STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

In the Matter of New Melones Permits 16597, 16600 and 20245 (Application A014585A, A019304 and 14858B)

U.S. Bureau of Reclamation

ORDER APPROVING IN PART AND DENYING IN PART A PETITION FOR TEMPORARY URGENCY CHANGES IN PERMIT TERMS AND CONDITIONS REQUIRING COMPLIANCE WITH SAN JOAQUIN RIVER FLOWS

BY THE EXECUTIVE DIRECTOR

1.0 INTRODUCTION

On April 1, 2016, the United States Bureau of Reclamation (Reclamation) filed a Temporary Urgency Change Petition (TUCP) pursuant to Water Code section 1435 et seq., to temporarily modify requirements in its water right permits for the New Melones Project, which is a component of the Central Valley Project (CVP). Originally, Reclamation requested to temporarily modify both its water right conditions requiring implementation of San Joaquin River flow objectives from April through June of this year and Stanislaus River dissolved oxygen (DO) objectives through September of this year. On April 14, 2016, Reclamation submitted an email rescinding its request to modify the DO requirements. Reclamation is required to meet the San Joaquin River flow objectives pursuant to requirements of Revised Decision 1641 (D-1641) implementing the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan). Reclamation proposed, and the State Water Board's Executive Director approved, similar changes to Reclamation's water right requirements to implement the San Joaquin River flow objectives in 2014 and 2015 due to drought conditions. Unless renewed, the changes approved by a TUCP order may remain in effect for up to 180 days.

According to Reclamation, the proposed changes are being requested as a result of continued dry conditions in the San Joaquin River basin and low storage levels in New Melones Reservoir and other reservoirs in the San Joaquin River watershed resulting from the unprecedented dry conditions of 2014 and 2015. Reclamation states that the changes are needed to improve storage conditions in New Melones Reservoir so that water is available to decrease water temperatures on the Stanislaus River, control salinity at Vernalis, and provide San Joaquin River flows later in the year and in subsequent years. Reclamation states that the temporary adjustments of flow requirements will conserve reservoir storage levels and provide sufficient carryover storage into water year 2017 to help meet the 2009 National Marine Fisheries Service (NMFS) biological opinion and conference opinion (BO) Stanislaus River flow requirements and other fishery requirements.

Reclamation seeks the following specific changes to its water right requirements:

- For the spring pulse flow period from approximately April 15 through May 15, replace the 4,880 cubic feet per second (cfs) flow requirement on the San Joaquin River at Vernalis with the requirement to meet the NMFS BO Stanislaus River flow requirement, which Reclamation estimates will result in flows at Vernalis between 3,000 and 3,200 cfs, taking into account Oakdale Irrigation District's (OID) and South San Joaquin Irrigation District's (SSJID) agreement to provide 75 thousand acre-feet (TAF) of additional flow on the Stanislaus River, other flows from the Merced and Tuolumne Rivers, and other accretions;

- For the April through May spring base flow period (prior to and following the approximately April 15 through May 15[1] spring pulse flow period), to reduce the flow requirement on the San Joaquin River at Vernalis from 2,280 cfs to 1,000 cfs; and

- For the month of June, to reduce the spring base flow requirement on the San Joaquin River at Vernalis from 2,280 or 1,420 cfs (depending on hydrology) to 500 cfs.

On March 25, 2016, the State Water Board provided notice that it would hold a public workshop on this matter on April 5, 2016. On April 4, 2016, the State Water Board sent Reclamation's TUCP request to interested persons. The State Water Board issued a formal public notice of the TUCP on April 14, 2016. This Order takes into consideration the written and verbal comments and objections that have been received to date.[2]

Due to the existing low storage levels in New Melones Reservoir, limited projected inflows and the junior nature of Reclamation's water rights for New Melones Reservoir, Reclamation does not appear to have adequate water in New Melones Reservoir under its water right permits to meet the D-1641 spring base flow and spring pulse flow requirements this year as well as other requirements without depleting storage in New Melones Reservoir to unreasonably low levels. Specifically, Reclamation does not appear to have enough water to meet D-1641 spring flow requirements, other required flows under the NMFS BO, fall flow requirements pursuant to D-1641, and other water quality requirements and maintain a minimal level of carryover storage at the end of the water year. Without the changes, Reclamation indicates that it would need to release about 300 TAF of additional water resulting in an end of September carryover storage level of just 116 TAF in New Melones Reservoir. Because OID and SSJID hold significant senior water rights on the Stanislaus River, including the rights to store water in the old Melones Reservoir, decreed rights, and upstream and downstream storage and direct diversion rights, and because OID's and SSJID's water rights and other San Joaquin basin water rights are not conditioned on meeting any of these requirements, limited supplies are available to Reclamation to meet its flow and other water quality requirements and maintain water in storage. Although water will be supplied to OID and SSJID under their own claims of right, Reclamation does not

[1] Pursuant to footnote 14 of D-1641, the April 15 to May 15 time period may be modified based on real-time information.

[2] To date the State Water Board has received one written objection from the Bay Institute (TBI), the Natural Resources Defense Council, Defenders of Wildlife, Pacific Coast Federation of Fishermen's Association, and the Institute of Fisheries Resources (TBI et al.).

propose to provide any water under its water right permits for the New Melones Project to its water supply contractors for consumptive use purposes this year.

As part of the San Joaquin River Agreement (SJRA), a voluntary agreement between parties in the San Joaquin River watershed to implement provisions of the 1995 Bay-Delta Plan from 2000 through 2011, Reclamation and the Department of Water Resources (DWR) purchased water from other water users in the San Joaquin River watershed to meet some of the San Joaquin River flow requirements. Instead of meeting the 1995 Bay-Delta Plan pulse flow objectives (the current D-1641 requirements), the SJRA parties proposed and the State Water Board approved the conduct of the Vernalis Adaptive Management Plan (VAMP). The VAMP provided for generally lower flows and offramps in very dry conditions such as this year and the previous two years when no pulse flows would have been required. The SJRA also provided for the purchase of flows to meet the D-1641 fall flow requirements. After the expiration of the SJRA in 2011, Reclamation purchased some water to help to meet the San Joaquin River flow requirements in 2012 and 2013, but did not fully achieve the requirements. Reclamation states that water has not been available for purchase since this time due to the drought, and claims that it has not had adequate water under its own rights to do so while meeting other obligations. The State Water Board is currently updating the San Joaquin River flow objectives, and may consider early implementation options to address flow compliance issues as part of that process.

Based on the above considerations, which are more fully described below, this Order approves most of the proposed changes, subject to conditions that address the interim compliance issue and ensure that the changes will not unreasonably affect fish and wildlife and will be in the public interest. This Order finds that the approved flow levels with the other conditions described below strikes a reasonable balance between the need to provide flows for fish and wildlife in the spring and the need to maintain adequate storage to meet flow and other water quality requirements later in the year and going into water year 2017. Specifically, this Order does the following:

- Changes the San Joaquin River spring pulse flow requirement between about April 15 and May 15 to at least 3,000 cfs at Vernalis, and specifically requires compliance with the NMFS BO Stanislaus River flow requirements and the provision of 75 TAF of additional flows from the Stanislaus River during the pulse flow period.

- Changes the spring base flow requirement following the pulse flow period through May 31 to 1,000 cfs.

- Modifies the spring base flow requirement during June to 500 cfs.

- This Order does not retroactively approve changes to the spring base flow requirements prior to the pulse flow period since that period passed prior to the issuance of this Order.

- Given the complexity of water rights in the Stanislaus River watershed, it is not entirely clear exactly how much water currently in storage in New Melones Reservoir and water that will flow into New Melones Reservoir is or will be claimed under Reclamation's water rights versus OID's and SSJID's senior water rights. In order to better assess this matter and inform future decisions, this Order requires Reclamation to submit an accounting of the water rights under which water is currently stored in New Melones Reservoir and an

accounting of flows into and out of New Melones Reservoir, including the rights under which those flows are diverted or released, for the remainder of the water year.

- To address the very real potential for continued compliance challenges with the San Joaquin River flow requirements until the San Joaquin River flow objectives are updated and implemented, this Order requires Reclamation to identify how it plans to address its compliance issues until that time.

- In order to ensure that storage is maintained in New Melones Reservoir for water quality and fisheries protection going into water year 2017, this Order requires Reclamation to meet the end-of-September carryover storage level of at least 415 TAF that Reclamation projected it would meet at the 90 percent hydrologic exceedance level with the proposed changes to the San Joaquin River flow requirements.

- In Order to ensure the continued protection of fish and wildlife for which these changes are largely approved, this Order requires Reclamation to meet D-1641 DO and October pulse flow requirements as well as NMFS Stanislaus River BO flow requirements this year.

2.0 BACKGROUND

2.1 State Water Board Regulatory Background

The State Water Board first adopted the current San Joaquin River flow objectives for the protection of fish and wildlife beneficial uses in the 1995 Bay-Delta Plan. The State Water Board established flow objectives for the San Joaquin River at Vernalis for the period from February through June and the month of October. With the exception of a 31-day pulse flow period from approximately April 15 through May 15, the February through June flows are referred to as the spring base flow objectives. The flows during the approximately April 15 through May 15 period are referred to as the spring pulse flow objectives. The timing and shaping of the spring pulse flow objectives may be modified to better protect fish and wildlife. The spring flow objectives are intended to provide minimum net downstream freshwater flows from the San Joaquin River to the Delta to protect rearing and migrating fish and wildlife beneficial uses, including San Joaquin River salmonids. The objectives require a specified minimum monthly average flow rate based on the San Joaquin Valley Water Year Hydrologic Classification (at the 75 percent exceedance level) and include two levels. The higher flow level applies when the 2 parts per thousand isohaline ($X2$[3]) is required to be at or west of Chipps Island pursuant to Table 4 of D-1641. Currently, the San Joaquin Valley Index is dry and X2 is required to be west of Chipps Island during all of April. Accordingly, the flow requirement in April prior to the pulse flow period is 2,280 cfs. The flow requirement following the pulse flow period through June will be between 1,420 cfs and 2,280 cfs depending on whether X2 is required to be west of Chipps Island.

