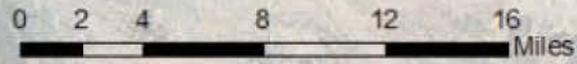


Legend

- ◆ Delta Cross Channel
- Delta Salinity Gages
- Cosumnes River
- Mokumne River
- ◆ DSM2 Nodes
- Flowline Segments
- Cross-Sections
- - - Legal Delta Boundary 2002



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

**In the Matter of Specified License and Permits¹ of the
Department of Water Resources and U.S. Bureau of Reclamation
for the State Water Project and Central Valley Project**

**ORDER CONDITIONALLY APPROVING A PETITION FOR TEMPORARY URGENCY
CHANGES IN LICENSE AND PERMIT TERMS AND CONDITIONS REQUIRING
COMPLIANCE WITH DELTA WATER QUALITY OBJECTIVES IN RESPONSE TO DROUGHT
CONDITIONS**

BY THE EXECUTIVE DIRECTOR

1.0 INTRODUCTION

On January 23, 2015, the Department of Water Resources (DWR) and the United States Bureau of Reclamation (Reclamation) (hereinafter the Petitioners) jointly filed a Temporary Urgency Change Petition (TUCP) pursuant to Water Code section 1435 et seq., to temporarily change their water right permits and license for the State Water Project (SWP) and Central Valley Project (CVP) (collectively Projects). In response to the ongoing drought emergency, the Petitioners sought changes to permit and license conditions imposed pursuant to State Water Resources Control Board (State Water Board) Water Right Decision 1641(D-1641) that require the Petitioners to meet flow-dependent and operational water quality objectives designed to protect fish and wildlife and agricultural beneficial uses in the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta). On February 3, 2015, the Executive Director issued an order approving in part the TUCP, subject to conditions. The Executive Director modified the February 3, 2015 Order on March 5, 2015, and on April 6, 2015. On May 21, 2015, the Petitioners submitted a request to the State Water Board to modify and renew the TUCP Order pursuant to Water Code section 1441, which allows for temporary change orders to be renewed for up to 180 additional days. The May 21, 2015 request replaces a request made on March 24, 2015, for changes during the July 1 through November 30 period on which the Executive Director had not yet taken action. This Order acts upon the May 21, 2015 request.

The February and March Orders approved changes to Delta outflow requirements, export limits, a requirement to close the Delta Cross Channel (DCC) Gates, and San Joaquin River flow requirements for the months of February and March. The April 6, 2015 Order extended the changes to Delta outflow and export requirements through June, and extended the change to the DCC Gate closure requirement through May 20, 2015. In addition, the Order changed the volume of the San Joaquin River at Vernalis spring pulse flow requirement (the timing of the requirement was also changed separately), changed the minimum San Joaquin River flow requirement at Vernalis

¹ The petition was filed for Permits 16478, 16479, 16481, 16482 and 16483 (Applications 5630, 14443, 14445A, 17512 and 17514A, respectively) of the Department of Water Resources for the State Water Project and License 1986 and Permits 11315, 11316, 11885, 11886, 11887, 11967, 11968, 11969, 11970, 11971, 11972, 11973, 12364, 12721, 12722, 12723, 12725, 12726, 12727, 12860, 15735, 16597, 20245, and 16600 (Applications 23, 234, 1465, 5638, 13370, 13371, 5628, 15374, 15375, 15376, 16767, 16768, 17374, 17376, 5626, 9363, 9364, 9366, 9367, 9368, 15764, 22316, 14858A, 14858B, and 19304, respectively) of the United States Bureau of Reclamation for the Central Valley Project.

following the pulse flow period through June 30, and moved the compliance point for the Western Delta agricultural electrical conductivity (EC) (a measure of salinity) requirement from Emmaton on the Sacramento River to Threemile Slough on the Sacramento River during the April through June period. The April 6 Order did not act on requested changes after June 30 because it was anticipated that the Petitioners would submit a request for additional changes starting in mid-June if conditions continued to be historically dry. Further, DWR and Reclamation needed to submit a request to renew the TUCP Order for changes sought after August 3 since that date is 180 days after the February 3 Order. Unless renewed, a TUCP order remains in effect for 180 days.

In addition to the previous TUCP Orders, on May 4, 2015, the State Water Board issued a water quality certification to install an emergency drought barrier at West False River to help preserve water quality in the Delta. The temporary rock barrier will prevent tide-driven saltwater from pushing too deeply into the Delta and allow water managers to retain some water in upstream reservoirs for release later in the year.

The May 21, 2015 request seeks the following changes to D-1641 requirements:

1. For July, to reduce the minimum Delta outflow from a monthly average of 4,000 cubic feet per second (cfs), with a seven-day running average of no less than 3,000 cfs, to a monthly average of 3,000 cfs, with a seven-day running average of no less than 2,000 cfs;
2. To reduce the minimum Sacramento River flow requirements at Rio Vista from a monthly average of 3,000 cfs in September and October, and 3,500 cfs in November, to a monthly average of 2,500 cfs for all three months, with a seven-day running average of no less than 2,000 cfs; and
3. To extend through August 15 the change of the compliance point for the Western Delta agricultural salinity requirement from Emmaton on the Sacramento River to Threemile Slough on the Sacramento River.

This Order approves, subject to conditions, the changes described above and continues export constraints when the above requirements are not being met. In addition, in response to comments received related to this matter and updated information, this Order continues and modifies consultation, monitoring, modeling, reporting, and planning requirements included in the April 6 Order. Specifically, this Order imposes additional consultation, monitoring, modeling, reporting and planning requirements to: improve temperature management on the Sacramento and Stanislaus Rivers; ensure municipal water supply reliability from Folsom Reservoir and critical grid reliability; provide CVP refuge managers information to plan for water allocations this summer and fall; and better understand the effects of reduced Delta outflows with the temporary drought barrier at False River in place.

The April 6 Order required Reclamation to prepare and implement a Temperature Management Plan for the Sacramento River for the protection of winter-run Chinook salmon and other salmonids, so that the mortality of nearly all the brood year of juvenile winter-run Chinook salmon, which occurred in 2014, would not reoccur in 2015. Reclamation submitted a draft Temperature Management Plan for review and approval by the Executive Director in mid-April, and an updated plan on May 4, 2015. The Executive Director provisionally approved the Temperature Management Plan on May 14, 2015. Since that time, Reclamation has revised the plan based on updated temperature profile measurements taken at Shasta Lake and associated temperature modeling information. Reclamation submitted the revised plan for the Executive Director's review and approval on June 26. The additional monitoring, modeling, and reporting requirements imposed by this Order should serve to inform and improve real-time operations in accordance with the revised plan and to improve

planning in the future. This order does not approve the revised plan, however, which will be evaluated separately.

The April 6 Order also required Reclamation to develop and implement a plan approved by the Executive Director for operations of New Melones Reservoir that reasonably protects fish and wildlife on the Stanislaus River. Prolonged drought conditions in the San Joaquin River Basin and in the Stanislaus River sub-basin have led to very low reservoir storage levels in New Melones Reservoir which are expected to lead to very high temperatures on the Stanislaus River that will be harmful to steelhead this summer and fall-run Chinook salmon this fall. As a result, the April 6 Order required Reclamation to develop a plan to address these issues. Reclamation submitted a plan on May 15, 2015, that called for use of the low-level outlet on New Melones Reservoir to help control temperatures starting in July. Currently, however, storage levels are higher than originally projected, and it is not expected that the low-level outlet can be used until late August. Additionally, Stanislaus River temperature modeling indicates that high temperatures could be reduced for part of the late summer with releases of cold water from the low level outlet, but with a resulting higher release temperature in the fall. All of these issues create a significant concern regarding operation of New Melones this year and going into next year if drought conditions continue. Accordingly, this Order requires Reclamation to reevaluate the Stanislaus River plan given the changed conditions to determine if improvements can be made to operations to better protect fish and wildlife.

This Order also addresses concerns with potential low storage levels in Folsom Reservoir on the American River that may result from modifications in operations related to the TUCP and water supply concerns for power generation. Specifically, the Order requires that upon the request of the Executive Director, Reclamation and DWR propose adjusted operations to ensure that critical water supplies are available for municipal and industrial use, including to cities served by Folsom Reservoir, and to provide cooling water needed to maintain local grid reliability.

To address concerns that CVP refuge managers have identified with uncertainty about the timing and quantity of their water supplies this summer and fall, this Order requires Reclamation to coordinate with those refuges and provide needed information for the refuges to make planning decisions. Lastly, to ensure that needed monitoring is being conducted to understand and evaluate the effects of reduced Delta outflows in combination with a drought barrier that was installed at False River, this Order requires DWR and Reclamation to perform necessary monitoring.

This Order is consistent with the legal requirements governing approval of a TUCP. In order to approve a TUCP, the State Water Board or its Executive Director, acting under delegated authority, must find (1) that there is an urgent need for the proposed changes, (2) that the changes will not injure any legal user of water, (3) that the changes will not result in unreasonable effects to fish and wildlife, and (4) that the changes are in the public interest. In determining whether the impacts of a change on fish and wildlife would be unreasonable, and whether the change would be in the public interest, the impacts of the change must be weighed against the benefits of the change to all beneficial uses, including fish and wildlife.

The modifications approved by this Order apply to requirements to meet water quality objectives designed to protect fish and wildlife beneficial uses, with the exception of the change to the requirement to meet the salinity objective at Emmaton, which is designed to protect agricultural beneficial uses. As described in section 5.3 of this Order, as conditioned by this Order, the modifications to the Emmaton salinity compliance point, as well as the other requirements will not injure any lawful user of water. In addition, as described in more detail in section 5.4, as conditioned

by this Order, the potential impacts of the changes on fish and wildlife are not unreasonable, taking into consideration the need to conserve Project storage for municipal, agricultural and other water supply users, as well as for temperature control and other fisheries purposes below Project reservoirs, and salinity control in the Delta.

The changes approved in this order will reduce flows in the Bay-Delta in favor of improved water supplies and reservoir storage levels. The resulting impacts of the proposed changes on fish and wildlife in the Bay-Delta must be weighed against the impacts to all beneficial uses of water if the changes are not approved. California is in the midst of a significant, multi-year drought driven by the lack of rain and snowfall around the state. The historically low snowpack will result in very low inflows the remainder of the year that typically maintain stream flows over the summer and provide inflows to reservoirs. The drought is having devastating effects on communities, farmers, farm workers, the fishing industry, and the environment, and has caused substantial human suffering.

