,739,171 | 115,753,587 | 34,554,914 | 47,875,025 | 319,524 | 0 | 818,126,585 | 1,018,368,806 |

^a 1988 through 2018 charges are debt service only and do not include bond cover; 2019 charges and after include both debt service and bond cover.

^b East Branch Enlargement Phase 2 debt service schedule started in 2017, and this table is the sum of East Branch Enlargement Phase 1 and Phase 2 capital charges for each contractor.

^c Under Article 49(d)(4)(A) of its contract, San Bernardino Valley Municipal Water District elected to pay a portion of its allocated costs of East Branch Enlargement in advance rather than to participate in payment of Water System Revenue Bonds. This election was made via a letter of agreement signed June 1, 1987. As of June 1999, \$6,347,938 has been received from the San Bernardino Valley Municipal Water District.

TABLE B-30 Minimum OMP&R Component of East Branch Enlargement Facilities Transportation Charge for Each Contractor (in dollars)

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | Total |
|---------------|--------------------------|-------------------|-------------------|------------------|------------|------------------|--------------------|--------------------|
| | AVEK | Coachella | Desert | Mojave | Palmdale | San Bernardino | Metropolitan | |
| 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1989 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1991 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1992 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1993 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1994 | 0 | 320,415 | 101,486 | 95,075 | 0 | 70,133 | 2,174,776 | 2,761,885 |
| 1995 | 0 | 278,176 | 86,604 | 86,479 | 0 | 59,461 | 1,895,643 | 2,406,363 |
| 1996 | 0 | 287,293 | 82,991 | 106,208 | 0 | 55,287 | 1,990,213 | 2,521,992 |
| 1997 | 0 | 389,636 | 123,446 | 100,643 | 0 | 62,571 | 2,642,077 | 3,318,373 |
| 1998 | 0 | 429,772 | 135,927 | 109,979 | 0 | 66,278 | 2,915,152 | 3,657,108 |
| 1999 | 37 | 236,006 | 75,040 | 60,907 | 11 | 39,144 | 1,599,082 | 2,010,227 |
| 2000 | 132 | 402,818 | 121,284 | 119,930 | 40 | 57,583 | 2,763,211 | 3,464,998 |
| 2001 | 10 | 307,323 | 89,527 | 93,873 | 3 | 32,682 | 2,122,384 | 2,645,802 |
| 2002 | 49 | 388,806 | 107,887 | 139,410 | 15 | 46,287 | 2,713,180 | 3,395,634 |
| 2003 | 0 | 451,900 | 123,861 | 164,862 | 0 | 50,526 | 3,160,993 | 3,952,142 |
| 2004 | 1,278 | 499,301 | 153,131 | 141,292 | 265 | 73,969 | 3,410,984 | 4,280,220 |
| 2005 | 745 | 471,965 | 156,985 | 97,723 | 154 | 75,742 | 3,162,111 | 3,965,425 |
| 2006 | 1,965 | 488,115 | 147,609 | 144,797 | 407 | 72,153 | 3,345,278 | 4,200,324 |
| 2007 | 0 | 659,181 | 223,679 | 127,961 | 0 | 114,649 | 4,394,684 | 5,520,154 |
| 2008 | 0 | 686,591 | 214,718 | 187,532 | 0 | 111,916 | 4,670,264 | 5,871,021 |
| 2009 | (2) | 727,882 | 240,421 | 156,291 | 0 | 116,985 | 4,885,392 | 6,126,969 |
| 2010 | 0 | 664,487 | 210,990 | 164,562 | 0 | 98,197 | 4,502,540 | 5,640,776 |
| 2011 | 0 | 685,366 | 213,781 | 172,261 | 0 | 86,139 | 4,662,122 | 5,819,669 |
| 2012 | 2 | 645,906 | 201,032 | 173,397 | 1 | 95,896 | 4,397,485 | 5,513,719 |
| 2013 | 0 | 737,910 | 235,717 | 180,756 | 0 | 113,005 | 4,993,212 | 6,260,600 |
| 2014 | 139 | 888,219 | 280,919 | 223,955 | 29 | 131,849 | 6,024,297 | 7,549,407 |
| 2015 | (418) | 1,064,655 | 351,482 | 235,776 | (87) | 181,204 | 7,147,692 | 8,980,304 |
| 2016 | 0 | 1,069,928 | 340,894 | 263,561 | 0 | 161,736 | 7,244,184 | 9,080,303 |
| 2017 | 0 | 1,021,568 | 337,617 | 216,941 | 0 | 161,443 | 6,855,292 | 8,592,861 |
| 2018 | 0 | 1,125,829 | 397,920 | 166,833 | 0 | 195,462 | 7,424,268 | 9,310,312 |
| 2019 | 0 | 1,404,267 | 483,781 | 246,613 | 0 | 240,527 | 9,324,431 | 11,699,619 |
| 2020 | 0 | 1,305,854 | 441,003 | 247,515 | 0 | 207,528 | 8,714,778 | 10,916,678 |
| 2021 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2022 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2023 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2024 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2025 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2026 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2027 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2028 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2029 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2030 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2031 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2032 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2033 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2034 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| 2035 | 0 | 1,390,129 | 473,028 | 258,174 | 0 | 230,449 | 9,259,911 | 11,611,691 |
| TOTAL | 3,937 | 38,491,104 | 12,775,152 | 8,097,742 | 838 | 6,235,087 | 258,034,389 | 323,638,249 |