The spring pulse flow objectives are also intended to provide minimum net downstream freshwater flows from the San Joaquin River to the Delta to protect rearing and migrating fish and wildlife beneficial uses, and specifically to provide outmigration flows for salmonids. This objective also includes two levels, with the higher flow level applying when X2 is required to be

[3] X2 refers to a specific location in the low salinity zone where the average daily salinity at the bottom of the water column measures 2 practical salinity units.

at or west of Chipps Island. For the spring pulse flow period, the flow requirement this year is 4,880 cfs.

During October, fall pulse flow objectives are primarily intended to provide attraction flows for adult salmonids returning from the ocean to spawn. The fall pulse objective in all years except a critical year following a critical year is required to be 1,000 cfs plus up to an additional 28 TAF limited to the amount necessary to provide a monthly average flow of 2,000 cfs. The additional 28 TAF is not required in a critical year following a critical year.

As discussed above, during proceedings regarding implementation of the 1995 Bay-Delta Plan the State Water Board afforded water right holders, and other interested parties, an opportunity to reach settlement agreements with each other to meet the San Joaquin River flow objectives and other objectives. Some parties entered into the SJRA, a voluntary agreement to implement the San Joaquin River flow objectives. Under the SJRA, the signatories proposed an alternative to meeting the San Joaquin River pulse flow objectives for a 12-year period in order to gain more scientific information regarding needed flows for the protection of fish and wildlife and to avoid a contentious adjudication of this matter. The signatory parties[4] agreed that the San Joaquin River Group Authority (SJRGA) members would be paid to meet the lower experimental flows specified in the VAMP in lieu of meeting the spring pulse flow objectives adopted in the 1995 Bay-Delta Plan for a 12-year period. Signatories to the SJRA also agreed to sell water to meet the October pulse flow objectives for this period. In D-1641, which implemented the 1995 Bay-Delta Plan, the State Water Board accepted the SJRA and approved the conduct of the VAMP for a period of 12 years in lieu of meeting the spring pulse flow objectives.[5] After the VAMP, the Bay-Delta Plan San Joaquin River flow objectives became effective.

In D-1641, the State Water Board assigned responsibility to Reclamation for ensuring that all of the San Joaquin River flow objectives are met, and authorized various SJRGA members to provide water for the VAMP experiment and the October flows for a 12-year period. The SJRA did not provide for flows from any SJRGA members during the spring base flow period. While the State Water Board approved the water right change petitions of SJRGA members to provide water voluntarily pursuant to the SJRA, the State Water Board did not hold any water right holder except Reclamation responsible for meeting the San Joaquin River flow objectives due to the provisions of the SJRA.

Since the SJRA expired, Reclamation has been responsible for meeting the San Joaquin River flow objectives in Table 3 of D-1641. As discussed above, due to inadequate water supplies in New Melones Reservoir to meet all of Reclamation's various obligations and the lack of water releases from elsewhere in the San Joaquin River watershed, Reclamation has repeatedly failed to comply with the San Joaquin River flow objectives since the SJRA expired.

2.2 National Marine Fisheries Service Biological Opinion

In 2009, NMFS released a final BO on the long-term operation of the CVP and State Water Project (SWP) in accordance with section 7 of the Endangered Species Act (ESA). The NMFS BO documents the effects of the operations of the CVP and SWP (collectively Projects) on listed anadromous fishes, including threatened Central Valley steelhead and their critical habitat.

[4] California Resources Agency, United States Department of the Interior, San Joaquin River Group Authority, San Joaquin River Exchange Contractors, Friant Water Authority, City and County of San Francisco, Central Valley Project/State Water Project Export Interests, and two environmental groups.

[5] The Bay-Delta Plan was updated in 2006 to allow for the conduct of the VAMP in lieu of the Bay-Delta Plan pulse flow objectives consistent with D-1641.

Based on the best available scientific and commercial information, the BO found that the long-term operations of the Projects are likely to jeopardize the continued existence of Central Valley steelhead, and destroy or adversely modify its designated critical habitat.

The ESA provides that if NMFS comes to a jeopardy or adverse modification conclusion, it must identify a reasonable and prudent alternative (RPA) to the proposed action that is expected to avoid the likelihood of jeopardy to the species and adverse modification of designated and proposed critical habitat. Under the RPAs for the Stanislaus River, Reclamation is required to: convene a Stanislaus Operations Group (SOG) to provide a forum to discuss operations during implementation of the RPAs (Action III.1.1), maintain suitable temperatures (Action III.1.2), and maintain minimum flows (Action III.1.3). For the protection of San Joaquin River steelhead, during the April and May period, there are also limitations on allowable Project exports as a portion of San Joaquin River inflows. The SOG meets on a regular basis and includes members from Reclamation, DWR, the State Water Board, and the fisheries agencies.

2.3 Hydrology, Water Supply and Water Rights

Hydrology

From 2012 through 2015, California experienced below average rainfall and runoff. In 2014 and 2015, drought conditions were extreme, particularly in the San Joaquin River watershed, where 2015 was the driest year in recorded history. These drought conditions led to significant depletions of reservoir storage levels throughout the State, again particularly in the San Joaquin River watershed. While overall hydrology in California has improved in 2016, 74 percent of the state remains in severe drought, particularly south of the Delta. DWR's April 1, 2016, Water Supply Index forecast indicated that the San Joaquin Valley Index is classified as dry.

The San Joaquin Valley 5-Station Precipitation index as of April 11 was 37.5 inches, which is 107 percent of normal. Regional snowpack however, is currently below average. As of April 17, 2016, the snow water content[6] was 69 percent of normal for the Central Sierra (which encompasses the Stanislaus River Basin). As of April 17, 2016, storage in New Melones Reservoir was 646 TAF (27 percent of its 2.4 MAF total capacity). While New Melones Reservoir rarely ever reaches capacity, this is still just 43 percent of historical average for this time of year. Other San Joaquin River Basin reservoirs are likewise below average with Don Pedro at 64 percent of capacity and 88 percent of average, New Exchequer at 41 percent of capacity and 72 percent of average and Millerton Lake at 57 percent of capacity and 81 percent of average. As of April 12, 2016, unimpaired inflow for the remainder of the year is projected to be between 580 TAF at the 90 percent exceedance and 690 TAF at the 50 percent exceedance level. Much of this inflow is allocated to satisfy OID and SSJID's prior water rights (600 TAF), and to a lesser extent NMFS BO flow requirements, San Joaquin River salinity requirements, and Stanislaus River dissolved oxygen requirements, leaving limited supplies available for meeting other San Joaquin River flow requirements and maintaining adequate carryover storage in the future.

Stanislaus River Water Rights and Available Supplies

On the Stanislaus River, Reclamation has two water right permits, Permit 16597 for up to 980 TAF and Permit 16600 for up to 1,420 TAF, that authorize diversion to storage in New Melones

[6] DWR develops statewide summaries of snow water content which rely on automated snow sensors in the Sierra to provide regional snowpack data. This data is found on the California Data Exchange Center website at http://cdec.water.ca.gov/cgi-progs/products/swccond.pdf.

Reservoir from November 1 through June 30 for various consumptive uses and other purposes. Reclamation also has Permit 20245 that authorizes direct diversion of up to 2,250 cfs.

OID and SSJID have substantial pre-1914 and post-1914 appropriative rights to divert from the Stanislaus River, including an adjudicated, pre-1914 appropriative right to directly divert up to 1,816 cfs from March 1 to October 1. OID and SSJID also have the following consumptive use water rights: Licenses 2012, 2013, and 3986, authorizing seasonal storage in old Melones Reservoir, which was inundated by New Melones Reservoir; Licenses 7856 and 7860, authorizing storage in Tulloch Reservoir; Licenses 2634 and 2706, authorizing direct diversion of small amounts (4.54 cfs and 1.7 cfs) on the lower Stanislaus River; and Licenses 7857, 10166, and 12385 authorizing diversion to storage from the Middle Fork of the Stanislaus River at Beardsley Lake and Donnells Lake. SSJID has a consumptive use water right, License 604, for offstream storage of water at Woodward Reservoir for diversions at Goodwin Diversion Dam. Tulloch Dam and Reservoir is 68.4 TAF, Beardsley Dam and Reservoir is 97.8 TAF, Donnells Dam and Reservoir is 65 TAF, Old Melones dam and reservoir is 112.5 TAF, and Woodward Reservoir is 36 TAF. All of OID and SSJID's consumptive use water rights are senior to Reclamation's water rights to New Melones Reservoir.[7]

OID and SSJID have entered into an agreement with Reclamation (last updated on August 30, 1988) that is intended to provide for the delivery of water stored in New Melones Reservoir in accordance with OID's and SSJID's senior water rights. The agreement provides that Reclamation will deliver water to OID and SSJID at Goodwin Diversion Dam, the inflow to New Melones plus the amount derived from the formula (600 TAF – inflow) divided by 3; limited to a maximum entitlement of 600 TAF each water year. Pursuant to the agreement, OID and SSJID may carry over unused stored water into subsequent water years by leaving "conserved water" in storage in New Melones Reservoir, up to a cumulative amount of 200 TAF.

Of the 1 to 1.2 MAF of projected inflow to New Melones Reservoir this season, it is not clear how much may be taken under OID and SSJID's water rights, and how much may be taken under Reclamation's water rights, given the complexity of those rights. Reclamation indicates that it does not have any water available for consumptive uses this year and that all of the water available under its rights will be needed for meeting water quality and flow requirements and maintaining some level of carryover storage.

Reclamation indicates that if it were to meet the San Joaquin River flow objectives from April through June, over 300 TAF of additional water would need to be released, resulting in an end of September storage in New Melones Reservoir of 116 TAF, a historically low storage level. At those levels, water would have to be released from the low level outlet to old Melones Reservoir, there would be little to no temperature control, and supplies would very likely be inadequate to meet any flow or water quality requirements in water year 2017 unless significant precipitation events occur. There may also be issues with sediment and debris with releases from the low level outlet.

[7] OID and SSJID also have four water rights that authorize direct diversion of water for power purposes: License 7859 (Donnells Lake) and Permits 19046 (Goodwin Dam), 21188 (Donnells Lake) and 21299 (Tulloch Reservoir); OID and SSJID have two water rights that authorize direct diversion and diversion to storage for power purposes: License 7858 (Beardsley Lake) and License 10167 (Donnells Lake).