The potential water supply and storage savings from the changes approved by this Order (and the previous 2015 Orders described above) total almost 700 thousand acre-feet (TAF) of water. Conserving upstream storage is particularly important because water released from storage can serve multiple purposes, thereby maximizing the beneficial use of scarce water supplies. Specifically, water released from storage for temperature control to benefit salmon also can be used for agricultural or municipal purposes downstream or south of the Delta, or for salinity control in the Delta.

This Order achieves a reasonable balance of competing demands for the limited water supplies available during the ongoing drought, while taking into consideration: (1) the impacts of reduced Delta outflows on estuarine species and migrating salmonids in the Bay-Delta, (2) the need to conserve water in upstream storage for multiple, critical purposes later in the year, including temperature control on Project rivers, agricultural use, wildlife refuges, municipal and industrial use, and salinity control in the Delta, and (3) the need to export water for a variety of uses south of the Delta, including agricultural use, municipal and industrial use, and wildlife refuges.

2.0 BACKGROUND

2.1 Bay-Delta Plan, D-1641

The Water Quality Control Plan for the Bay-Delta Estuary (Bay-Delta Plan) specifies water quality objectives for the protection of beneficial uses of water in the Bay-Delta, including fish and wildlife, agricultural, and municipal and industrial uses. The water quality objectives included in the Bay-Delta Plan were developed through a rigorous and extensive public process to determine the flow-dependent water quality requirements that are needed to reasonably protect the beneficial uses of water in the Bay-Delta. During that process, the State Water Board considered and balanced the various beneficial uses of water under various hydrologic conditions and acknowledged that there would be tradeoffs, especially during dry conditions.

In D-1641, based on various agreements that were reached by the Projects, the State Water Board amended the water right permits and license for the SWP and CVP to require the Projects to meet certain objectives in the Bay-Delta Plan². Specifically, D-1641 places responsibility on DWR and Reclamation for measures to ensure that specified water quality objectives included in Tables 1, 2, and 3 of D-1641 are met, in addition to other requirements. The flow and water quality requirements

² D-1641 originally implemented the 1995 Bay-Delta Plan. In 2006, the State Water Board amended the Bay-Delta Plan to make minor modifications to the Program of Implementation.

established by the State Water Board in D-1641 are summarized in the tables and figures contained in Attachment 1 to this Order: Table 1 (Municipal and Industrial Beneficial Uses), Table 2 (Agricultural Beneficial Uses), and Table 3 (Fish and Wildlife Beneficial Uses). Included in Attachment 1 are footnotes to Table 3 that refer to definitions and other requirements contained in Figure 1 (Sacramento Valley Water Year Hydrologic Classification), Figure 2 (San Joaquin Valley Water Year Hydrologic Classification), Figure 3 (Formulas for NDOI and Percent Inflow Diverted), and Table 4 (Chippis Island and Port Chicago Maximum Daily Average EC).

The objectives are intended to protect fish and wildlife living in or migrating through the Bay-Delta, and also to keep the Delta and water exported from the Delta from getting too salty for municipal and agricultural uses. Analyses completed to support the flow and salinity objectives in the Bay-Delta Plan and D-1641 were developed based on historic hydrologic conditions that included hydrologic conditions similar to the drought conditions experienced to date. However, the analyses did not include the additional constraints on Project operations that now exist under the U. S. Fish and Wildlife Service (USFWS) Biological Opinion on the Coordinated Long-Term Operations of the CVP and SWP (USFWS Biological Opinion) and National Marine Fisheries Service (NMFS) Biological Opinion and Conference Opinion for the Long-term Operation of the CVP and SWP (NMFS Biological Opinion). The analyses also did not account for the increased SWP demands that have been realized since the 1995 Bay-Delta Plan and D-1641 were adopted, or the large scale shifts from annual to permanent crops that have occurred since the 1995 Bay-Delta Plan and D-1641 were adopted that have increased the impacts of the drought on water users.

Delta Outflow Requirements

The Delta outflow objectives are intended to protect estuarine and migratory aquatic species and their habitat. Delta outflows affect migration patterns of both resident and anadromous species and the availability of suitable habitat for those species. The populations of several estuarine-dependent species of fish and shrimp vary positively with flow, as do other measures of the health of the estuarine ecosystem. Freshwater flow also is an important factor in cuing upstream migration of adult salmonids through the Delta, and in the downstream migration and survival of juvenile salmonids. Freshwater inflows also have chemical and biological consequences through the effects of inflows on loading of nutrients and organic matter, pollutant concentrations, and residence time.

Listed in Table 3 of the Bay-Delta Plan and D-1641, the Delta outflow objectives include year round requirements that vary by month and water year type. With some flexibility provided through a limited set of compliance alternatives, the basic outflow objectives require calculated minimum net flow from the Delta to Suisun and San Francisco Bays (the Net Delta Outflow Index or NDOI). Pursuant to D-1641, the Delta outflow requirement for July during critical water years is 4,000 cfs on a monthly average. Footnote 8 to Table 3 also specifies that for the May through January period for flow requirements less than 5,000 cfs, the 7-day running average shall not be less than 1,000 cfs below the requirement.

Export Limits

The export limits objective listed in Table 3 of the Bay-Delta Plan and D-1641 includes requirements to limit the quantity of inflow that is diverted from the south Delta by the SWP and CVP pumping facilities to protect fish and wildlife uses. For the July through January time period, exports are limited to 65 percent of Delta inflow on either a 3-day or 14-day running average, unless the Executive Director allows for a variation upon concurrence of USFWS, NMFS, and the California Department of Fish and Wildlife (CDFW) (hereafter collectively referred to as the fisheries agencies).

Sacramento River Flow at Rio Vista Requirements

The Sacramento River flow requirement is listed in Table 2 of the Bay-Delta Plan and D-1641 and includes one compliance location at Rio Vista. This monthly flow requirement in critical water years is 3,000 cfs during September and October and 3,500 cfs in November and December. Additionally, pursuant to footnote 11, the 7-day average is required to be no less than 1,000 cfs below the monthly objectives.

Western Delta Agricultural Salinity Requirements

The western Delta salinity requirements are listed in Table 2 of the Bay-Delta Plan and D-1641 and include two compliance locations, including one on the Sacramento River at Emmaton for which a requested change was made. The salinity requirement is intended to provide protection of agricultural uses in the western Delta from salinity intrusion. For the April 1 to August 15 period in critically dry years the maximum 14-day running average of mean daily EC is 2.78 millimhos per centimeter (mmhos/cm).

2.2 Drought Conditions, Water Supply Effects and Economic Effects

Hydrology

California is experiencing its fourth consecutive year of below-average rainfall and very low snowpack. Water Year 2015 is also the eighth of nine years with below average runoff, which has resulted in chronic and significant shortages to municipal and industrial, agricultural, and refuge supplies and historically low groundwater levels. As of June 23, 2015, 71 percent of the state is experiencing an Extreme Drought and 47 percent is experiencing an Exceptional Drought, as recorded by the National Drought Mitigation Center, U.S. Drought Monitor.

Of particular concern this year is the state's critically low snowpack which typically provides much of California's seasonal water storage. This year that snow pack was at historically low levels throughout the state. As of the end of May all of the snow stations were at zero percent of average. Typically snowmelt throughout the summer provides for inflows to streams and reservoirs during the dry summer months. This historically low snowpack will result in very low inflows until significant precipitation events occur.

In the Sacramento River watershed, Water Year 2012 was classified as below normal, Water Year 2013 as dry and Water Years 2014 and 2015 as critically dry. As of June 29, 2015, the Northern Sierra 8-Station Precipitation Index was at 36 inches, 74 percent of average. The lack of precipitation the last several years has contributed to low reservoir storage levels in the Sacramento watershed. Storage in Shasta Reservoir peaked at 2,722,000 acre-feet on April 16, 2015, which was 60 percent of capacity (69 percent of normal for April). It has since been drawn down to 49 percent of capacity (all storage levels as of end of June). Storage in Oroville Reservoir peaked at 1,812,640 acre-feet on April 17, 2015, which was 51 percent of capacity (63 percent of normal for April). It has since been drawn down to 40 percent of capacity. Folsom Reservoir peaked at 577,381 acre-feet on April 28, 2015, which was 59 percent of capacity (79 percent of normal for April). It has since been drawn down to 46 percent of capacity. Trinity Lake (water from the Trinity system is transferred to the Sacramento River system) peaked at 1,202,000 acre-feet on April 18, 2015, which was 49 percent of capacity (60 percent of normal for April). It has since been drawn down to 38 percent of capacity. These reservoir levels are of particular concern considering the expected lack of inflows throughout the summer and into fall.

The San Joaquin River watershed in particular has experienced severely dry conditions for the past four years. Water Year 2012 was classified as dry and Water Years 2013, 2014 and 2015 as

critically dry. As of June 29, 2015, the San Joaquin Valley 5-Station Precipitation Index is at 17.7 inches, 45 percent of average for this time of year. The lack of precipitation in the last few years has contributed to historically low reservoir storage levels throughout the watershed. Storage in New Don Pedro Reservoir peaked at 894,000 acre-feet on March 29, 2015, which was 44 percent of capacity (60 percent of normal for March). It has since been drawn down to 37 percent of capacity. Storage in New Melones Reservoir peaked at 607,235 acre-feet on March 3, 2015, which was 25 percent of capacity (40 percent of normal for March). It has since been drawn down to 17 percent of capacity. Storage in Millerton Reservoir peaked at 204,760 acre-feet on March 30, 2015, which was 39 percent of capacity (56 percent of normal for March). It has since been drawn down to 33 percent of capacity. Due to severe reductions in reservoir discharges New Exchequer Reservoir on the Merced River is still filling from upper watershed accretions, but is currently only at 13 percent of capacity (18 percent of normal for June).