TABLE B-31 Total East Branch Enlargement Facilities Transportation Charge for Each Contractor (in dollars)

| Calendar Year | SOUTHERN CALIFORNIA AREA | | | | | | | Total |
|---------------|--------------------------|--------------------|-------------------|-------------------|----------------|------------------|----------------------|----------------------|
| | AVEK | Coachella | Desert | Mojave | Palmdale | San Bernardino | Metropolitan | |
| 1971 | [1] 0 | [2] 0 | [3] 0 | [4] 0 | [5] 0 | [6] 0 | [7] 0 | [8] 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1981 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1986 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1988 | 18,266 | 1,209,293 | 360,156 | 502,810 | 3,356 | 0 | 8,552,529 | 10,646,410 |
| 1989 | 19,176 | 1,269,524 | 378,094 | 527,854 | 3,523 | 0 | 8,978,504 | 11,176,675 |
| 1990 | 19,186 | 1,270,244 | 378,308 | 528,153 | 3,525 | 0 | 8,983,597 | 11,183,013 |
| 1991 | 19,187 | 1,270,261 | 378,314 | 528,160 | 3,525 | 0 | 8,983,717 | 11,183,164 |
| 1992 | 38,420 | 2,543,616 | 757,549 | 1,057,606 | 7,059 | 0 | 17,989,315 | 22,393,565 |
| 1993 | 40,029 | 2,650,139 | 789,274 | 1,101,897 | 7,354 | 0 | 18,742,682 | 23,331,375 |
| 1994 | 39,705 | 2,949,121 | 884,376 | 1,188,061 | 7,295 | 70,133 | 20,765,875 | 25,904,566 |
| 1995 | 39,632 | 2,902,004 | 868,042 | 1,177,437 | 7,281 | 59,461 | 20,452,246 | 25,506,103 |
| 1996 | 39,825 | 2,923,960 | 868,252 | 1,202,504 | 7,317 | 55,287 | 20,637,619 | 25,734,764 |
| 1997 | 41,743 | 3,153,265 | 946,520 | 1,249,728 | 7,669 | 62,571 | 22,187,399 | 27,648,895 |
| 1998 | 42,642 | 3,252,898 | 976,720 | 1,283,802 | 7,834 | 66,278 | 22,881,260 | 28,511,434 |
| 1999 | 44,775 | 3,197,893 | 957,160 | 1,292,426 | 8,230 | 39,144 | 22,546,557 | 28,086,185 |
| 2000 | 49,163 | 3,648,927 | 1,088,052 | 1,469,625 | 9,048 | 57,583 | 25,720,797 | 32,043,195 |
| 2001 | 49,058 | 3,554,586 | 1,056,638 | 1,444,048 | 9,014 | 32,682 | 25,088,132 | 31,234,158 |
| 2002 | 47,943 | 3,559,654 | 1,052,240 | 1,457,812 | 8,814 | 46,287 | 25,138,498 | 31,311,248 |
| 2003 | 40,765 | 3,150,771 | 927,648 | 1,287,022 | 7,489 | 50,526 | 22,248,330 | 27,712,551 |
| 2004 | 45,477 | 3,425,523 | 1,024,629 | 1,357,982 | 8,385 | 73,969 | 24,106,221 | 30,042,186 |
| 2005 | 33,889 | 2,666,264 | 810,499 | 1,010,087 | 6,243 | 75,742 | 18,680,937 | 23,283,661 |
| 2006 | 48,944 | 3,598,391 | 1,073,922 | 1,438,014 | 9,038 | 72,153 | 25,342,204 | 31,582,666 |
| 2007 | 45,289 | 3,657,551 | 1,116,664 | 1,374,649 | 8,321 | 114,649 | 25,600,172 | 31,917,295 |
| 2008 | 42,491 | 3,499,709 | 1,052,531 | 1,357,194 | 7,806 | 111,916 | 24,565,592 | 30,637,239 |