2.3 Governor's Drought Related Executive Orders

On January 17, 2014, Governor Brown issued a Proclamation of a State of Emergency due to severe drought conditions and directed the State Water Board to consider modifying requirements for reservoir releases or diversion limitations that were established to implement a water quality control plan. Such modifications could be accomplished through actions on requests such as a TUCP. The Proclamation stated that such modifications may be necessary to conserve cold water stored in upstream reservoirs that may be needed later in the year to protect salmon and steelhead, to maintain water supply, and to improve water quality. To carry out this directive, Governor Brown suspended the California Environmental Quality Act (CEQA), the CEQA regulations, and Water Code 13247.

The Governor has since issued additional Proclamations and Executive Orders extending and expanding the provisions of the January 17, 2014 Proclamation. On April 25, 2014, the Governor issued a Proclamation of a Continued State of Emergency providing that the provisions of the January 17, 2014 Proclamation remain in full force and effect and also adding new provisions. On December 22, 2014, Governor Brown issued Executive Order B-28-14, which extended the suspension of CEQA and Water Code section 13247 contained in the prior Proclamations through May 31, 2016. Acknowledging the continuing magnitude of the drought, on April 1, 2015, Governor Brown issued Executive Order B-29-15, and on November 13, 2015, Governor Brown issued Executive Order B-36-15, both of which require prior Proclamations and Executive Orders to remain in full force and effect.

2.4 Previous Related TUCP Activities

As mentioned above, in response to severe drought conditions the State Water Board's Executive Director approved changes to conditions of Reclamations' water rights requiring implementation of San Joaquin River flow objectives at certain times in 2014 and 2015. At the same time, the State Water Board also approved other changes to water right conditions requiring Reclamation and DWR to implement other water quality objectives. In response to petitions for reconsideration of the changes approved in 2015, on December 15, 2015, the State Water Board adopted Order WR 2015-043, which denied in part, and granted in part, petitions for reconsideration of the Executive Director's 2015 TUCP Orders.[8] Based on concerns that occurred over the last two years with the condition of species and water supplies, the Order required planning and implementation activities in 2016 to prevent further catastrophic species declines and to ensure that minimal water supplies are conserved in storage for other critical needs if drought conditions continue. Specifically, Order WR 2015-0043 required the preparation of a February through October 2016 Drought Contingency Plan (DCP) to identify proposed operations for the reasonable protection of fish and wildlife beneficial uses including a margin of safety for that purpose. The Order required the DCP to be submitted to the Executive Director by January 15, 2016, and to be reviewed monthly and updated as necessary based on changed circumstances. The January 15, 2016, DCP and the February 19 and March 22, 2016 updates to the DCP indicated that changes may be requested to the San Joaquin River flow requirements, depending on the projected hydrology.

In addition to the DCP, Order WR 2015-0043 required Reclamation, in consultation with the California Department of Fish and Wildlife (DFW), United States Fish and Wildlife Service

[8] The December 15, 2015 State Water Board Order WR 2015-043 Order can be found at http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2015/wro2015_0043.pdf. Order 2015-0043 addresses petitions for reconsideration of the Executive Director's February 3, 2015 TUCP Order and subsequent modifications.

(USFWS), and NMFS (collectively fisheries agencies) and State Water Board staff, to prepare a plan by February 15, 2016, to reasonably protect fish and wildlife on the Stanislaus River in 2016.[9] In the plan, Reclamation was required to identify needed storage and flow levels for the protection of fish and wildlife throughout 2016 to ensure adequate temperature and water quality conditions for salmonid species inhabiting the Stanislaus River. Reclamation submitted temperature modeling information[10] as an attachment to the supplemental environmental information provided with the April 1, 2015 TUCP. The temperature modeling information submitted by Reclamation uses the HEC-5Q Model to assess the expected temperature conditions at discrete points along the Stanislaus River, given the most recent projections of inflow to New Melones Reservoir, proposed instream flows and projected diversions from March 20, 2016 through December 31, 2016.

2.5 Substance of the Temporary Urgency Change Petition

As summarized in the introduction to this Order, in the April 1, 2016 TUCP, Reclamation requested pursuant to Water Code section 1435 et seq. temporary changes to conditions of its permits for New Melones Reservoir that require Reclamation to meet the San Joaquin River spring base flow and pulse flow objectives from April through June. Reclamation requested the following temporary changes to requirements that were imposed pursuant to D-1641:

- For the spring pulse flow period, to replace the 4,880 cfs flow requirement on the San Joaquin River at Vernalis with the requirement to meet the NMFS BO Stanislaus River flow requirement, which Reclamation estimates will result in flows at Vernalis between 3,000 and 3,200 cfs, taking into account OID and SSJID's agreement to provide 75 TAF of additional flow on the Stanislaus River, other flows from the Merced and Tuolumne Rivers, and other accretions;
- For the April through May spring base flow period, to reduce the flow requirement on the San Joaquin River at Vernalis from 2,280 cfs to 1,000 cfs; and
- For the month of June, to reduce the spring base flow requirement on the San Joaquin River at Vernalis from 2,280 or 1,420 cfs (depending on hydrology) to 500 cfs.

3.0 APPLICABILITY OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT AND WATER CODE SECTION 13247

Ordinarily, the State Water Board must comply with any applicable requirements of CEQA prior to issuance of a temporary urgency change order pursuant to Water Code section 1435. (See Cal. Code Regs., tit. 23, § 805.) The Governor's December 22, 2014 Executive Order extended the suspension of CEQA and Water Code section 13247 contained in the January 17, 2014 and April 25, 2014 Proclamations as applied to certain drought relief actions, including action on Reclamation's TUCP, that are started before May 31, 2016. Water Code 13247 requires state agencies, including the State Water Board, to comply with water quality control plans unless otherwise directed or authorized by statute. Absent suspension of section 13247, the State Water Board could not approve a change petition that modifies permits and licenses in a way

[9] This condition was originally required by the August 4, 2015 TUCP Order approving a change to the DO objective on the Stanislaus River found at http://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/transfers_tu_notices/usbr/docs/stan_order080415.pdf.

[10] Available at http://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/transfers_tu_notices/2016/14858a_att2.pdf.

that does not provide for full attainment of the water quality objectives in the Bay-Delta Plan, even during a drought emergency.[11]

4.0 PROCEDURAL REQUIREMENTS CONCERNING THE TEMPORARY URGENCY CHANGE PETITION

The State Water Board may issue a temporary urgency change order in advance of public notice. (Wat. Code, § 1438, subd. (a).) Public notice must be provided as soon as practicable, unless the change will be in effect less than 10 days (*Id*., § 1438, subds. (a), (b) & (c).). Any interested person may file an objection to a temporary urgency change. (*Id*., subd. (d).) The State Water Board must promptly consider and may hold a hearing on any objection. (*Id*., subd. (e).) State Water Board Resolution 2012-0029 delegates to the Board Members individually and to the Executive Director the authority to hold a hearing, if necessary, and act on a TUCP. (Resolution 2012-0029, ¶¶ 2.2, 4.4.1.)[12]

On April 4, 2016, the State Water Board sent a copy of the TUCP to its Bay-Delta and Drought email distribution lists and on April 14, 2016, the State Water Board issued a formal public notice of the TUCP. Reclamation has or will publish the notice in newspapers in Tuolumne and Calaveras counties in accordance with Water Code section 1438, subdivision (b)(1). On March 25, 2016, the State Water Board also issued a notice of a public workshop on the TUCP, which the State Water Board expected to receive before the workshop. The State Water Board held the public workshop on April 5, 2016, to receive information and solicit public input on Reclamation's proposed operations of the New Melones Reservoir for the remainder of the year. At the workshop, the State Water Board received comments in support of and in opposition to the TUCP.

5.0 REQUIRED FINDINGS OF FACT

Water Code section 1435 provides that a permittee or licensee who has an urgent need to change the point of diversion, place of use, or purpose of use from that specified in the permit or license may petition for a conditional temporary change order. The State Water Board's regulations set forth the filing and other procedural requirements applicable to temporary urgency change petitions. (Cal. Code Regs., tit. 23, §§ 805, 806.) The State Water Board's regulations also clarify that requests for changes to permits or licenses other than changes in the point of diversion, place of use, or purpose of use may be filed, subject to the same filing and procedural requirements that apply to changes in point of diversion, place of use, or purpose of use. (*Id*., § 791, subd. (e).)

Before approving a temporary urgency change, the State Water Board must make the following findings:

[11] TBI et al. argues that approving the TUCP would be contrary to law because it would modify adopted water quality objectives without following proper procedures for doing so under the Clean Water Act, including obtaining the U.S. Environmental Protection Agency's (USEPA) review and approval prior to implementing the modified objectives. As described in WR Order 2015-0043, these arguments incorrectly conflate the State Water Board's planning authority under the Clean Water Act with its implementation authority under state law. The TUCP does not seek to change water quality objectives; rather, it seeks to temporarily change water right requirements that implement the objectives pursuant to state law. (See State Water Board Order WR 2015-0043, pp. 43-48.)

[12] The State Water Board's Deputy Director for Water Rights may act on a temporary urgency change petition if there are no objections to the petition.

1. the permittee or licensee has an urgent need to make the proposed change;

2. the proposed change may be made without injury to any other lawful user of water;

3. the proposed change may be made without unreasonable effect upon fish, wildlife, or other instream beneficial uses; and

4. the proposed change is in the public interest.

(Wat. Code, § 1435, subd. (b)1-4.)

The State Water Board exercises continuing supervision over temporary urgency change orders and may modify or revoke temporary urgency change orders at any time. (Wat. Code, §§ 1439, 1440.) The changes approved by temporary urgency change orders expire automatically 180 days after issuance, unless they are revoked or an earlier expiration date is specified. (*Id*., § 1440.) The 180-day period does not include any time necessary to comply with monitoring, reporting, or mitigation requirements. (*Ibid*.) The State Water Board may renew temporary urgency change orders for a period not to exceed 180 days. (*Id*., § 1441.)

5.1 Urgent Need for the Proposed Changes

Under Water Code section 1435, subdivision (c), an "urgent need" means "the existence of circumstances from which the board may in its judgment conclude that the proposed temporary change is necessary" to further the constitutional policy that the water resources of the state be put to beneficial use to the fullest extent of which they are capable and that waste of water be prevented..."