Complications of Low-Reservoir Storage Levels

To complicate the storage issue in 2015, some of the reservoirs have physical characteristics which limit the release of water for water supply purposes and the release of cold water for fish and wildlife beneficial uses. In 2014, Reclamation lost control of their ability to release cold water Shasta Dam for fish and wildlife beneficial uses on the Sacramento River. The effects of limited cold water storage and loss of temperature control out of Shasta from mid-August through the fall of 2014 led to mortality to nearly all of the brood year 2014 endangered winter-run Chinook salmon and significant adverse effects on other salmonids. With the current and projected low storage levels in Shasta Reservoir this year, there has been great concern that there would be a repeat of these conditions this year that would have significant effects on the viability of the winter-run Chinook salmon population in the future.

There has also been great concern that low storage levels in New Melones Reservoir and associated elevated temperature conditions on the Stanislaus River this year will lead to very high or complete mortality of steelhead and fall-run Chinook salmon on the river this year, which is cause for significant concerns for the viability of those populations. Similar concerns exist for steelhead and fall-run Chinook salmon on the American River because storage levels are very low in Folsom Reservoir and river temperatures are expected to be very warm. In addition, there are significant concerns that diminishing storage levels will also make water in Folsom Reservoir inaccessible to municipalities that rely on that water.

To address some of these issues this year, the April 6 TUCP Order required Reclamation to develop and implement plans to protect fisheries from elevated temperatures on the Stanislaus and Sacramento Rivers. Reclamation submitted a draft plan for the Sacramento River in mid-April with updated information in early May. With that plan, Reclamation indicated that it believed that temperatures of 56 degrees Fahrenheit could be maintained throughout the temperature control season at the Clear Creek compliance location and also submitted modeling indicating that temperatures could be achieved. Based on that information, the Executive Director provisionally approved the draft plan. In late May however, Reclamation indicated that it could not maintain temperatures at 56 degrees at the Clear Creek compliance location throughout the temperature control season due to significant reductions in cold water supplies indicated in reservoir temperature profile readings beginning in late April and continuing through May. Based on this new information, the Executive Director suspended his provisional approval of the draft plan and directed that Reclamation work with the fisheries agencies and State Water Board staff to develop a revised plan.

Reclamation submitted a revised plan on June 25, 2015, that does not achieve a temperature of 56 degrees, but that should provide for stable slightly higher temperatures throughout the temperature

control season. Specifically, to maintain cold water supplies throughout the temperature control season, the plan calls for real-time operations that target 57 degrees at the Clear Creek compliance location without exceeding 58 degrees with minimized flows. The revised proposed plan is expected to be more protective over the long term than targeting 56 degrees with higher flows now and running out of cold water before the temperature control season is complete. However, there are still concerns with maintaining temperature control throughout the egg incubation period with the revised plan due to the very low cold water storage levels, expected heat waves, inaccuracies of the temperature control model that was used to help develop the revised plan and other issues that will need to be managed very closely. There are also concerns with meeting flow and salinity requirements in the Delta with these lower flows from Shasta Reservoir because Shasta Reservoir typically provides much of the flow needed to meet these requirements. To compensate for these changes, the revised plan is predicated on higher releases from Oroville and Folsom Reservoirs, reduced exports from the Delta, effective operation of the False River drought barrier, and approval of the changes included in the TUCP. Without the storage savings from the TUCP, it would be very difficult for Reclamation and DWR to meet minimal demands on the system, including salinity control, temperatures, and water supplies. The Executive Director is expected to act on the revised plan shortly.

Reclamation submitted an operations plan for the Stanislaus River on May 15, 2015, that identified projected storage conditions and expected operations. The proposed operations included use of the low level outlet on New Melones Reservoir beginning in July when reservoir levels reached approximately 300 TAF to provide access to cold water that is not accessible from the upper level outlet under the current low storage conditions. However, current storage levels in New Melones Reservoir are higher than expected and are not projected to reach 300 TAF until late August. This creates concerns for temperature management on the Stanislaus River in July and most of August if the low level outlet is not used until late August. As a result of these conditions, the Executive Director sent Reclamation a letter on June 26, 2015, directing Reclamation to evaluate options for improving temperature management and provide additional information.

Water Supply Allocations

With respect to water supplies, in 2014, DWR delivered 5 percent of its long-term contractor delivery requests and 100 percent to its Feather River senior settlement contractors. In 2014, Reclamation delivered no water to its (non-settlement) agricultural contractors and 50 percent to municipal and industrial contractors. Reclamation also delivered 75 percent to its settlement contractors and 65 percent to the exchange contractors on the San Joaquin River. For 2014, wildlife refuges received 65 to 75 percent of their Level 2 refuge deliveries depending on the location.

On March 2, 2015, DWR announced allocations of 839,566 acre-feet for deliveries to its contractors, about 20 percent of the 4.2 million acre-feet annual long-term SWP contractor requests. On February 27, 2015, Reclamation announced that the initial 2015 water supply allocation for its agricultural and municipal contractors is 0 and 25 percent, respectively. On March 27, 2015, Reclamation confirmed these allocations along with allocations of 75 percent to settlement and exchange contractors and refuges. Since that time, Reclamation has indicated that exchange contractor and CVP refuge allocations will likely be lower and the timing will be uncertain due to inadequate supplies to meet all CVP Project demands while also meeting minimal protections for fish and wildlife, particularly Sacramento River temperature control. The uncertainty regarding the amount and timing of supplies is a significant concern to water users south of the Delta who have planned on those supplies directly or for water exchanges, as well as refuge managers who are concerned about inadequate food supplies and disease outbreaks for birds on the Pacific Flyway due to inadequate water supplies this summer and fall.

Economic Effects of Water Supply Reductions

On July 15, 2014, the University of California Davis Center for Watershed Sciences released a report estimating the effects of the drought in 2014 on Central Valley farm production and providing data about effects of the drought in coastal and southern farm areas. The report also forecasted the drought's economic fallout through 2016. Key findings of the drought's effects in 2014 include:

- The total statewide economic cost of the drought in 2014 was \$2.2 billion.
- Direct costs to agriculture totaled \$1.5 billion of which \$1 billion were due to revenue losses and \$0.5 billion were due to additional pumping costs. This net revenue loss was about three percent of the state's total agricultural value.
- 17,100 seasonal and part-time jobs related to agriculture were lost representing 3.8 percent of farm unemployment.
- Approximately 428,000 acres, or five percent, or irrigated cropland went out of production in the Central Valley, Central Coast and Southern California.
- The Central Valley was hardest hit, particularly the Tulare Basin, with estimated losses of \$800 million in crop revenue and \$447 million in additional well-pumping costs.
- Statewide dairy and livestock losses from reduced pasture and higher hay and silage costs represented \$203 million in revenue losses.

On June 8, 2015, the University of California, Davis updated these estimates on its California Water Blog (<http://californiawaterblog.com/>). They reported that California's agricultural industry gained a monthly average of more than 4,000 jobs in 2014, up one percent from 2013. Even though the drought has caused some growers to fallow hundreds of thousands of acres of land, other agricultural sectors have continued to grow. The growth in labor is largely from farmers shifting to more profitable permanent crops that usually take more farm workers to produce, such as tree fruits and nuts, and vine crops and vegetables. The job losses and other impacts from the large scale fallowing however, still has devastating local and regional effects on individual farmers, farm workers and many communities.

On May 31, 2015, the University of California, Davis released a paper for the California Department of Food and Agriculture entitled "Preliminary Analysis: 2015 Drought Economic Impact Study" (https://watershed.ucdavis.edu/files/biblio/2015Drought_PrelimAnalysis.pdf). Major findings from the paper include:

- The total statewide economic cost of the drought in 2015 will be \$2.7 billion.
- Direct costs to agriculture will total \$1.8 billion of which \$0.9 billion will be due to revenue losses, \$0.6 billion will be due to additional pumping costs and the rest will be due to livestock and dairy revenue loss.
- 18,600 seasonal and part-time jobs related to agriculture will be lost.
- Approximately 564,000 acres of irrigated cropland will go out of production in the Central Valley, Central Coast and Southern California.

2.3 Governor's Executive Orders

On January 17, 2014, Governor Brown proclaimed a State of Emergency due to severe drought conditions and directed the State Water Board, among other things, to consider modifying requirements for reservoir releases or diversion limitations that were established to implement a water quality control plan. Such modifications, which could be accomplished through actions on requests such as the TUCP, would enable water to be conserved in upstream reservoirs that may be

needed later in the year to protect cold water pools for salmon and steelhead, to maintain water supplies, and to improve water quality. To carry out this directive, Governor Brown also suspended the California Environmental Quality Act (CEQA), the CEQA regulations, and Water Code 13247 (requiring state agencies, including the State Water Board, to comply with water quality control plans unless otherwise directed or authorized by statute).

The directive applicable to the State Water Board's action on the TUCP and suspensions of law remain in effect. 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 waiver of CEQA and Water Code section 13247 contained in the January 17, 2014 and April 25, 2014 Proclamations through May 31, 2016. On April 1, 2015, Governor Brown acknowledged the continuing magnitude of the drought and issued Executive Order B-29-15, which requires the orders and provisions of the prior proclamations and executive orders to remain in full force and effect unless otherwise modified. The provisions of the January 2014 Proclamation that apply to this action are still in effect.

2.4 2014 TUCPs and Drought Contingency Plan

Last year, DWR and Reclamation filed a TUCP seeking changes to the water right permits for the SWP and the water right license and permits for the CVP that were similar to the changes sought this year. The Executive Director conditionally approved the 2014 TUCP on January 31, 2014. As the result of changed circumstances and subsequent requests from DWR and Reclamation, and in response to objections to the TUCP Order, the Executive Director modified the TUCP Order on February 7, 2014, February 28, 2014, March 18, 2014, April 9, 2014, April 11, 2014, April 18, 2014, May 2, 2014, and October 7, 2014, to extend and change the conditions of the TUCP Order. In the May 2, 2014 TUCP Order, the Executive Director renewed the TUCP Order, which subsequently expired on January 27, 2015.