| 2009 | 43,668 | 3,619,064 | 1,101,483 | 1,358,412 | 8,023 | 116,985 | 25,332,816 | 31,580,451 |
| 2010 | 44,839 | 3,633,106 | 1,095,115 | 1,398,880 | 8,238 | 98,197 | 25,497,624 | 31,775,999 |
| 2011 | 43,190 | 3,544,785 | 1,065,383 | 1,361,175 | 7,935 | 86,139 | 24,884,907 | 30,993,514 |
| 2012 | 43,706 | 3,539,355 | 1,062,769 | 1,376,460 | 8,030 | 95,896 | 24,860,944 | 30,987,160 |
| 2013 | 37,663 | 3,231,379 | 978,331 | 1,217,512 | 6,919 | 113,005 | 22,627,872 | 28,212,681 |
| 2014 | 40,124 | 3,535,443 | 1,069,325 | 1,324,640 | 7,375 | 131,849 | 24,746,364 | 30,855,120 |
| 2015 | 44,224 | 4,020,223 | 1,231,720 | 1,464,668 | 8,115 | 181,204 | 28,050,477 | 35,000,631 |
| 2016 | 44,525 | 4,017,730 | 1,218,819 | 1,489,223 | 8,180 | 161,736 | 28,092,040 | 35,032,253 |
| 2017 | 45,830 | 4,055,790 | 1,241,280 | 1,478,536 | 8,420 | 161,443 | 28,314,339 | 35,305,638 |
| 2018 | 43,516 | 4,006,806 | 1,255,943 | 1,364,710 | 7,995 | 195,462 | 27,799,513 | 34,673,945 |
| 2019 | 62,414 | 5,612,662 | 1,747,216 | 1,964,730 | 11,467 | 240,527 | 39,022,500 | 48,661,516 |
| 2020 | 61,498 | 5,443,750 | 1,682,148 | 1,940,390 | 11,299 | 207,528 | 37,922,622 | 47,269,235 |
| 2021 | 62,760 | 5,619,290 | 1,742,362 | 1,985,827 | 11,531 | 230,449 | 39,106,699 | 48,758,918 |
| 2022 | 60,366 | 5,456,308 | 1,693,234 | 1,919,908 | 11,091 | 230,449 | 37,957,830 | 47,329,186 |
| 2023 | 49,648 | 4,735,631 | 1,477,136 | 1,624,862 | 9,121 | 230,449 | 32,870,420 | 40,997,267 |
| 2024 | 52,180 | 4,903,735 | 1,527,264 | 1,694,560 | 9,587 | 230,449 | 34,058,896 | 42,476,671 |
| 2025 | 59,616 | 5,397,021 | 1,674,302 | 1,899,265 | 10,953 | 230,449 | 37,546,764 | 46,818,370 |
| 2026 | 22,827 | 2,945,217 | 941,961 | 886,552 | 4,194 | 230,449 | 20,220,590 | 25,251,790 |
| 2027 | 23,456 | 2,989,382 | 955,449 | 903,862 | 4,309 | 230,449 | 20,530,773 | 25,637,680 |
| 2028 | 15,305 | 2,430,946 | 786,655 | 679,462 | 2,812 | 230,449 | 16,597,337 | 20,742,966 |
| 2029 | 15,948 | 2,475,374 | 800,129 | 697,174 | 2,930 | 230,449 | 16,909,993 | 21,131,997 |
| 2030 | 3,373 | 1,613,449 | 539,538 | 351,028 | 620 | 230,449 | 10,839,300 | 13,577,757 |
| 2031 | 3,361 | 1,612,644 | 539,298 | 350,693 | 617 | 230,449 | 10,833,613 | 13,570,675 |
| 2032 | 3,367 | 1,613,051 | 539,419 | 350,863 | 619 | 230,449 | 10,836,494 | 13,574,262 |
| 2033 | 3,363 | 1,612,749 | 539,329 | 350,737 | 618 | 230,449 | 10,834,352 | 13,571,597 |
| 2034 | 3,367 | 1,613,063 | 539,423 | 350,867 | 619 | 230,449 | 10,836,569 | 13,574,357 |
| 2035 | 3,369 | 1,613,144 | 539,447 | 350,900 | 619 | 230,449 | 10,837,144 | 13,577,072 |
| TOTAL | 1,743,108 | 154,244,691 | 47,330,066 | 55,972,767 | 320,362 | 6,235,087 | 1,076,160,974 | 1,342,007,055 |