As discussed above, the state and especially the San Joaquin River watershed has experienced prolonged and significant drought conditions over the past several years, with last year being the driest year on record for the San Joaquin River basin. These drought conditions have severely depleted surface water and groundwater storage in the San Joaquin River Basin. While precipitation events this winter and spring have improved conditions somewhat, storage levels in San Joaquin River Basin reservoirs remain below average, particularly in New Melones Reservoir, which is currently at 43 percent of average for this time of year. Due to the depleted storage conditions and the substantial senior water right demands on the Stanislaus River, limited storage and inflow to New Melones Reservoir is available this year to meet all of the demands for water from the project under Reclamation's water rights. While there are other supplies in the watershed, the water rights for those supplies are not conditioned on meeting the San Joaquin River flow objectives, and Reclamation does not have arrangements with those parties to provide water to meet the San Joaquin River flow requirements as it has in the past. Accordingly, there is an urgent need for the change to ensure that storage levels in New Melones Reservoir are not seriously depleted to as low as 116 TAF at the end of September and adequate supplies are available going into water year 2017 to meet flow and water quality requirements and to assist with regulating temperatures this year.

As discussed above, to address the longer term compliance issues that are very likely to occur with meeting the San Joaquin River flow objectives, this Order requires Reclamation to identify how it plans to address compliance issues until the State Water Board updates and implements changes to the San Joaquin River flow objectives. To inform this matter further in this and future years, this Order also requires Reclamation to provide an accounting of how much water

currently stored in and flowing in and out of New Melones Reservoir is claimed under Reclamation's water rights versus OID's and SSJID's water rights. This Order also requires Reclamation to meet an end of September carryover storage level of 415 TAF and to meet the DO objectives on the Stanislaus River, D-1641 fall flow requirements and NMFS BO flow requirements this year. This Order also allows the fisheries agencies to propose any modification to these requirements that may be needed to ensure the reasonable protection of fish and wildlife.

5.2 No Injury to Any Other Lawful User of Water

The proposed changes will not injure any other lawful user of water. Under Water Code section 1435, the term "injury" means invasion of a legally protected interest. (*State Water Resources Control Board* Cases (2006) 136 Cal.App.4th 674, 738-743.) Riparian and appropriative water right holders with rights to divert water below New Melones Reservoir are only entitled to divert natural and abandoned flows, and in the case of riparian water right holders, only natural flows. They are not entitled to divert water previously stored and released for use downstream, including stored water that is released for purposes of meeting water quality objectives. (See *id.* at pp. 738, 743, 771.) If the proposed changes are implemented, Reclamation will reduce releases from storage in New Melones Reservoir. The proposed changes will not result in a decrease in natural and abandoned flows. Accordingly, legal users of water will not be injured by the proposed changes.

Reclamation's request proposes changes to requirements to meet certain water quality objectives established to protect fish and wildlife beneficial uses. Reclamation has not requested any changes to requirements to meet water quality objectives established to protect municipal, industrial, or agricultural beneficial uses. For this reason, the proposed changes will not injure other water users due to a change in water quality. (See *State Water Resources Control Bd. Cases, supra*, at pp. 755-745.)

5.3 No Unreasonable Effect upon Fish, Wildlife, or Other Instream Beneficial Uses

Species Information

The primary species of concern with respect to flows in the Stanislaus and San Joaquin Rivers are salmonids, including Central Valley fall-run Chinook salmon (Species of Concern) and the less abundant Central Valley steelhead (threatened under ESA) who spawn and rear in tributaries to the San Joaquin River (including the Stanislaus River) and migrate to and from the Delta through these rivers. Spring-run Chinook salmon and white sturgeon may also be found in the San Joaquin River basin. Analyses of historic flow versus survival and abundance relationships indicate that flows in the February through June time period have a strong influence on survival and abundance of San Joaquin basin fall-run Chinook salmon and likely other species.[13] The ecological functions provided by flows that are important to salmonids during this period include, but are not limited to, improved temperature, DO and other water quality conditions, improved quality and quantity of riparian and floodplain habitat, improved sediment and nutrient transport, increased turbidity, and improved transport flows.

Fall-run Chinook salmon migrate upstream to the San Joaquin River tributaries as adults from late summer through December and spawn from early October through late December. In the Stanislaus River, spawning occurs from Goodwin Dam (River Mile [RM] 58) downstream to

[13] Hankin, D., D. Dauble, J.J. Pizzimentieti, and P. Smith. 2010. The Vernalis Adaptive Management Program (VAMP): Report of the 2010 Review Panel. May 2010.

Riverbank (RM 33).[14] Most fall-run Chinook salmon fry emerge from the gravel between February and March and are immediately dispersed into downstream feeding areas. Juvenile fall-run Chinook salmon rearing in the Stanislaus River typically occurs from mid-December through May between Goodwin Dam and Riverbank. Outmigration of San Joaquin River tributary fall-run Chinook salmon typically occurs between February and June, with peaks in fry outmigration occurring in February and March, and smolt outmigration occurring in April and May.

Adult steelhead typically migrate upstream to their spawning grounds primarily during the late fall and winter months when river flows are high and water clarity is low. Upstream migration peaks between October and February; and rearing and outmigration of juveniles can occur from January to June. Unlike fall-run Chinook salmon who migrate during the late winter and spring after they emerge from their redds, steelhead rear in the river for one year and as many as three years before outmigrating.

Monitoring for upstream passage of adult fall-run Chinook salmon returning to the Stanislaus River in the fall of 2015, whose progeny are now rearing in or outmigrating from the Stanislaus River, indicates the highest adult returns since sampling began in 2003. As of mid-November 2015, over 7,500 adults had passed the monitoring location. Although this is the largest passage of adults since monitoring began, it is likely that most of these fish are hatchery fish. The high abundance was likely due to the fact that the Stanislaus River provided the highest flows in the San Joaquin River basin in the fall of last year.

Fishery Agency Input

The State Water Board received an email from NMFS on April 15, 2016, concurring with the findings that steelhead would be better protected by the changes than they would be absent the changes due to the tradeoffs between flows and storage discussed above. The State Water Board received an email from USFWS on April 18, 2016, indicating that USFWS does not anticipate additional adverse effects to Delta smelt or its critical habitat from the changes.[15] DFW also submitted an email on April 18, 2016, concurring that steelhead and fall-run Chinook salmon would be better served by Reclamation conserving water in storage rather than releasing water to comply the San Joaquin River flow objectives given the storage conditions in New Melones Reservoir.

Effects of the Change

The changes as approved will not unreasonably impact fish and wildlife or other instream beneficial uses of water because the changes balance the need for water for flows this spring with the need for carryover storage going into water year 2017. As discussed above, without the changes, Reclamation projects that carryover storage at the end of September would be 116 TAF. With this low storage level and without significant precipitation, there would be little to no water available for flows and water quality control purposes (temperature and DO) for the protection of fish and wildlife in water year 2017. The changes as approved strike a balance between the need to protect fish and wildlife this year and next by providing reduced flows this year and maintaining storage for flow and water quality needs in the future. The conditions of this Order will ensure that carryover storage is provided and that other requirements for the protection of fish and wildlife are met including: DO requirements, fall flow requirements and

[14] Mesick, C. Studies of spawning habitat for fall-run Chinook salmon in the Stanislaus River between Goodwin Dam and Riverbank from 1994 to 1997. *In* Brown. R.L. 2001. Contribution to the biology of Central Valley Salmonids, Volume 2.

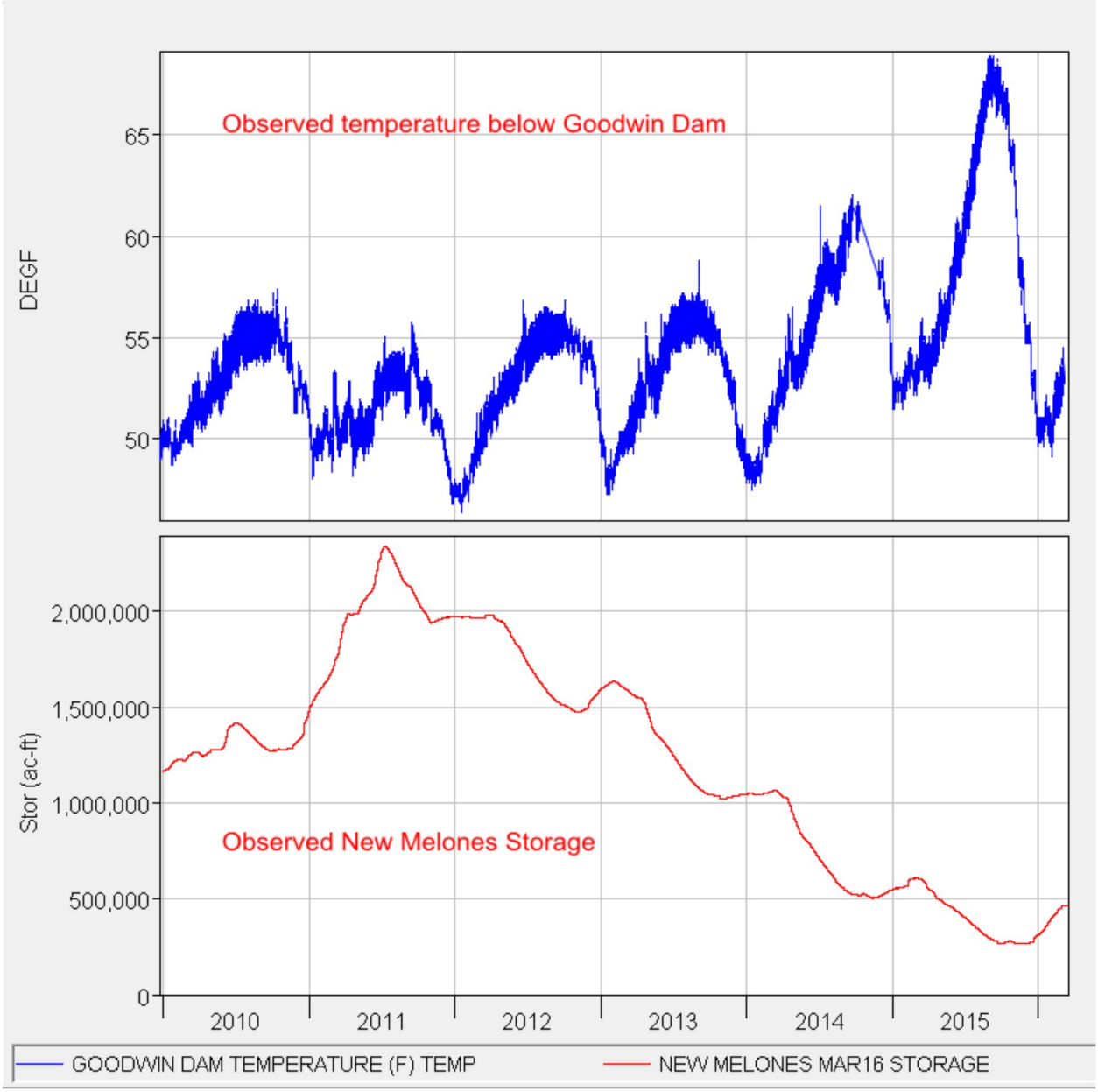
[15] TBI et al. commented that the change would appear to violate the ESA. As noted above, the federal fisheries agencies have concurred that the changes are consistent with ESA.