On September 24, 2014, the State Water Board adopted Order WR 2014-0029, which addressed objections to and denied petitions for reconsideration of the Executive Director's January 31, 2014 TUCP Order and subsequent modifications thereto. While the State Water Board denied the petitions for reconsideration in Order WR 2014-0029, it did make some modifications to the TUCP Order in response to issues raised by some of the petitioners and other commenters in order to improve planning and coordination if dry conditions were to continue. Specifically, the Order required the preparation of a Water Year 2015 Drought Contingency Plan (DCP). The Order required the DCP to identify planned minimum monthly flow and storage conditions that consider Delta salinity control, fishery protection, and supplies for municipal water users related to projected flow and storage conditions. The Order required a final DCP by January 15, 2015, with updates as needed. DWR and Reclamation submitted the final DCP on January 15, 2015. The January 15, 2015 DCP identified likely 2015 TUCP requests by the Petitioners by month for the 50 percent, 90 percent, and 99 percent exceedance hydrologic scenarios. Each of these forecasts projected monthly storage levels, reservoir releases, Delta pumping rates, and Delta outflow through the end of September 30, 2015. The changes requested pursuant to the January 23, 2015 and May 21, 2015 TUCP are largely consistent with the January 15, 2015 DCP, with the exception of the request to modify Delta outflow in July.

2.5 Previous 2015 Orders

February 3, 2015 Order

On February 3, 2015, the Executive Director issued an order that took action on the January 23, 2015 TUCP. The February 3, 2015 Order approved the following temporary changes to D-1641 requirements during February and March:

1. The minimum daily average net Delta outflow requirement of 7,100 cfs or equivalent salinity specified in footnote 10 of D-1641, plus the requirement to meet higher flows of 11,400 cfs or equivalent salinity at Chipps Island for a certain number of days specified in Table 4 of D-1641, was reduced to a minimum Delta outflow requirement of 4,000 cfs;
2. When D-1641 requirements were not being met, the maximum rate of export from the Delta was limited to: (a) 1,500 cfs when Delta outflow was between 4,000 cfs and 7,100 cfs or the DCC Gates were open, or (b) up to the D-1641 limits when the DCC Gates were closed and Delta outflow was above 7,100 cfs but the additional requirements included in Table 4 were not being met except that those diversions were limited to natural and abandoned flows;
3. The requirement to close the DCC Gates was changed to allow the gates to be open under certain circumstances; and
4. The minimum San Joaquin River flow requirement at Vernalis was reduced from 710 or 1,140 cfs, depending on hydrology, to 500 cfs.

The February 3 Order did not approve a requested intermediate export level of 3,500 cfs when Delta outflow was at least 5,500 cfs.

March 5, 2015 Order

Subsequent to the issuance of the February 3 Order, the State Water Board received written comments, objections, and petitions for reconsideration. The State Water Board also held a public workshop on February 18, 2015, to receive oral comments on the January 23 Petition and the February 3 Order. These comments along with updated hydrologic, biologic, and water supply information informed the March 5, 2015 update to the February 3 Order. The March 5, 2015, Order modified the February 3 Order by specifying that:

1. Petitioners should use the conserved water pursuant to the TUCP in accordance with their 2015 DCP and Temperature Management Plan for the Sacramento River;
2. Water transfers were exempted from the export provisions; and
3. The intermediate export rate of 3,500 cfs was approved when Delta outflow was between 5,500 cfs and 7,100 cfs, the DCC gates were closed, and DWR or Reclamation determined that additional water was necessary to meet minimum public health and safety needs after notifying the Executive Director.

April 6, 2015 Order

On March 24, 2015, DWR and Reclamation requested approval of additional changes to D-1641 flow and water quality requirements through November of this year. The Executive Director issued an Order based on that request on April 6, 2015, that approved changes through June. The April 6 Order extended the changes to Delta outflow and export requirements described above through June, and extended the change to DCC Gate requirements through May 20. In addition, the April 6 Order made the following changes:

1. Separately, the Executive Director had approved a shift in the time period for the San Joaquin River at Vernalis pulse flow requirement from April 15 through May 15, to March 25 through April 25. The April 6 Order reduced the required volume of the pulse flow during this time period from 3,110 cfs, depending on hydrology, to 710 cfs. In addition, the April 6 Order required Reclamation to comply with the pulse flow requirement contained in the NMFS Biological Opinion;
2. The minimum San Joaquin River flow requirement at Vernalis was changed following the pulse flow period described above and until May 31 from 710 cfs or 1,140 cfs, depending on hydrology, to 300 cfs. In June, the requirement was reduced to 200 cfs; and
3. The compliance point for the Western Delta agricultural salinity requirement at Emmaton on the Sacramento River was moved to Threemile Slough on the Sacramento River from April through June.

In addition to the workshop on February 18 discussed above, the State Water Board also held workshops on May 20 and June 24, 2015, to discuss the TUCP and related matters. The State Water Board has also received numerous comments, objections and petitions for reconsideration related to this matter. The information from the workshops and comments were considered in development of this Order.

2.6 Substance of the Temporary, Urgency Change Petition

The Petitioners request the following temporary changes to requirements that were imposed pursuant to D-1641 for the period July 1 through November 30:

- For July, reduce the minimum Delta outflow from a monthly average of 4,000 cfs, with a seven-day running average of no less than 3,000 cfs, to a monthly average of 3,000 cfs, with a seven-day running average of no less than 2,000 cfs;
- Reduce the minimum Sacramento River flow requirements at Rio Vista from a monthly average of 3,000 cfs in September and October, and 3,500 cfs in November, to a monthly average of no less than 2,500 cfs for all three months, with a seven-day running average of no less than 2,000 cfs; and
- Extend through August 15 the change to the compliance point for the Western Delta agricultural salinity requirement from Emmaton on the Sacramento River to Threemile Slough on the Sacramento River.

2.7 Status of Fish Species and Biological Reviews

The extreme drought conditions that have been occurring for the last four years are having significant impacts on fish and wildlife. The TUCP changes will also have some effects on fish and wildlife, however it is difficult to separate these effects from the effects of the drought itself in many cases. As an attachment to the TUCP, the Petitioners submitted a Biological Review that was prepared for purposes of consultation with the fisheries agencies pursuant to the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA). The Biological Review evaluates the effects on fish species listed as threatened or endangered under the ESA and CESA, which can be indicators of conditions for aquatic species in general in the Delta watershed. Following is a summary of the potential effects of the TUCP changes, including information from the Biological Review that accompanied the TUCP.

Delta Smelt

Recent population indices for Delta smelt, which is listed as threatened under both the ESA and CESA, are at record low numbers. This is of particular concern given that most Delta smelt do not survive to spawn more than one season and are thus for the most part an annual species.

Delta smelt have a strong positive relationship with a specific location in the low salinity zone (LSZ) referred to as X2 where the average daily salinity at the bottom of the water column measures 2 practical salinity units (psu). By local convention X2 is described in terms of distance from the 2 psu isohaline to the Golden Gate Bridge. Ecologically, X2 serves as an indicator of habitat suitability for many San Francisco Estuary organisms and is associated with variance in abundance of diverse components of the ecosystem (Jassby et al. 1995). The LSZ expands and moves downstream when river flows into the estuary are high. Similarly, it contracts and moves upstream when river flows are low. At all times of year, the location of X2 influences both the area and quality of habitat available for Delta smelt to successfully complete their life cycle. In general, Delta smelt habitat quality and surface area are greater when X2 is located in Suisun Bay. Both habitat quality and quantity diminish the more frequently and further the LSZ moves upstream, toward the confluence of the Sacramento and San Joaquin rivers (Feyrer et al. 2007), thus further constraining the habitat for juvenile Delta smelt closer to the upstream spawning areas in the lower Sacramento River, San Joaquin River, and the Cache Slough Complex/Sacramento Deep Water Ship Channel (SDWSC).

While there are likely to be few adult Delta smelt that live through the summer, monitoring and historical data suggests the majority of those fish are and will continue to be located outside of the South Delta during the summer and fall. The fifth Spring Kodiak Trawl (SKT)³ survey conducted the week of May 4, 2015, identified 4 adults in the Sacramento Deep Water Ship Channel (SDWSC), and one in Cache Slough. The fourth SKT survey, conducted during the week of April 6, 2015, identified one adult, which was a record low for that survey (Smelt Working Group (SWG);⁴ May 13 notes). According to the SWG, it appears fish density has become so low that the SKT has reached or gone below its minimum effective detection ability (SWG; April 13 Notes). Additionally, in the final week (March 30) of supplemental USFWS sampling in the lower San Joaquin River, catch of adult Delta smelt declined precipitously to zero in the final month of sampling.

Delta Smelt spawning is likely to have peaked in March or April, with larvae detected in the Sacramento River system in early March, and larvae detected in the lower San Joaquin River in late March during the Smelt Larval Survey. A juvenile survey, conducted in late March and early April detected juvenile Delta Smelt in the San Joaquin River at Jersey Point, but the subsequent two surveys reflected presence only in SDWSC. As water temperatures rise, larvae will start to recruit to juvenile size and may begin to disperse further throughout the system. Juvenile Delta Smelt during the summer period typically reside in the LSZ around X2, with a substantial portion of the population remaining in the North Delta. The CDFW Summer Trawl Survey (TNS) samples the distribution of Delta Smelt throughout the summer and early fall period, and in the summer of 2014 consistently detected Delta Smelt in both of these areas. It is thought that Delta Smelt in the Cache Slough Complex use deep water areas of Cache Slough and the Sacramento Deep Water Ship Channel as thermal refuges during high summer temperatures. Delta Smelt continue to feed and grow throughout summer months and begin to move upstream

³ The SKT has sampled annually since its inception in 2002, and replaced the fall midwater trawl in order to more effectively track the movements of mature adult Delta smelt. The SKT samples 40 stations each month from January to May. These 40 stations range from San Pablo Bay upstream to Stockton on the San Joaquin River, Walnut Grove on the Sacramento River, and the SDWSC.

⁴ The SWG consists of experts in Delta smelt biology from the USFWS, Reclamation, U.S. Environmental Protection Agency, DWR, NMFS, and CDFW. The SWG evaluates up-to-date biological and technical issues regarding Delta and longfin smelt and develops recommendations for consideration by the USFWS in its implementation of the USFWS Biological Opinion.

in early winter during periods of increased outflow and high turbidities, which typically do not commence until December.