| CONVERSION FACTORS | | | | |
|---|---|---|-------------------------------|---|
| Quantity | To convert from customary unit | To metric units | Multiply customary unit by | To convert to customary unit, multiply metric unit by |
| Length | inches (in) | millimeters (mm)● | 25.4 | 0.03937 |
| | inches (in) | centimeters (cm) | 2.54 | 0.3937 |
| | feet (ft) | meters (m) | 0.3048 | 3.2808 |
| | miles (mi) | kilometers (km) | 1.6093 | 0.62139 |
| Area | square inches (in^2) | square millimeters (mm^2) | 645.16 | 0.00155 |
| | square feet (ft^2) | square meters (m^2) | 0.092903 | 10.764 |
| | acres (ac) | hectares (ha) | 0.40469 | 2.4710 |
| | square miles (mi^2) | square kilometers (km^2) | 2.590 | 0.3861 |
| Volume | gallons (gal) | liters (L) | 3.7854 | 0.26417 |
| | million gallons (10^6 gal) | megaliters (ML) | 3.7854 | 0.26417 |
| | cubic feet (ft^3) | cubic meters (m^3) | 0.028317 | 35.315 |
| | cubic yards (yd^3) | cubic meters (m^3) | 0.76455 | 1.308 |
| | acre-feet (af) | thousand cubic meters ($\text{m}^3 \times 10^3$) | 1.2335 | 0.8107 |
| | acre-feet (af) | hectare-meters (ha - m)■ | 0.1234 | 8.107 |
| | thousand acre-feet (taf) | million cubic meters ($\text{m}^3 \times 10^6$) | 1.2335 | 0.8107 |
| | thousand acre-feet (taf) | hectare-meters (ha - m)■ | 123.35 | 0.008107 |
| | million acre-feet (maf) | billion cubic meters ($\text{m}^3 \times 10^9$)◆ | 1.2335 | 0.8107 |
| | million acre-feet (maf) | cubic kilometers (km^3) | 1.2335 | 0.8107 |
| Flow | cubic feet per second (ft^3/s) | cubic meters per second (m^3/s) | 0.028317 | 35.315 |
| | gallons per minute (gal/min) | liters per minute (L/min) | 3.7854 | 0.26417 |
| | gallons per day (gal/day) | liters per day (L/day) | 3.7854 | 0.26417 |
| | million gallons per day (mgd) | megaliters per day (ML/day) | 3.7854 | 0.26417 |
| | acre-feet per day (af/day) | thousand cubic meters per day ($\text{m}^3 \times 10^3/\text{day}$) | 1.2335 | 0.8107 |
| Mass | pounds (lb) | kilograms (kg) | 0.45359 | 2.2046 |
| | tons (short, 2,000 lb) | megagrams (Mg) | 0.90718 | 1.1023 |
| Velocity | feet per second (ft/s) | meters per second (m/s) | 0.3048 | 3.2808 |
| Power | horsepower (hp) | kilowatts (kW) | 0.746 | 1.3405 |
| Pressure | pounds per square inch (psi) | kilopascals (kPa) | 6.8948 | 0.14505 |
| | feet head of water | kilopascals (kPa) | 2.989 | 0.32456 |
| Specific capacity | gallons per minute per foot of drawdown | liters per minute per meter of drawdown | 12.419 | 0.08052 |
| Concentration | parts per million (ppm) | milligrams per liter (mg/L) | 1.0 | 1.0 |
| Electrical conductivity | micromhos per centimeter ($\mu\text{mhos}/\text{cm}$) | microsiemens per centimeter ($\mu\text{S}/\text{cm}$) | 1.0 | 1.0 |
| Temperature | degrees Fahrenheit ($^{\circ}\text{F}$) | degrees Celsius ($^{\circ}\text{C}$) | $(^{\circ}\text{F} - 32)/1.8$ | $(1.8 \times ^{\circ}\text{C}) + 32$ |
| <ul style="list-style-type: none"> ● When using "dual units," inches are normally converted to millimeters (rather than centimeters). ■ Not used often in metric countries, but is offered as a conceptual equivalent of customary western U.S. practice (a standard depth of water over a given area of land). ◆ ASTM Manual E380 discourages the use of billion cubic meters since that magnitude is represented by giga (a thousand million) in other countries. It is shown here for potential use for quantifying large reservoir volumes (similar to million acre-feet). | | | | |
| OTHER COMMON CONVERSION FACTORS | | | | |
| 1 cubic foot=7.48 gallons=62.4 pounds of water | | 1 acre-foot=approximately 325,851 gallons=43,560 cubic feet | | |
| 1 cubic foot per second (cfs)=450 gallons per minute (gpm) | | 1 million gallons=3.07 acre-feet | | |
| 1 cfs=646,320 gallons per day=1.98 af a day | | 1 million gallons per day (mgd)=1,120 af a year | | |



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