NMFS BO flow requirements. In addition, the requirement to develop a proposal for addressing San Joaquin River flow needs until the State Water Board updates and implements the Bay-Delta Plan will help to ensure the protection of fish and wildlife in the future. Specific information regarding the effects of the changes is provided below.

The proposed pulse flows will provide some protection to outmigrating fall-run Chinook salmon and steelhead and other species. While the change will result in a reduction in spring pulse flows compared to the San Joaquin River flow objectives, and likely a reduction in the level of protection provided to fish and wildlife species during the spring, those flows will provide for some temperature control on the Stanislaus River, according to the Stanislaus River temperature modeling submitted by Reclamation with its TUCP. According to the modeling, maximum daily temperatures on the Stanislaus River will be significantly lower during the pulse flow period than before and after the pulse (51 degrees Fahrenheit (F) just below Goodwin Dam, at or under 55 degrees F to Oakdale, and mostly below 60 degrees F to the confluence with the San Joaquin River). These temperatures would likely be lower with higher flows, but at the expense of higher temperatures during the summer, fall, and going into next year. Fish will also be exposed to lower temperatures for much of the day and may seek cold water refugia during the heat of the day. After the pulse flow period, temperatures are projected to increase steadily. However, by that time, most fall-run Chinook salmon will have migrated out of the river. For over-summering steelhead remaining in the river, temperatures below Goodwin Dam will still be cool through June and will remain below 65 degrees F[16] through the summer. Without the changes, temperatures during the summer and fall would likely be higher as a result of reduced storage and elevated reservoir release temperatures.

As indicated by the below graph that was included in the temperature analysis Reclamation submitted, as storage levels decrease, release temperatures from New Melones Reservoir increase. As such, the conservation of storage resulting from these changes will likely improve temperatures in the future compared to conditions if the flows were released and storage was depleted.

[16] The United States Environmental Protection Agency, Region 10 Guidance for Pacific Northwest State and Tribal Water Quality Standards (2003) recommends that the seven-day average of the daily maximum temperatures (7-DADM) should not exceed 18 degrees Celsius (about 64.4 degrees F) in waters where both adult salmonid migration and "non-core" juvenile rearing occur during the period of summer maximum temperatures.



Goodwin Observed Temperatures vs. New Melones Storage
(Figure 17 from Stanislaus Temperature Modeling 2016 Proposed Operations Water Allocation Schedule-March 20, 2016, AD Consultants)

In addition to the above, this year the pulse flows are being shaped by the SOG to maximize the benefits of the pulse in: cueing outmigration, improving migratory habitat, improving temperature protection, inundating shallow water habitat, and improving mainstem San Joaquin River conditions (SOG; March 18 advice). Specifically, the pulse flow is being extended beyond the typical 31 day duration and will include a slow ramp-down period at the tail end of the spring pulse flow which is designed to facilitate riparian recolonization in restored areas and allow the growth of woody vegetation (willows and cottonwoods). Additionally, the Head of Old River barrier (HORB) has been installed and will be functional during the spring pulse flow period. The

HORB may facilitate higher survival of juveniles migrating through the Bay-Delta by directing fish away from the export facilities and increasing flows in the mainstem San Joaquin River.[17]

TBI et al. comments that the changes will unreasonably affect fish and wildlife and that the State Water Board's responsibility to protect public trust resources has priority over water right diversions. Before making other water users responsible for meeting the San Joaquin River flow objectives, the State Water Board would need to undertake a separate proceeding to do so, which would be contentious and could be lengthy. In any event, such a proceeding would not be complete in time to address flow needs this spring and would distract from efforts to update the Bay-Delta Plan. Accordingly, the tradeoffs between storage and flows addressed in this Order would remain this year. This Order addresses those tradeoffs and balances the need for flows in the spring and the need for carryover storage to reasonably protect fish and wildlife. This Order also addresses the likely compliance issues for future years until the State Water Board updates and implements the Bay-Delta Plan.

Based on the above, the State Water Board concludes that the potential impact to fish, wildlife, and other instream beneficial uses from the approved temporary changes is not unreasonable considering the impact to fish and wildlife that could occur later in the year from reduced storage in New Melones Reservoir if the temporary changes are not approved.

5.4 The Proposed Change is in the Public Interest

As conditioned, the proposed changes will make the best use of limited water supplies available this year to meet flow and water quality requirements and provide carryover storage and are accordingly in the public interest. As discussed above, Reclamation likely does not have adequate water in New Melones Reservoir under its water right permits to meet the flow and water quality requirements of the project and maintain some level of carryover storage, taking into consideration the senior water rights of OID and SSJID.

TBI et al. argues that the changes are not in the public interest given improvements to water conditions in the San Joaquin River Basin as compared to prior years and the substantial diversions that will occur. As discussed above, however, the allocations Reclamation makes to OID and SSJID are not contract allocations under Reclamation's rights; they are allocations that Reclamation has agreed to make to satisfy OID and SSJID's senior water rights, which are not conditioned on meeting the San Joaquin River flow objectives. In order to make OID, SSJID or other water users responsible for implementing the flow objectives, the State Water Board would have to undertake a separate proceeding. Disapproving Reclamation's TUCP would not serve to impose responsibility on other water users. Instead it would result in Reclamation depleting storage in New Melones Reservoir. Without the proposed changes, Reclamation estimates that New Melones Reservoir would be drawn down to just over 100 TAF. This low storage level would likely result in higher temperatures and inadequate supplies going into next year to meet flow and water quality requirements, particularly if dry conditions continue, which would not be in the public interest. While Reclamation could potentially obtain water from other sources, it does not have agreements in place to do so this year.

To address this matter, this order requires Reclamation to identify how it will address compliance issues in future years until the State Water Board updates and implements the Bay-Delta Plan. In so doing, Reclamation should identify other sources that can supplement flows provided under Reclamation's New Melones water rights. To better assess compliance issues

[17] Hankin, D., D. Dauble, J.J. Pizzimentieti, and P. Smith. 2010. The Vernalis Adaptive Management Program (VAMP): Report of the 2010 Review Panel. May 2010.

in the future, this Order also requires Reclamation to provide an accounting of water in storage in New Melones Reservoir and water entering and leaving New Melones Reservoir and the water rights under which that water is claimed. As discussed above, to ensure that this change is in the public interest, this Order also requires a New Melones Reservoir carryover storage level, and compliance this year with DO requirements, fall D-1641 flow requirements, and NMFS BO flow requirements. With the above conditions, the proposed changes are in the public interest.

6.0 CONCLUSIONS

The State Water Board has adequate information in its files to make the findings required by Water Code section 1435, as discussed above.

I conclude that, based on the available evidence:

1. The Petitioner has an urgent need to make the proposed changes that are approved by this Order;

2. The approved changes, as conditioned by this Order, will not operate to the injury of any other lawful user of water;

3. The approved changes, as conditioned by this Order, will not have an unreasonable effect upon fish, wildlife, or other instream beneficial uses; and,

4. The approved changes, as conditioned by this Order, are in the public interest.

ORDER

NOW, THEREFORE, IT IS ORDERED that the petition for temporary urgency change in permits 16597, 16600 and 20245 (Applications A014858A, A019304 and A014858B) of the United States Bureau of Reclamation (Reclamation) for the Central Valley Project (CVP) is partially approved subject to the following terms and conditions. Except as otherwise provided below, all other terms and conditions of the subject permits, including those added by the State Water Resources Control Board (State Water Board) in Revised Decision 1641 (D-1641), shall remain in effect. The changes approved in this Order shall be effective through June 30, 2016. Pursuant to Water Code section 1440, the conditions of approval shall be effective until compliance is achieved.

1) The requirements of D-1641 for Reclamation to implement flow objectives on the San Joaquin River at Airport Way Bridge, Vernalis are amended as follows:

    a. For the spring pulse flow period from approximately April 15 through May 15, the 31-day average flow shall be no less than 3,000 cubic-feet per second (cfs). The timing and shaping of these flows shall be determined through consultation with the Department of Fish and Wildlife, National Marine Fisheries Service (NMFS), and U.S. Fish and Wildlife Service (fisheries agencies).

    b. For the spring flow period following the pulse flow period through May 31 (approximately May 16 through 31), flows shall be no less than 1,000 cfs, averaged for the partial month.

    c. For the month of June, flows shall be no less than 500 cfs, on a monthly average.

    d. In addition to the above flows, Reclamation shall comply with the 2009 NMFS Biological Opinion (BO) Stanislaus River flow requirements and shall ensure that an additional 75 thousand acre-feet (TAF) of inflow is provided from the Stanislaus River above the BO flow requirements during the spring pulse flow period.

2) Reclamation shall comply with the requirements of State Water Board Decision 1422 and D-1641 to meet the Stanislaus River dissolved oxygen objective, the San Joaquin River at Vernalis electrical conductivity objective and the San Joaquin River at Vernalis fall pulse flow objective.

3) Reclamation shall submit to the State Water Board's Executive Director by November 1, 2016, a report that provides an accounting of the water rights under which water was stored in New Melones Reservoir as of October 1, 2015, and the water rights under which diversions to storage and releases were made on a daily basis from October 1, 2015 through September 30, 2016. The report shall specify whether water was stored, diverted, or released under (1) Reclamation's New Melones Project permits or (2) Oakdale Irrigation District's and South San Joaquin Irrigation District's water rights. The accounting shall include, but shall not be limited to, reservoir inflow, outflow, evaporation, precipitation, diversion to storage, and direct diversion. The report shall document all assumptions used in the water accounting, including the legal basis for those assumptions, and provide any supporting material or references. Reclamation

shall provide any additional information regarding this matter that may be requested by the Executive Director.