The proposed TUCP changes will have effects on physical habitat and water quality which may affect Delta smelt. The changes will add to the already unfavorable conditions related to the dry conditions. The Biological Review finds that reductions in inflows and outflows associated with the changes to Delta outflow, Western Delta agricultural salinity and Sacramento River flows may reduce the general quality of habitat conditions throughout the Delta. Further, survival of Delta smelt that are currently in the interior and North Delta may be reduced through increased exposure to degraded habitat and predators and increased travel time for migrating fish. In the lower San Joaquin River, the upstream relocation of X2 may result in a greater proportion of the available habitat encompassing areas of high semi-aquatic vegetation and associated low turbidities. This could result in lower prey availability and higher predation rates on juvenile Delta smelt. Further constraining Delta Smelt closer to the upstream spawning areas in the lower Sacramento River, San Joaquin River, and the Cache Slough Complex/SDWSC will increase Delta smelt exposure to less favorable conditions. Conditions in these regions are generally warmer in the summer than locations further west due to prolonged heat waves and less marine influence. Juvenile Delta smelt may be able to reside in thermal refugia to reduce these effects, but it is not clear how long that cool water refugia will be available this summer. In addition, due to the more upstream location of X2, it is also likely that summer Delta smelt distributions will not be in areas for optimal growth and survival further west in Suisun Bay. Reduced inflows and outflows may also affect Delta smelt's ability to move downstream to cooler habitats with more food resources. These effects could pose additional risks to the persistence of local populations.

Because Delta smelt are not currently expected to be distributed in the central and south Delta and turbidity and exports are expected to be low when operating under the TUCP changes, the Biological Review finds that entrainment and salvage effects associated with the changes are unlikely.

Longfin Smelt

Longfin smelt, which is listed as threatened under CESA and is a candidate for listing as threatened or endangered under ESA, experienced its second lowest Fall Midwater Trawl (FMWT) survey index in 2014. Similar low indices are also expected this fall. Based upon the most recent 20mm survey data, the majority of juvenile longfin smelt appear to be distributed in the lower Sacramento River near the confluence and in Montezuma Slough, with lower densities near Franks Tract in the South Delta. Given the limited distribution of larvae and juveniles in the Central and South Delta, and the very low levels of projected exports, the Biological Review finds that the proposed changes are not expected to substantially raise the entrainment risk of the Longfin Smelt population. While larvae in southern areas will be at risk of entrainment during operations due to their proximity to the export facilities, the minimal export levels should result in a low level of risk. In addition, only a small portion of the population is thought to be in the south Delta (approximately 3.5 percent of the total larval catch). However, potential exists for longfin smelt to migrate into the south Delta toward the end of the period of these changes. The Biological Review indicates that the proposed changes are not expected to result in a substantial degradation of rearing habitat for longfin smelt over conditions that would be experienced in a dry year. The Biological Review finds that reduction in outflow due to the proposed changes may have some negative impact on Longfin spawning and recruitment, though this effect is hard to quantify given the already poor environmental conditions due to the drought.

Estuarine Habitat and Species

The Biological Review focused on species listed under ESA and CESA, but the proposed action is also likely to have adverse effects on other beneficial uses protected under D-1641. In particular the Delta outflow objectives in Tables 3 and 4 of D-1641 are designed to protect the estuarine ecosystem in order to provide habitat for several species of pelagic fish and crustaceans whose populations show strong positive relationships to Delta outflow. Since most of these species are not afforded the protections of ESA and CESA, many have undergone population declines over the history of water development in the Bay-Delta. As discussed above for Delta smelt, decreasing Delta outflow constrains habitat by moving X2 and the LSZ inland from the shallow, more favorable habitats of Suisun Bay to the deeper, channelized, and less hospitable habitats of the lower Sacramento and San Joaquin Rivers and their confluence. This reduction in habitat quantity and quality will also likely result in lower survival and recruitment of several other estuarine dependent species.

Winter-Run Chinook Salmon

The endangered winter-run Chinook salmon is of particular concern during drought years. Prior to the spawning period for winter-run Chinook salmon in the summer, adults hold in the upper Sacramento River below Keswick Dam until they are ready to initiate spawning, with the majority of spawning typically occurring between June and July. After spawning, the fertilized eggs require cold water to ensure their proper development (temperatures above 56 degrees Fahrenheit being less than optimal). It is particularly important to provide appropriate temperature conditions during the egg development period, typically late May through early fall, because immobile eggs are not able to seek thermal refugia as fry and parr are able to do. Adults returning to the river in 2015 are predominantly members of the cohort from BY 2012 (assuming a 3-year cohort cycle). Based on cohort replacement rate (CRR)⁵ estimates, BY 2012 had the fifth lowest CRR since 1992, making this year's run of particular concern.

As discussed above, temperature control was lost several weeks before the end of the egg incubation life stage last year resulting in almost total mortality to the 2014 winter-run brood year. Temperature management will be difficult again this year. This is of particular concern given winter-run Chinook's endangered status and extremely limited distribution, which reduces this population's ability to withstand environmental perturbations, especially during a prolonged drought when each of the existing brood years has been already negatively affected by drought conditions.

As discussed above, the proposed changes should improve conditions for winter-run Chinook salmon this summer and early fall, by conserving cold-water in Shasta Reservoir for use through the spawning and egg incubation period. Nonetheless, the concern for winter-run Chinook continues this year due to the higher target temperatures (57 to 58 degrees), uncertainty concerning the temperature model, limited amount of cold water available and higher air temperatures.

Spring-Run Chinook Salmon

The 2014 spawning run of spring-run Chinook salmon returning to the upper Sacramento River system also experienced significant impacts due to drought conditions as well as elevated temperatures on the Sacramento River and other tributaries. Similar to winter-run, spring-run eggs in

⁵ An evaluation of one spawning generation compared to the next is known as the CRR. It is a parameter used to describe the number of future spawners produced by each spawner. This spawner-to-spawner ratio is defined by the number of naturally spawning adults in the previous generation. The ratio describes the rate at which each subsequent generation, or cohort, replaces the previous one, and can be described as a natural cohort replacement rate.

the Sacramento River experienced significant and potentially complete mortality due to high water temperatures downstream of Keswick Dam starting in early September 2014 when water temperatures exceeded 56 degrees Fahrenheit. Extremely few juvenile spring-run Chinook salmon were observed this year migrating downstream of the Sacramento River during high winter flows, when spring-run originating from the upper Sacramento River, Clear Creek, and other northern tributaries are typically observed, indicating that the population was significantly impacted. Similar concerns for spring-run exist this year as for winter-run. While spring-run have greater distribution and inhabit locations in addition to the Sacramento River, conditions on those streams are also expected to be poor due to the drought. The conservation of storage expected as a result of the changes in the TUCP are expected to also benefit spring-run this year.

Fall-Run Chinook Salmon

Impacts to other anadromous species not addressed in the Biological Review, including commercially important fall-run Chinook salmon are also expected as a result of the drought. If these impacts are severe enough they could result in significant impacts to the commercial and recreation fishing industry.

Adult fall-run Chinook salmon typically migrate into natal rivers from September to December, with peak migration typically occurring in November. Spawning may occur as early as November when temperatures in the rivers are lower than 55 degrees Fahrenheit. Egg incubation also may occur in November, but can vary depending on water temperatures and timing of spawning. Optimal water temperatures for egg incubation range from 41 to 55 degrees Fahrenheit. Eggs that incubate at temperatures higher than 60 degrees Fahrenheit and lower than 38 degrees Fahrenheit suffer high mortality rates. The proposed changes are likely to improve conditions for fall-run Chinook by conserving water in Project reservoirs that may be needed for temperature control in the fall. Despite this improvement, however, projected end of September storage conditions in Shasta, Folsom and New Melones Reservoirs may be insufficient to avoid significant impacts to fall-run Chinook salmon spawning and incubating during the end of 2015 because of a lack of cold water pool availability.

Steelhead

Steelhead have also likely been affected by the drought, but given the difficulty in sampling for these fish it is problematic to determine exactly how the species have been affected. Adult steelhead abundance is not estimated in the mainstem of the Sacramento River or any waterways of the Central Valley. The drought conditions are causing increased stress to steelhead populations (with or without water project operations) from low flows causing reduced rearing and migratory habitat, increased water temperatures affecting survival, and likely higher than normal predation of juvenile steelhead. The changes proposed in the TUCP will conserve Project storage which will mitigate these effects to some extent. Regardless of the changes though, steelhead survival will likely be low in all tributaries and migratory pathways, and is likely to result in a smaller returning year class of steelhead emigrating this year.

Green Sturgeon

Information on green sturgeon is extremely limited. Adult green sturgeon may be present in the Delta from March to September, with the principal occurrence in upstream spawning areas in the Sacramento River occurring from mid-April to mid-June. Juvenile green sturgeon are routinely collected at the SWP and CVP salvage facilities throughout the year. Salvage records indicate that sub-adult green sturgeon may be present in the Delta during any month of the year in low numbers, but are most commonly salvaged in July and August. The proposed changes

are expected to provide similar benefits for green sturgeon as described above for salmon and steelhead related to improved storage and cold water resources.

2.8 Emergency Drought Barrier

On April 17, 2015 DWR applied for water quality certification to install an emergency drought barrier at West False River to help preserve water quality in the Delta. The temporary rock barrier will prevent tide-driven saltwater from pushing too deeply into the Delta and allow water managers to retain some water in upstream reservoirs for release later in the year. The State Water Board issued a water quality certification for the West False River barrier on May 4, 2015, and DWR completed closure of the barrier in late May and full construction in mid-June. Although the State Water Board approved the emergency drought barrier separately, installation of the barrier, together with the changes approved by this Order, will affect water quality and flows in the Delta. Accordingly, this Order addresses the need for additional monitoring in light of the barrier.

3.0 APPLICABILITY OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) 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 April 1, 2015 Executive Order B-29-15 extended the waiver of CEQA and Water Code section 13247 contained in the prior proclamations and executive orders through May 31, 2016. Absent suspension of section 13247, the State Water Board could not approve a change petition that modifies permits and licenses in a way that does not provide for full attainment of water quality objectives as required by the Bay-Delta Plan, even during a drought emergency.