4) Reclamation shall submit a proposal to the Executive Director by November 1, 2016, identifying how it plans to address its difficulty meeting D-1641 San Joaquin River flow requirements until such time as the State Water Board updates and implements the San Joaquin River flow objectives. Reclamation shall consult with State Water Board staff regarding its proposal prior to final submission. Reclamation shall provide any additional information regarding this matter that may be requested by State Water Board staff.

5) Reclamation shall achieve an end of September 2016 carryover storage level of 415 TAF in New Melones Reservoir.

6) This Order does not authorize any act that results in the taking of a candidate, threatened or endangered species, or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). If a "take" will result from any act authorized under this Order, Reclamation shall obtain authorization for an incidental take permit prior to construction or operation of the project. Reclamation shall be responsible for meeting all requirements of the applicable Endangered Species Act for the temporary urgency changes authorized under this Order.

7) Reclamation shall immediately notify the Executive Director of the State Water Board if any significant change in conditions occurs that warrants reconsideration of this Order.

8) The Executive Director may make modifications to this Order based on additional public comment or changed circumstances, including modifications to the conditions of this Order to ensure the reasonable protection of fish and wildlife based on the recommendation of the fisheries agencies.

STATE WATER RESOURCES CONTROL BOARD

ORIGINAL SIGNED BY:

Thomas Howard
Executive Director
Dated: April 19, 2016

TABLE 1
WATER QUALITY OBJECTIVES FOR MUNICIPAL AND INDUSTRIAL BENEFICIAL USES

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER (RKI [1])	PARAMETER	DESCRIPTION (UNIT)	WATER YEAR TYPE [2]	TIME PERIOD	VALUE
Contra Costa Canal at Pumping Plant #1	C-5 (CHCCC06)	Chloride (Cl^-)	Maximum mean daily 150 mg/l Cl^- for at least the number of days shown during the Calendar Year. Must be provided in intervals of not less than two weeks duration. (Percentage of Calendar Year shown in parenthesis)			No. of days each Calendar Year ≤ 150 mg/l Cl^-
-or-				W		240 (66%)
San Joaquin River at Antioch Water Works Intake	D-12 (near) (RSAN007)			AN		190 (52%)
				BN		175 (48%)
				D		165 (45%
				C		155 (42%)
Contra Costa Canal at Pumping Plant #1	C-5 (CHCCC06)	Chloride (Cl^-)	Maximum mean daily (mg/l)	All	Oct-Sep	250
-and-						
West Canal at mouth of Clifton Court Forebay	C-9 (CHWST0)					
-and-						
Delta-Mendota Canal at Tracy Pumping Plant	DMC-1 (CHDMC004)					
-and-						
Barker Slough at North Bay Aqueduct Intake	---- (SLSAR3)					
-and-						
Cache Slough at City of Vallejo Intake [3]	C-19 (SLCCH16)					

[1] River Kilometer Index station number.
[2] The Sacramento Valley 40-30-30 water year hydrologic classification index (see Figure 1) applies for determinations of water year type.
[3] The Cache Slough objective to be effective only when water is being diverted from this location.

TABLE 2
WATER QUALITY OBJECTIVES FOR AGRICULTURAL BENEFICIAL USES

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER (RKI [1])	PARAMETER	DESCRIPTION (UNIT) [2]	WATER YEAR TYPE [3]	TIME PERIOD	VALUE
WESTERN DELTA						
Sacramento River at Emmaton	*D-22 (RSAC092)*	*Electrical Conductivity (EC)*	*Maximum 14-day running average of mean daily EC (mmhos/cm)*		*0.45 EC April 1 to date shown*	*EC from date shown to Aug 15 [4]*
				W	*Aug 15*	*----*
				AN	*Jul 1*	*0.63*
				BN	*Jun 20*	*1.14*
				D	*Jun 15*	*1.67*
				C	*----*	*2.78*
San Joaquin River at Jersey Point	*D-15\ (RSAN018)*	*Electrical Conductivity (EC)*	*Maximum 14-day running average of mean daily EC (mmhos/cm)*		*0.45 EC April 1 to date shown*	*EC from date shown to Aug 15 [4]*
				W	*Aug 15*	*----*
				AN	*Aug 15*	*----*
				BN	*Jun 20*	*0.74*
				D	*Jun 15*	*1.35*
				C	*----*	*2.20*
INTERIOR DELTA						
South Fork Mokelumne River at Terminous	*C-13 (RSMKL08)*	*Electrical Conductivity (EC)*	*Maximum 14-day running average of mean daily EC (mmhos/cm)*		*0.45 EC April 1 to date shown*	*EC from date shown to Aug 15 [4]*
				W	*Aug 15*	*----*
				AN	*Aug 15*	*----*
				BN	*Aug 15*	*----*
				D	*Aug 15*	*----*
				C	*----*	*0.54*
San Joaquin River at San Andreas Landing	*C-4 (RSAN032)*	*Electrical Conductivity (EC)*	*Maximum 14-day running average of mean daily EC (mmhos/cm)*		*0.45 EC April 1 to date shown*	*EC from date shown to Aug 15 [4]*
				W	*Aug 15*	*----*
				AN	*Aug 15*	*----*
				BN	*Aug 15*	*----*
				D	*Jun 25*	*0.58*
				C	*----*	*0.87*
SOUTHERN DELTA						
San Joaquin River at Airport Way Bridge, Vernalis ***-and-*** *San Joaquin River at Brandt Bridge site[5]* ***-and-*** *Old River near Middle River [5]* ***-and-*** *Old River at Tracy Road Bridge [5]*	*C-10 (RSAN112)* *C-6 (RSAN073)* *C-8 (ROLD69)* *P-12 (ROLD59)*	*Electrical Conductivity (EC)*	*Maximum 30-day running average of mean daily EC (mmhos/cm)*	*All*	*Apr-Aug Sep-Mar*	*0.7 1.0*
EXPORT AREA						
West Canal at mouth of Clifton Court Forebay ***-and-*** *Delta-Mendota Canal at Tracy Pumping Plant*	*C-9 (CHWST0)* *DMC-1 (CHDMC004)*	*Electrical Conductivity (EC)*	*Maximum monthly average of mean daily EC (mmhos/cm)*	*All*	*Oct-Sep*	*1.0*

[1] River Kilometer Index station number.

[2] Determination of compliance with an objective expressed as a running average begins on the last day of the averaging period. The averaging period commences with the first day of the time period for the applicable objective. If the objective is not met on the last day of the averaging period, all days in the averaging period are considered out of compliance.

[3] The Sacramento Valley 40-30-30 water year hydrologic classification index (see Figure 1) applies for determinations of water year type.

[4] When no date is shown, EC limit continues from April 1.

[5] The 0.7 EC objective becomes effective on April 1, 2005. The DWR and the USBR shall meet 1.0 EC at these stations year round until April 1, 2005. The 0.7 EC objective is replaced by the 1.0 EC objective from April through August after April 1, 2005 if permanent barriers are constructed, or equivalent measures are implemented, in the southern Delta and an operations plan that reasonably protects southern Delta agriculture is prepared by the DWR and the USBR and approved by the Executive Director of the SWRCB. The SWRCB will review the salinity objectives for the southern Delta in the next review of the Bay-Delta objectives following construction of the barriers.

TABLE 3
WATER QUALITY OBJECTIVES FOR FISH AND WILDLIFE BENEFICIAL USES

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER (RKI [1])	PARAMETER	DESCRIPTION (UNIT) [2]	WATER YEAR TYPE [3]	TIME PERIOD	VALUE
SAN JOAQUIN RIVER SALINITY						
San Joaquin River at and between Jersey Point and Prisoners Point [4]	*D-15 (RSAN018)* **-and-** *D-29 (RSAN038)*	*Electrical Conductivity (EC)*	*Maximum 14-day running average of mean daily EC(mmhos/cm)*	*W,AN,BN,D*	*Apr-May*	*0.44 [5]*
EASTERN SUISUN MARSH SALINITY						
Sacramento River at Collinsville **-and-** *Montezuma Slought at National Steel* **-and-** *Montezuma Slough near Beldon Landing*	*C-2 (RSAC081)* *S-64 (SLMZU25)* *S-49 (SLMZU11)*	*Electrical Conductivity (EC)*	*Maximum monthly average of both daily high tide EC values (mmhos/cm), or demonstrate that equivalent or better protection will be provided at the location*	*All*	*Oct* *Nov-Dec* *Jan* *Feb-Mar* *Apr-May*	*19.0* *15.5* *12.5* *8.0* *11.0*
WESTERN SUISUN MARSH SALINITY						
Chadbourne Slough at Sunrise Duck Club **-and-** *Suisun Slough, 300 feet south of Volanti Slough*	*S-21 (SLCBN1)* *S-42 (SLSUS12)*	*Electrical Conductivity (EC)*	*Maximum monthly average of both daily high tide EC values (mmhos/cm), or demonstrate that equivalent or better protection will be provided at the location*	*All but deficiency period [6]*	*Oct* *Nov* *Dec* *Jan* *Feb-Mar* *Apr-May*	*19.0* *16.5* *15.5* *12.5* *8.0* *11.0*
				Deficiency Period [6]	*Oct* *Nov* *Dec-Mar* *Apr* *May*	*19.0* *16.5* *15.6* *14.0* *12.5*