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 delegated to the Board Members individually and to the Executive Director the authority to hold a hearing, if necessary, and act on a temporary urgency change petition. (Resolution 2012-0029, ¶¶ 2.2, 4.4.1)⁶

The State Water Board issued a notice of the original TUCP this year (submitted on January 23, 2015) on January 27, 2015. In addition to the Board providing public notice of the TUCP, the Petitioners published the notice in 19 newspapers from January 31 to February 5, 2015, in accordance with Water Code section 1438, subdivision (b)(1). Workshops were held on February 18 and May 20, 2015, which were also publically noticed, and provided a forum for individuals and entities to comment on the TUCP, and other drought related issues. On June 8, 2015, the State Water Board issued a notice for the May 21, 2015 request to modify and renew the TUCP. Similar to the January 23 TUCP, and in accordance with Water Code section 1438, subdivision (b)(1), the Petitioners published the notice in newspapers from June 20 to Jun 28, 2015. The State Water Board also posted the request on its website, and notified persons on its email distribution lists of the request. The State Water Board also held another workshop on June 24, 2015, to discuss drought

⁶ The Deputy Director for Water Rights may act on a temporary urgency change petition if there are no objections to the petition.

related Project operations this year, particularly proposed operations to control temperatures on the Sacramento River this summer.

Since the original notice of the first TUCP in January, the State Water Board has received numerous comments, objections and petitions for reconsideration. This Order does not provide written responses to all of the comments and objections due to the urgent nature of the request and the limited time to respond to the large number of comments and objections received. To the extent that issues have not been addressed, written responses will be provided at a later date. Although complete written responses are not being provided at this time, the comments, objections, and issues raised in the petitions for reconsideration were considered in reaching this decision.

5.0 REQUIRED FINDING 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:

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.) Temporary urgency change orders expire automatically 180 days after issuance, unless they are revoked or an earlier expiration date is specified. (*Id.*, § 1440.) The State Water Board may renew temporary urgency change orders for a period not to exceed 180 days. (*Id.*, § 1441.)

5.1 Summary of the Ordering Conditions that Support the Required Findings of Fact

As summarized and described in the introduction, this Order conditionally approves changes to Delta outflows, Sacramento River flow at Rio Vista, and Western Delta agricultural salinity requirements at Emmaton on the Sacramento River. This Order also includes other conditions intended to ensure that the changes can be made (1) without injury to other legal users of water; (2) without unreasonable effects on fish, wildlife, or other instream beneficial uses; and (3) in the public interest.

Following is a summary of the changes conditionally approved in this Order:

- For the remainder of July, a reduction of the minimum Delta outflow requirement from a monthly average of 4,000 cfs, with a seven-day running average of no less than 3,000 cfs, to a monthly average of 3,000 cfs, with a seven-day running average of no less than 2,000 cfs;
- A reduction of the minimum Sacramento River flow requirements at Rio Vista from a monthly average of 3,000 cfs in September and October, and 3,500 cfs in November, to a monthly average of 2,500 cfs for all three months, with a seven-day running average of no less than 2,000 cfs; and
- Through August 15, the movement of the compliance point for the Western Delta agricultural salinity requirement from Emmaton on the Sacramento River to Threemile Slough on the Sacramento River.

This Order continues the requirement for the Petitioners to consult on a regular basis with designated representatives of the State Water Board and the fisheries agencies to coordinate real-time operations based on current conditions and fisheries information to ensure that the proposed changes pursuant to this Order will not unreasonably affect fish, wildlife, and other instream uses of water. During the effective period of this Order, Petitioners propose to continue to consult with members of an ad hoc team, referred to as the RTDOMT, that was established in 2014 to fulfill this requirement.

This Order also continues the condition from the February 3, March 5, and April 6 Orders that required DWR and Reclamation calculate and maintain a record of the amount of water conserved through the changes authorized by this Order, as well as to describe where that water is being conserved.

This Order continues and augments the requirement for DWR and Reclamation to develop monthly water balance estimates indicating actual and proposed operations through the end of the water year. To better understand the effects of the TUCP, this Order adds a requirement that DWR and Reclamation also identify any Coordinated Operations Agreement⁷ imbalances. In addition, this Order continues the requirement for DWR and Reclamation to conduct necessary modeling and monitoring to inform real-time operational decisions and adds a specific requirement that necessary monitoring be conducted to understand the effects of reduced outflows with the emergency drought barrier at False River installed.

This Order continues the requirement that Reclamation implement a Temperature Management Plan on the Sacramento River as approved by the Executive Director. In addition, this Order imposes additional temperature monitoring, modeling, reporting and planning requirements to improve real-time temperature management on the Sacramento River.

This Order also continues and modifies the requirement for Reclamation to develop and implement a plan approved by the Executive Director for operations of New Melones Reservoir that reasonably protects fish and wildlife on the Stanislaus River. This Order also requires Reclamation to evaluate and document the effectiveness of this year's operations to protect fishery resources.

⁷ The Coordinated Operations Agreement (COA) is an agreement between the United States of America and the State of California that determines the respective sharing of water costs between the Projects to meet D-1641 objectives in the Delta. The agreement was enacted in 1986 for coordinated operations of the Projects. The principal tools the Projects rely on to meet D-1641 objectives in the Delta include increasing releases from upstream Project reservoirs, reduction in Project exports, and opening of the Delta Cross Channel Gates (DCC).

Upon the request of the Executive Director, this Order requires Reclamation and DWR to propose adjusted operations to ensure that critical water supplies are available for municipal and industrial use, including to cities served by Folsom Lake, and to provide cooling water needed to maintain grid reliability. This Order also requires Reclamation to consult with CVP refuge contractors and provide necessary information for their planning decisions.

This Order continues to reserve the Executive Director's authority to require modifications to the Order to protect fish and wildlife or other uses of water based on additional information.

5.2 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 in section 2.2, California is in its fourth year of drought. Reservoir levels are very low and will likely recede quickly due to historically low snowmelt and resulting significantly reduced inflows to reservoirs and streams. These reduced storage levels and reduced inflows create an urgent need to conserve, protect, and provide flexibility in making existing water resources available for various uses.

Relevant to the issue of urgency, as well as the findings regarding unreasonable impacts on fish and wildlife and the public interest, are the water supply benefits that are expected as a result of the changes. The changes approved in this Order are expected to result in over 330 TAF of water supply and storage benefits (see table below). Combined with the previous orders conditionally approving the TUCP this year, the water supply and storage benefits total almost 700 TAF this year. The changes will improve the Projects' ability to meet various obligations this summer and fall. Specifically, on the Sacramento River adequate storage must be maintained into the fall to protect temperatures on the Sacramento River. In order to maintain this water in storage, reservoir releases must be reduced. As discussed above, reduced reservoir releases from Shasta Reservoir increase the burden on other Project facilities to meet Delta salinity and outflow requirements. The changes in this Order will reduce those effects. The Executive Director will also continue to monitor the situation to determine whether DWR and Reclamation should be required to propose adjusted operations to ensure that critical water supplies are available for municipal and industrial use, including to cities served by Folsom Lake, and to provide cooling water needed to maintain grid reliability.

There will be impacts to fish and wildlife from the reduced flows and other changes. However, these effects will be offset to some extent by increasing cold water pool resources throughout the year and supplies for fisheries and other purposes. The increased storage will be realized in a combination of Shasta, Oroville and Folsom reservoirs and south of Delta reservoirs where it will mitigate to some extent the low storage conditions caused by the drought and where it can be used for various purposes later, including water supplies for contractors, salinity control and fisheries purposes.

The changes approved in this Order could result in the following reductions in flows and increases in water supplies and storage:

**Reductions in Flows and Water Supply/Storage Savings
Under the TUCP Order July Through November***

Assumed D-1641 Requirements (cfs)	Jul	Aug	Sep	Oct	Nov
Rio Vista Flows	N/A	N/A	3,000	3,000	3,500
Delta Outflows	4,000	3,000	3,000	3,000	3,500
Salinity Compliance Location	Emmaton	Emmaton	N/A	N/A	N/A
TUCP Requirements (cfs)	Jul	Aug	Sep	Oct	Nov
Rio Vista Flows	N/A	N/A	2,500	2,500	2,500
Delta Outflows	3,000	3,000	3,000	3,000	3,500
Salinity Compliance Location	Threemile Sl.	Threemile Sl.	N/A	N/A	N/A
Theoretical Savings (TAF)	Jul	Aug	Sep	Oct	Nov
Rio Vista Flows	N/A	N/A	29.8	30.7	29.8
Delta Outflows	61.5	0	0	0	0
Salinity Location & Barrier	73.5	64.7	47.1	-2.3	0
Total	135.0	64.7	76.8	28.5	29.8
Total of Theoretical Saving July through November (TAF) =					334.8

*Notes: Assumes the same savings for salinity compliance as last year, though the savings this year will likely be higher than last year if conditions remain dry.

Together, operations to meet unchanged Delta outflow, Sacramento River flow at Rio Vista, and Emmaton salinity could have a variety of effects depending how operations would be prioritized. It could significantly deplete storage, reduce deliveries north of the Delta and reduce opportunities to export water, making those supplies unavailable for the remainder of the season, for water supply contractors, prior water right holders, fisheries protection, control of Delta salinity and refuge supplies. Reductions in supplies to water users upstream of the Delta would reduce the ability of those water users to provide much needed transfers during the drought, which would adversely affect south of Delta export users and potentially refuges. Reductions in surface water supplies would also place additional strain on already significantly depleted groundwater basins. As such, there is an urgent need for these changes.

In summary, in light of the severe magnitude and length of the drought, there is an urgent need for the proposed changes to address or help to minimize the significant impacts to water supplies that have occurred over the last several years, and to help address the associated severe economic impacts in some communities, as well as impacts to fish, wildlife, and beneficial uses, especially given that foregone opportunities to conserve storage for later use cannot be regained.

5.3 No Injury to Any Other Lawful User of Water

The proposed changes will not injure any other lawful user of water. As used in 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 Project reservoirs only are entitled to divert natural and abandoned flows, and in the case of riparians only natural flows; they are not entitled to divert water previously stored or imported by the Projects that is released for use downstream, including stored water that is released for purposes of meeting water quality

objectives. (See *id.* at pp. 738, 743, 771.) Similarly, water right holders only are entitled to the natural flows necessary to provide adequate water quality for their purposes of use; they are not entitled to have water released from upstream storage in order to provide better water quality than would exist under natural conditions, and they are not entitled to better water quality than necessary to allow them to use the water to which they are entitled. (See *Wright v. Best* (1942) 19 Cal.2d 368, 378-379; see also *Deetz v. Carter* (1965) 232 Cal.App.2d 851, 856.) Accordingly, legal users of water will not be injured to the extent that the Projects release less previously stored water as a result of the changes.