TABLE 3 (continued)
WATER QUALITY OBJECTIVES FOR FISH AND WILDLIFE BENEFICIAL USES

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER(RKI1[])	PARAMETER	DESCRIPTION (UNIT) [2]	WATER YEAR TYPE [3]	TIME PERIOD	VALUE
DELTA OUTFLOW						
		Net Delta Outflow Index (NDOI) [7]	*Minimum monthly average [8] NDOI (cfs)*	*All*	*Jan*	*4,500 [9]*
				All	*Feb-Jun*	*[10]*
				W,AN	*Jul*	*8,000*
				BN		*6,500*
				D		*5,000*
				C		*4,000*
				W,AN,BN	*Aug*	*4,000*
				D		*3,500*
				C		*3,000*
				All	*Sep*	*3,000*
				W,AN,BN,D	*Oct*	*4,000*
				C		*3,000*
				W,AN,BN,D	*Nov-Dec*	*4,500*
				C		*3,500*
RIVER FLOWS						
Sacramento River at Rio Vista	*D-24 (RSAC101)*	*Flow rate*	*Minimum monthly average [11] flow rate (cfs)*	*All*	*Sep*	*3,000*
				W,AN,BN,D	*Oct*	*4,000*
				C		*3,000*
				W,AN,BN,D	*Nove-Dec*	*4,500*
				C		*3,500*
San Joaquin River at Airport Way Bridge, Vernalis	*C-10 (RSAN112)*	*Flow rate*	*Minimum monthly average [12] flow rate (cfs) [13]*	*W,AN*	*Feb-Apr 14*	*2,130 or 3,420*
				BN,D	*and*	*1,420 or 2,280*
				C	*May 16-Jun*	*710 or 1,140*
				W	*Apr 15-*	*7,330 or 8,620*
				AN	*May 15 [14]*	*5,730 or 7,020*
				BN		*4,620 or 5,480*
				D		*4,020 or 4,880*
				C		*3,110 or 3,540*
				All	*Oct*	*1,000 [15]*
EXPORT LIMITS						
		Combined export rate [16]	*Maximum 3-day running average (cfs)*	*All*	*Apr 15- May 15 [17]*	*[18]*
				All	*Feb-Jun*	*35% Delta inflow [21]*
			Maximum percent of Delta inflow diverted [19] [20]	*All*	*Jul-Jan*	*65% Delta inflow*
DELTA CROSS CHANNEL GATES CLOSURE						
Delta Cross Channel at Walnut Grove	—	*Closure of gates*	*Closed gates*	*All*	*Nov-Jan*	*[22]*
					Feb-May 20	*----*
					May 21- Jun 15	*[23]*

Table 3 Footnotes

[1] River Kilometer Index station number.

[2] Determination of compliance with an objective expressed as a running average begins on the last day of the averaging period. The averaging period commences with the first day of the time period of the applicable objective. If the objective is not met on the last day of the averaging period, all days in the averaging period are considered out of compliance.

[3] The Sacramento Valley 40-30-30 Water Year Hydrologic Classification Index (see Figure 1) applies unless otherwise specified.

[4] Compliance will be determined at Jersey Point (station D15) and Prisoners Point (station D29).

[5] This standard does not apply in May when the best available May estimate of the Sacramento River Index for the water year is less than 8.1 MAF at the 90% exceedence level. [Note: The Sacramento River Index refers to the sum of the unimpaired runoff in the water year as published in the DWR Bulletin 120 for the following locations: Sacramento River above Bend Bridge, near Red Bluff; Feather River, total unimpaired inflow to Oroville Reservoir; Yuba River at Smartville; and American River, total unimpaired inflow to Folsom Reservoir.]

[6] A deficiency period is: (1) the second consecutive dry water year following a critical year; (2) a dry water year following a year in which the Sacramento River Index (described in footnote 5) was less than 11.35 MAF; or (3) a critical water year following a dry or critical water year. The determination of a deficiency period is made using the prior year's final Water Year Type determination and a forecast of the current year's Water Year Type; and remains in effect until a subsequent water year is other than a Dry or Critical water year as announced on May 31 by DWR and USBR as the final water year determination.

[7] Net Delta Outflow Index (NDOI) is defined in Figure 3.

[8] For the May-January objectives, if the value is less than or equal to 5,000 cfs, the 7-day running average shall not be less than 1,000 cfs below the value; if the value is greater than 5,000 cfs, the 7-day running average shall not be less than 80% of the value.

[9] The objective is increased to 6,000 cfs if the best available estimate of the Eight River Index for December is greater than 800 TAF. [Note: The Eight River Index refers to the sum of the unimpaired runoff as published in the DWR Bulletin 120 for the following locations: Sacramento River flow at Bend Bridge, near Red Bluff; Feather River, total inflow to Oroville Reservoir; Yuba River flow at Smartville; American River, total inflow to Folsom Reservoir; Stanislaus River, total inflow to New Melones Reservoir; Tuolumne River, total inflow to Don Pedro Reservoir; Merced River, total inflow to Exchequer Reservoir; and San Joaquin River, total inflow to Millerton Lake.]

[10] The minimum daily net Delta outflow shall be 7,100 cfs for this period, calculated as a 3-day running average. This requirement is also met if either the daily average or 14-day running average EC at the confluence of the Sacramento and the San Joaquin rivers is less than or equal to 2.64 mmhos/cm (Collinsville station C2). If the best available estimate of the Eight River Index (described in footnote 9) for January is more than 900 TAF, the daily average or 14-day running average EC at station C2 shall be less than or equal to 2.64 mmhos/cm for at least one day between February 1 and February 14; however, if the best available estimate of the Eight River Index for January is between 650 TAF and 900 TAF, the Executive Director of the SWRCB is delegated authority to decide whether this requirement applies. If the best available estimate of the Eight River Index for February is less than 500 TAF, the standard may be further relaxed in March upon the request of the DWR and the USBR, subject to the approval of the Executive Director of the SWRCB. The standard does not apply in May and June if the best available May estimate of the Sacramento River Index (described in footnote 5) for the water year is less than 8.1 MAF at the 90% exceedence level.

Under this circumstance, a minimum 14-day running average flow of 4,000 cfs is required in May and June. Additional Delta outflow objectives are contained in Table 4.

[11] The 7-day running average shall not be less than 1,000 cfs below the monthly objective.

[12] Partial months are averaged for that period. For example, the flow rate for April 1-14 would be averaged over 14 days. The 7-day running average shall not be less than 20% below the flow rate objective, with the exception of the April 15-May 15 pulse flow period when this restriction does not apply.

[13] The water year classification for the San Joaquin River flow objectives will be established using the best available estimate of the 60-20-20 San Joaquin Valley Water Year Hydrologic Classification (see Figure 2) at the 75% exceedence level. The higher flow objective applies when the 2-ppt isohaline (measured as 2.64 mmhos/cm surface salinity) is required to be at or west of Chipps Island.

[14] This time period may be varied based on real-time monitoring. One pulse, or two separate pulses of combined duration equal to the single pulse, should be scheduled to coincide with fish migration in San Joaquin River tributaries and the Delta. The USBR will schedule the time period of the pulse or pulses in consultation with the USFWS, the NMFS, and the DFG. Consultation with the CALFED Operations Group established under the Framework Agreement will satisfy the consultation requirement. The schedule is subject to the approval of the Executive Director of the SWRCB.

[15] Plus up to an additional 28 TAF pulse/attraction flow during all water year types. The amount of additional water will be limited to that amount necessary to provide a monthly average flow of 2,000 cfs. The additional 28 TAF is not required in a critical year following a critical year. The pulse flow will be scheduled by the DWR and the USBR in consultation with the USFWS, the NMFS and the DFG. Consultation with the CALFED Operations Group established under the Framework Agreement will satisfy the consultation requirement.

[16] Combined export rate for this objective is defined as the Clifton Court Forebay inflow rate (minus actual Byron-Bethany Irrigation District diversions from Clifton Court Forebay) and the export rate of the Tracy pumping plant.

[17] This time period may be varied based on real-time monitoring and will coincide with the San Joaquin River pulse flow described in footnote 18. The DWR and the USBR, in consultation with the USFWS, the NMFS and the DFG, will determine the time period for this 31-day export limit. Consultation with the CALFED Operations Group established under the Framework Agreement will satisfy the consultation requirement.

[18] Maximum export rate is 1,500 cfs or 100% of 3-day running average of San Joaquin River flow at Vernalis, whichever is greater. Variations to this maximum export rate may be authorized if agreed to by the USFWS, the NMFS and the DFG. This flexibility is intended to result in no net water supply cost annually within the limits of the water quality and operational requirements of this plan. Variations may result from recommendations of agencies for protection of fish resources, including actions taken pursuant to the State and federal Endangered Species Act. Any variations will be effective immediately upon notice to the Executive Director of the SWRCB. If the Executive Director of the SWRCB does not object to the variations within 10 days, the variations will remain in effect. The Executive Director of the SWRCB is also authorized to grant short-term exemptions to export limits for the purpose of facilitating a study of the feasibility of recirculating export water into the San Joaquin River to meet flow objectives.

[19] Percent of Delta inflow diverted is defined in Figure 3. For the calculation of maximum percent Delta inflow diverted, the export rate is a 3-day running average and the Delta inflow is a 14-day running average, except when the CVP or the SWP is making storage withdrawals for export, in which case both the export rate and the Delta inflow are 3-day running averages.

[20] The percent Delta inflow diverted values can be varied either up or down. Variations are authorized subject to the process described in footnote 18.

[21] If the best available estimate of the Eight River Index (described in footnote 9) for January is less than or equal to 1.0 MAF, the export limit for February is 45% of Delta inflow. If the best available estimate of the Eight River Index for January is greater than 1.5 MAF, the February export limit is 35% of Delta inflow. If the best available estimate of the Eight River Index for January is between 1.0 MAF and 1.5 MAF, the DWR and the USBR will set the export limit for February within the range of 35% to 45%, after consultation with the USFWS, the NMFS and the DFG. Consultation with the CALFED Operations Group established under the Framework Agreement will satisfy the consultation requirement.

[22] For the November-January period, close Delta Cross Channel gates for a total of up to 45 days. The USBR will determine the timing and duration of the gate closure after consultation with the USFWS, the NMFS and the DFG. Consultation with the CALFED Operations Group established under the Framework Agreement will satisfy the consultation requirement.

[23] For the May 21-June 15 period, close Delta Cross Channel gates for a total of 14 days. The USBR will determine the timing and duration of the gate closure after consultation with the USFWS, the NMFS and the DFG. Consultation with the CALFED Operations Group established under the Framework Agreement will satisfy the consultation requirement.

Figure 1
Sacramento Valley
Water Year Hydrologic Classification

Year classification shall be determined by computation of the following equation:

$$\textbf{INDEX} = 0.4 * X + 0.3 * Y + 0.3 * Z$$

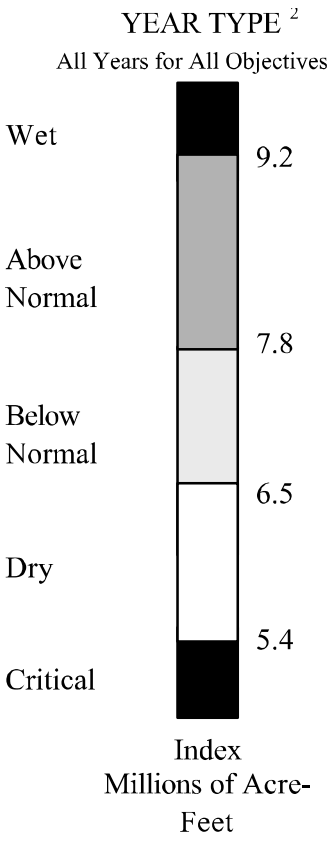
Where: X = Current year's April – July Sacramento Valley unimpaired runoff

Y = Current October – March Sacramento Valley unimpaired runoff

Z = Previous year's index[1]

The Sacramento Valley unimpaired runoff for the current water year (October 1 of the preceding calendar year through September 30 of the current calendar year), as published in California Department of Water Resources Bulletin 120, is a forecast of the sum of the following locations: Sacramento River above Bend Bridge, near Red Bluff; Feather River, total inflow to Oroville Reservoir; Yuba River at Smartville; American River, total inflow to Folsom Reservoir. Preliminary determinations of year classification shall be made in February, March, and April with final determination in May. These preliminary determinations shall be based on hydrologic conditions to date plus forecasts of future runoff assuming normal precipitation for the remainder of the water year.

Classification	Index Millions of Acre-Feet (MAF)
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



[1] A cap of 10.0 MAF is put on the previous year's index (Z) to account for required flood control reservoir releases during wet years.

[2] The year type for the preceding water year will remain in effect until the initial forecast of unimpaired runoff for the current water year is available.

Figure 2
San Joaquin Valley
Water Year Hydrologic Classification

Year classification shall be determined by computation of the following equation:

INDEX = 0.6 * X + 0.2 * Y + 0.2 * Z

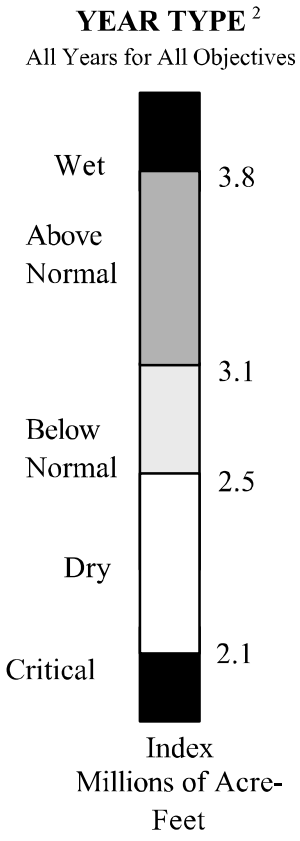
Where: X = Current year's April – July
San Joaquin Valley unimpaired runoff

Y = Current October – March
San Joaquin Valley unimpaired runoff

Z = Previous year's index[1]

The San Joaquin Valley unimpaired runoff for the current water year (October 1 of the preceding calendar year through September 30 of the current calendar year), as published in California Department of Water Resources Bulletin 120, is a forecast of the sum of the following locations: Stanislaus River, total flow to New Melones Reservoir; Tuolumne River, total inflow to Don Pedro Reservoir; Merced River, total flow to Exchequer Reservoir; San Joaquin River, total inflow to Millerton Lake. Preliminary determinations of year classification shall be made in February, March, and April with final determination in May. These preliminary determinations shall be based on hydrologic conditions to date plus forecasts of future runoff assuming normal precipitation for the remainder of the water year.

Classification	Index Millions of Acre-Feet (MAF)
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



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[1] A cap of 4.5 MAF is put on the previous year's index (Z) to account for required flood control reservoir releases during wet years.

[2] The year type for the preceding water year will remain in effect until the initial forecast of unimpaired runoff for the current water year is available.

Figure 3
NDOI and PERCENT INFLOW DIVERTED [1]

The NDOI and the percent inflow diverted, as described in this footnote, shall be computed daily by the DWR and the USBR using the following formulas (all flows are in cfs):

NDOI = DELTA INFLOW - NET DELTA CONSUMPTIVE USE - DELTA EXPORTS

PERCENT INFLOW DIVERTED = (CCF + TPP) ÷ DELTA INFLOW

where *DELTA INFLOW = SAC + SRTP + YOLO + EAST + MISC + SJR*

SAC	=	Sacramento River at Freeport mean daily flow for the previous day; the 25-hour tidal cycle measurements from 12:00 midnight to 1:00 a.m. may be used instead.
SRTP	=	Sacramento Regional Treatment Plant average daily discharge for the previous week.
YOLO	=	Yolo Bypass mean daily flow for the previous day, which is equal to the flows from the Sacramento Weir, Fremont Weir, Cache Creek at Rumsey, and the South Fork of Putah Creek.
EAST	=	Eastside Streams mean daily flow for the previous day from the Mokelumne River at Woodbridge, Cosumnes River at Michigan Bar, and Calaveras River at Bellota.
MISC	=	Combined mean daily flow for the previous day of Bear Creek, Dry Creek, Stockton Diverting Canal, French Camp Slough, Marsh Creek, and Morrison Creek.
SJR	=	San Joaquin River flow at Vernalis, mean daily flow for the previous day.

where *NET DELTA CONSUMPTIVE USE = GDEPL - PREC*

GDEPL	=	Delta gross channel depletion for the previous day based on water year type using the DWR's latest Delta land use study.[2]
PREC	=	Real-time Delta precipitation runoff for the previous day estimated from stations within the Delta.

and where *DELTA EXPORTS*[3] *= CCF + TPP + CCC + NBA*

CCF	=	Clifton Court Forebay inflow for the current day.[4]
TPP	=	Tracy Pumping Plant pumping for the current day.
CCC	=	Contra Costa Canal pumping for the current day.
NBA	=	North Bay Aqueduct pumping for the current day.

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1 Not all of the Delta tributary streams are gaged and telemetered. When appropriate, other methods of estimating stream flows, such as correlations with precipitation or runoff from nearby streams, may be used instead.

2 The DWR is currently developing new channel depletion estimates. If these new estimates are not available, DAYFLOW channel depletion estimates shall be used.

3 The term "Delta Exports" is used only to calculate the NDOI. It is not intended to distinguish among the listed diversions with respect to eligibility for protection under the area of origin provisions of the California Water Code.

4 Actual Byron-Bethany Irrigation District withdrawals from Clifton Court Forebay shall be subtracted from Clifton Court Forebay inflow. (Byron-Bethany Irrigation District water use is incorporated into the GDEPL term.

Table 4. Number of Days When Maximum Daily Average Electrical Conductivity of 2.64 mmhos/cm Must Be Maintained at Specified Location

Number of Days When Maximum Daily Average Electrical Conductivity of 2.64 mmhos/cm Must Be Maintained at Specified Location [a]																	
PMI[b] (TAF)	Chipps Island (Chipps Island Station D10)					PMI[b] (TAF)	Port Chicago (Port Chicago Station C14) [d]					PMI[b] (TAF)	Port Chicago (Port Chicago Station C14)[d]				
	FEB	MAR	APR	MAY	JUN		FEB	MAR	APR	MAY	JUN		FEB	MAR	APR	MAY	JUN
≤ 500	0	0	0	0	0	0	0	0	0	0	0	5250	27	29	25	26	6
750	0	0	0	0	0	250	1	0	0	0	0	5500	27	29	26	28	9
1000	28[c]	12	2	0	0	500	4	1	0	0	0	5750	27	29	27	28	13
1250	28	31	6	0	0	750	8	2	0	0	0	6000	27	29	27	29	16
1500	28	31	13	0	0	1000	12	4	0	0	0	6250	27	30	27	29	19
1750	28	31	20	0	0	1250	15	6	1	0	0	6500	27	30	28	30	22
2000	28	31	25	1	0	1500	18	9	1	0	0	6750	27	30	28	30	24
2250	28	31	27	3	0	1750	20	12	2	0	0	7000	27	30	28	30	26
2500	28	31	29	11	1	2000	21	15	4	0	0	7250	27	30	28	30	27
2750	28	31	29	20	2	2250	22	17	5	1	0	7500	27	30	29	30	28
3000	28	31	30	27	4	2500	23	19	8	1	0	7750	27	30	29	31	28
3250	28	31	30	29	8	2750	24	21	10	2	0	8000	27	30	29	31	29
3500	28	31	30	30	13	3000	25	23	12	4	0	8250	28	30	29	31	29
3750	28	31	30	31	18	3250	25	24	14	6	0	8500	28	30	29	31	29
4000	28	31	30	31	23	3500	25	25	16	9	0	8750	28	30	29	31	30
4250	28	31	30	31	25	3750	26	26	18	12	0	9000	28	30	29	31	30
4500	28	31	30	31	27	4000	26	27	20	15	0	9250	28	30	29	31	30
4750	28	31	30	31	28	4250	26	27	21	18	1	9500	28	31	29	31	30
5000	28	31	30	31	29	4500	26	28	23	21	2	9750	28	31	29	31	30
5250	28	31	30	31	29	4750	27	28	24	23	3	10000	28	31	30	31	30
≤ 5500	28	31	30	31	30	5000	27	28	25	25	4	>10000	28	31	30	31	30

[a] The requirement for number of days the maximum daily average EC (EC) of 2.64 mmhos per centimeter (mmhos/cm) must be maintained at Chipps Island and Port Chicago can also be met with maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average NDOIs of 11,400 cfs and 29,200 cfs, respectively. If salinity/flow objectives are met for a greater number of days than the requirements for any month, the excess days shall be applied to meeting the requirements for the following month. The number of days for values of the PMI between those specified in this table shall be determined by linear interpolation.

[b] PMI is the best available estimate of the previous month's Eight River Index. (Refer to Footnote 10 for Table 3 for a description of the Eight River Index.)

[c] When the PMI is between 800 TAF and 1000 TAF, the number of days the maximum daily average EC of 2.64 mmhos/cm (or maximum 14-day running average EC of 2.64 mmhos/cm, or 3-day running average NDOI of 11,400 cfs) must be maintained at Chipps Island in February is determined by linear interpolation between 0 and 28 days.

[d] This standard applies only in months when the average EC at Port Chicago during the 14 days immediately prior to the first day of the month is less than or equal to 2.64 mmhos/cm.