To the extent that the Projects divert natural or abandoned flows during the effective period of this Order, other lawful users will not be injured by the proposed changes because the Projects will continue to meet modified Delta outflow and Sacramento River flow and salinity requirements, and adequate flows are expected to remain in the system to meet the demands of other lawful users of water. Moreover, approval of the proposed changes does not affect the Petitioners' obligation to curtail their diversions of natural and abandoned flows to the extent necessary to protect senior water right holders, or to meet any independent contractual obligations that the Petitioners may have. Further, this Order requires that the Petitioners' bypass natural and abandoned flows when they are not meeting the Sacramento River at Emmaton agricultural salinity requirement to prevent injury to other lawful users of water.

The Petitioners also conducted salinity modeling for the changes that indicates that the change in the salinity compliance location from Emmaton to Threemile Slough may result in increases in salinity in various locations in the Delta similar to what occurred last year. However, records of historic salinity measurements indicate that these increases would be less than what would occur without the Projects because the Projects ensure that salinity does not intrude upstream into the Delta by supplementing natural inflow with storage releases in very dry conditions like this year when salinity would otherwise intrude far upstream into the Delta. Based on the information provided, and as conditioned herein, the proposed changes will not injure other users of water due to changes in water quality.

5.4 No Unreasonable effect upon Fish and Wildlife, or Other Instream Beneficial Uses

The USFWS submitted a concurrence letters on June 26, 2015, and NMFS and DFW submitted concurrence letters on July 2, 2015, indicating that the changes proposed in the TUCP are in compliance with ESA and CESA requirements. The concurrence letters also address issues related to, but outside of the scope of this approval, including the Sacramento River temperature management plan, extension of the transfer window and the False River drought barrier. In their concurrence letter, USFWS concurred with Reclamation's determinations that the proposed changes to D-1641 for July through November 2015 are consistent with the range of effects previously analyzed in the 2008 Biological Opinion. USFWS acknowledges the conclusions in the Biological Review that the ongoing drought continues to affect Delta smelt and that there are uncertainties in these conclusions. USFWS states that the continued declining trend in Delta smelt abundance raises concern regarding impacts of drought-related stressors on the population, and that Delta smelt entrainment risk will be subject to reevaluation and adjustment to changing conditions. Furthermore, abundance trends and risk evaluation will be based on a review of Delta smelt distribution and catch data, ongoing Interagency Ecological Program monitoring and fish salvage operations, as well as gauge data. In their concurrence letter, NMFS concurred that operations under the proposed changes requested by the TUCP are within the limits of the Incidental Take Statement of the 2009 Biological Opinion. NMFS finds that the potential effects of the proposed changes under the TUCP were considered under the 2009 Biological Opinion. However, NMFS acknowledges that quantifying the specific effects of any particular action, or the full suite of actions, is difficult as a result of combined uncertainties relating to migration timing of listed species, quantitative relationships, and specific timing, magnitude, and duration of any particular action. Based on the concurrence

determinations by USFWS and NMFS, and based on CDFW's review of the changes and associated Biological Review, CDFW also concurs that the existing CDFW consistency determinations remain in effect and no further CESA authorization from CDFW is necessary.

In addition to the fisheries agencies, the Central Valley Regional Water Quality Control Board (Central Valley Board) submitted an email in accordance with California Code of Regulations Title 23, section 794 requiring water right petitioners to consult with the appropriate Regional Water Quality Control Board regarding potential effects of the proposed changes. The Central Valley Board submitted comments recommending that the Projects participate in the Central Valley Board's Regional Monitoring Program (RMP) to help to better understand trends in water quality and related issues. This Order does not specifically address the longer term efforts of the RMP, but does require various activities to better understand the effects of the changes on water quality and beneficial uses.

In determining whether the impacts of the proposed changes on fish and wildlife are reasonable, the short-term impacts to fish and wildlife must be weighed against the long-term impacts to all beneficial uses of water if the changes are not approved, including impacts to irrigated agriculture, municipal and industrial use, use by wildlife refuges, stored water needed for downstream temperature control and salinity control in the Delta, and other fish and wildlife uses. Further, the effects that have occurred to the species over several years must be considered. Information previously submitted by the fisheries agencies summarized how insufficiencies in the quality and quantity of Delta flows have contributed to the decline of the Delta ecosystem. Several processes to ameliorate the effects of these insufficiencies at the state, federal and local levels include development of Biological Opinions, Recovery Plans, Delta Outflow criteria, comprehensive review and update of the Bay-Delta Plan, and drought contingency planning, as well as many other efforts.

As discussed above, historically low snowpack will result in very low inflows the remainder of the year that typically maintain stream flows over the summer and provide inflows to reservoirs. These dry conditions are expected to adversely affect habitat conditions for various species. While maintaining the D-1641 flow and water quality requirements would provide some short-term benefits to these species, the overriding effects of the drought would persist. Further, meeting those requirements would reduce the storage available in Project reservoirs later in the year for cold-water flows for fish, deliveries to agriculture, municipalities, wildlife refuges and other users, for salinity control and minimal reserves going into the next water year. As discussed above, of particular concern this year is ensuring that adequate water remains in storage in Shasta Reservoir to provide for temperature control on the Sacramento River throughout the temperature control season. Without these changes, it is very likely that Reclamation would not be able to maintain temperature control in accordance with the revised temperature management plan without significantly impacting water supplies for Sacramento River settlement contractors, exporters, and the municipal and agricultural users and fishery resources dependent on other Project reservoirs, including Folsom and Oroville.

As discussed above, increased water supplies available to users upstream of the Delta are also likely to benefit users south of the Delta who engage in transfers, which are expected to occur later this year. Transfer supplies are critically important sources of supply to south of Delta users during dry conditions when there are low to no contract allocations. These transfers help to ensure that permanent crops and other economically important agricultural uses are sustained. Transfers also reduce the reliance on groundwater to some extent. As mentioned previously, groundwater supplies after four years of drought are significantly depleted. Prolonged overdraft of groundwater basins may result in a permanent reduction in the capacity of those storage basins, subsidence, and associated significant infrastructure effects. All of these effects present significant concerns that must be balanced with protections for fish and wildlife.

To ensure that the changes approved in this Order that may reduce flows will not have unreasonable impacts on fish and wildlife, this Order includes several provisions including:

1. To address the significant concerns with temperature management for winter-run and other Sacramento River salmonids this year, this Order requires Reclamation to operate in compliance with a revised Temperature Management Plan approved by the Executive Director and to update that plan as necessary. This Order also requires Reclamation to conduct additional consultation, modeling, monitoring, reporting and planning to improve temperature management on the Sacramento River.
2. To address the concerns described above with operations of New Melones, this Order requires Reclamation to perform additional consultation and temperature modeling to update its plan required by the April 6 TUCP Order to protect fish and wildlife from elevated temperatures and related impacts due to low storage conditions. The Order requires Reclamation to implement the approved plan and any changes directed by the Executive Director necessary to reasonably protect fish and wildlife. To improve planning in the future, the Order also requires Reclamation to submit a report that evaluates and documents the effectiveness of this year's Stanislaus River operations in protecting fishery resources.
3. This Order requires DWR and Reclamation to conduct necessary modeling and monitoring and to prepare other necessary technical information to inform operational decisions. Specifically, this Order requires DWR and Reclamation to conduct necessary monitoring to understand the effects of operations associated with the temporary drought barrier at False River, including reductions in Delta outflows. This information along with fisheries information provided by the fisheries agencies will enable the Executive Director and the Board to monitor the effects of this Order and make changes as necessary to avoid any unreasonable impacts to fish and wildlife or other instream beneficial uses.
4. This Order further requires Reclamation to consult with and provide information to CVP refuge contractors to improve planning for refuge supplies.

In summary, the changes that may result in reductions in flows approved in this Order balance the various uses of stored water into the summer and fall by improving water supplies for water allocations, wildlife refuges, and salinity control, and at the same time meeting temperature control requirements. Additionally, the reductions to Delta outflows, Rio Vista flows, and change in Western Delta salinity requirements will allow the Projects to conserve upstream storage for use later in the year for fish and wildlife and other uses. Based on the above, the potential for impairment to fish, wildlife, or other instream beneficial uses from the approved temporary changes is not unreasonable considering the water supply benefits of the changes, and the impacts to agricultural, municipal and wildlife refuge supplies and fish and wildlife that could occur if the temporary changes are not approved.

5.5 The Proposed Change is in the Public Interest

The temporary modifications authorized in this Order will make the best use of limited water supplies and are accordingly in the public interest. As discussed above, hydrologic and water supply conditions in the Bay-Delta watershed continue to be highly impacted by the drought and are inadequate to meet all of the demands for water in the basin this year and heading into next year if conditions continue to be dry. To respond to these conditions, the changes in the Order are warranted to reduce to some extent the significant fisheries and water supply related impacts expected if conditions remain dry. The changes approved in this Order will help conserve stored water so that it can be released for multiple purposes the rest of this year, including municipal and agricultural supply, wildlife refuge supplies, temperature control on the Sacramento River and salinity control in the Delta. The changes approved in this

Order will also allow for exports for critical purposes. The changes approved in this Order balance the various uses of water now and in the future while preserving water right priorities and protecting the public interest. This Order also requires planning, modeling, consulting, monitoring and reporting and reserves authority to modify the Order to ensure that it remains in the public interest.

6.0 CONCLUSIONS

The State Water Board has adequate information in its files to make the evaluation required by Water Code section 1435 concerning the modification and renewal of the TUCP Order discussed above.

I conclude that, based on the available evidence:

1. The Petitioners have an urgent need to make the proposed changes;
2. The petitioned changes; as conditioned by this Order, will not operate to the injury of any other lawful user of water;
3. The petitioned changes, as conditioned by this Order, will not have an unreasonable effect upon fish, wildlife, or other instream beneficial uses; and
4. The petitioned 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 permit and license conditions under Permits 16478, 16479, 16481, 16482 and 16483 (Applications 5630, 14443, 14445A, 17512 and 17514A, respectively) of the Department of Water Resources (DWR) for the State Water Project (SWP) and License 1986 and Permits 11315, 11316, 11885, 11886, 11887, 11967, 11968, 11969, 11970, 11971, 11972, 11973, 12364, 12721, 12722, 12723, 12725, 12726, 12727, 12860, 15735, 16597, 20245, and 16600 (Applications 23, 234, 1465, 5638, 13370, 13371, 5628, 15374, 15375, 15376, 16767, 16768, 17374, 17376, 5626, 9363, 9364, 9366, 9367, 9368, 15764, 22316, 14858A, 14858B, and 19304, respectively) of the United States Bureau of Reclamation (Reclamation) for the Central Valley Project (CVP); is approved in part, subject to the following terms and conditions. Except as otherwise provided below, all other terms and conditions of the subject license and permits, including those added by the State Water Resources Control Board (State Water Board) in Revised Decision 1641 (Decision 1641) shall remain in effect. This Order shall be effective until December 30, 2015.

1. Except as otherwise provided in condition 2, below, during the time periods specified below, or until such time as this Order is amended or rescinded, the requirements of Decision 1641 for DWR and Reclamation to meet specified water quality objectives are amended as follows:
 - a. During July, the minimum Delta outflow level specified in Table 3 of Decision 1641 as measured by the Net Delta Outflow Index (NDOI) described in Figure 3 of Decision 1641 shall be no less than 3,000 cubic-feet per second (cfs) on a monthly average. The 7-day running average shall be no less than 1,000 cfs below the monthly average.
 - b. During September, October and November the minimum Sacramento River at Rio Vista flow rate specified in Table 3 of Decision 1641 shall be no less than 2,500 cfs on a monthly average. The 7-day running average shall be no less than 2,000 cfs.
 - c. Through August 15, 2015, the Western Delta, Sacramento River at Emmaton electrical conductivity (EC) compliance location specified in Table 2 of Decision 1641 is moved to Threemile Slough on the Sacramento River.
 - d. Through November 30, 2015, the maximum Export Limits specified in Table 3 of Decision 1641 are modified as follows:
 - i. When Decision 1641 Delta outflow, Rio Vista flow, and Emmaton EC requirements in Tables 2 and 3 of Decision 1641 are not being met, the combined maximum exports at the SWP Banks Pumping Plant and the CVP Jones Pumping Plant shall be no greater than 1,500 cfs.
 - ii. During the effective period of this Order, if precipitation events occur that enable DWR and Reclamation to fully comply with the above referenced requirements, then Decision 1641 requirements shall be operative, except that any SWP and CVP exports greater than 1,500 cfs shall be limited to natural or abandoned flow, or transfers as specified in condition 1.d.iii.
 - iii. These export limitations do not apply to water transfers. Based on additional information or changed circumstances, the export limits

imposed pursuant to this Order may be modified through the consultation process described in condition 2, below.

2. DWR and Reclamation shall consult on a regular basis with designated representatives from the State Water Board, the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service, and the Department of Fish and Wildlife (DFW) (collectively fisheries agencies) concerning current conditions and potential changes to SWP and CVP operations to meet health and safety requirements and to reasonably protect all beneficial uses of water. The Executive Director will designate a representative who will be authorized to make real-time operational decisions, including how often DWR and Reclamation need to consult with representatives of the State Water Board and fisheries agencies. If the State Water Board approves any additional temporary urgency changes pursuant to the temporary urgency change petition that is the subject of this Order, or otherwise modifies this Order, the State Water Board will provide notice and an opportunity for interested persons to comment or object. Based on public comments or objections, further changes may be made to this Order. Information concerning changes to this Order will be posted on the State Water Board's website within 24 hours.
3. DWR and Reclamation shall calculate and maintain a record of the amount of water conserved in storage or exported through the changes authorized by this Order, as well as a record of where that water was conserved, and shall submit such records on a monthly basis to the State Water Board and fisheries agencies within 20 working days after the first day of the following month. The water conserved as a result of this approval shall be used in accordance with the Petitioners' current CVP and SWP operations plan associated with the June 25, 2015 revised Temperature Management Plan for the Sacramento River with any updates that are agreed to through the consultation process described in condition 2 above.
4. DWR and Reclamation shall develop monthly water balance estimates indicating actual and proposed operations through the end of the water year, including:
 - a. Upstream: Inflows to and storage levels in the major reservoirs (Shasta, Folsom, Oroville, Trinity, Whiskeytown, New Melones). River releases from the aforementioned reservoirs. Flows in the San Joaquin River above the junction with the Stanislaus River. Transfers from the Trinity system, including Carr Power Plant and Spring Creek Tunnel flows.
 - b. Delta: inflows, channel depletions, exports, and outflows;
 - c. SWP: deliveries to Feather River Service Area contractors, north of Delta Table A contractors, South of Delta Table A contractors;
 - d. CVP: deliveries to Settlement contractors, American River municipal and industrial (M&I) contractors, Sacramento River agricultural water service contractors, Sacramento River M&I water service contractors, Contra Costa Water District, north of Delta refuges, exchange contractors, south of Delta agricultural water service contractors, south of Delta M&I water service contractors, south of Delta refuges, East side water right holders, New Melones East side, and Friant Unit;

- e. South of Delta water transfers, including the transferors, transferees and the quantities transferred; and
- f. Any Coordinated Operations Agreement imbalances.

The water balance shall be posted on DWR's website and updated as necessary based on changed conditions. Monthly updates shall be posted and provided to the State Water Board and fisheries agencies within 20 working days after the first day of the following month.

5. DWR and Reclamation shall conduct necessary modeling and monitoring and prepare other necessary technical information to inform operational decisions. Specifically, DWR and Reclamation shall conduct necessary monitoring to understand the effects of operations associated with the temporary drought barrier at False River, including reductions in Delta outflows. DWR and Reclamation shall consult with the fisheries agencies and State Water Board staff through the consultation process described in Condition 2 above to identify needed modeling and monitoring. Required modeling and monitoring shall be determined by the Executive Director or his representative, taking into consideration input from the relevant agencies, including DWR, Reclamation, and the fishery agencies. DWR and Reclamation shall timely make available technical information to inform these operational decisions, including planned operations, temperature models, modeling and monitoring information, water quality modeling and monitoring information, information about potential impacts of operational changes on other water users and fish and wildlife, and any other relevant information requested by the fisheries agencies or State Water Board staff. DWR and Reclamation shall report to the Board monthly at its Board meetings on their drought operations and the information discussed above.
6. Pursuant to the requirements of this Order and State Water Board Order WR 90-5, Reclamation, in consultation with the fisheries agencies, shall take the following actions:
 - a. Reclamation shall implement the Sacramento River Temperature Management Plan with any changes required by the Executive Director. Key elements of the Plan from the Shasta Temperature Management Plan-Key Concepts include:
 - i. Base Keswick releases of 7,250 cfs in June and July.
 - ii. Base Keswick releases of 7,250 cfs in August, 6,500 cfs in September, and 5,000 cfs in October, subject to change in accordance with the real-time monitoring and decision making process described below based on the performance of the plan in June and July.
 - iii. Actual operations will be decided using a real-time monitoring and decision making process that includes representatives from the relevant federal and State agencies. This decision making process may yield adjustments to base operations depending on real-time conditions on the ground.
 - iv. Reclamation will convene the real-time monitoring and decision making group at least weekly, and more frequently if necessary to inform decisions about temperature operations.

- v. Decisions regarding real-time adjustment to base operations will be made using the principles identified in the Shasta Temperature Management Plan-Key Components.

- b. Reclamation shall immediately update the Sacramento River Temperature Management Plan as conditions change or upon the request of the fisheries agencies or Executive Director or his designee. The plan shall provide reasonable protection for winter-run Chinook salmon during the 2015 spawning and rearing period and consider other fisheries needs, including spring-and fall-run Chinook salmon. Reclamation shall conduct all necessary modeling, monitoring and reporting to inform temperature operations. Specifically, Reclamation shall submit to the fisheries agencies and State Water Board staff:
 - i. Updated reservoir temperature profile measurements no less than weekly for Shasta and every two weeks for Trinity and Whiskeytown reservoirs in digital format, unless otherwise approved;
 - ii. Immediately upon any change in conditions or upon the request of the fisheries agencies or State Water Board staff, updated annotated temperature modeling including the following information:
 - 1. Identification of the model run date;
 - 2. Input and output files;
 - 3. Keswick flow release level (if static), or time series, as appropriate;
 - 4. The meteorological assumptions used for the run;
 - 5. Titles or notes that explain the temperature target of the run, and at what location; and
 - 6. Other notes that describe if the run was done to target a specific temperature based on the other run assumptions or if the meteorological conditions were simply imposed on another run.
 - iii. With the exception of weekends and holidays, daily updates of average daily river temperature conditions, including the Shasta temperature control device weighted average, Spring Creek Power House weighted average, and Sacramento River miles 302, 298 and 293 temperatures; 10-day forecasted Redding high and low air temperatures; and
 - iv. Actual and forecasted CVP and SWP monthly operations immediately upon any significant change in conditions, including input assumptions for major system inflows and outflows, including accretion and depletion assumptions.

- c. For the remainder of the drought, Reclamation shall meet no less than weekly with the Sacramento River Temperature Task Group (SRTTG) to discuss operations and options for reducing or avoiding redd dewatering, stranding and temperature impacts to winter-run Chinook salmon. Reclamation shall immediately notify the SRTTG of any significant changes to environmental or operational conditions that may affect temperatures and shall convene a meeting with the SRTTG to discuss unless the SRTTG members indicate a meeting is not needed. Reclamation shall provide notes from the meetings to the SRTTG within 5 days following the meeting for review and approval and shall post the approved notes and handouts from the meetings on its website immediately upon approval.

Reclamation shall confer on recommendations from the SRTTG during the consultation process and other applicable CVP and SWP operational decision-making meetings. Reclamation shall immediately make available technical information requested by the Executive Director or his designee through the consultation process. Reclamation shall report monthly to the State Water Board during its Board meeting on actions that have been or will be taken to reduce impacts to winter-run Chinook salmon, through the remainder of the drought.

- d. Reclamation shall meet with State Water Board and fisheries agency staff before August 7, 2015, to develop a plan for providing information and tools needed to independently run the Sacramento River Temperature model.
 - e. In consultation with the fisheries agencies and State Water Board staff, perform a review and evaluation of the water year 2015 temperature control season to evaluate the effectiveness of temperature control operations this year, as well as necessary actions to improve temperature control operations in the future, beginning in the next water year. Reclamation shall perform any necessary analyses to identify the source of any significant discrepancies between projected and observed temperatures. All analyses associated with this evaluation shall be submitted with the evaluation. The evaluation shall be submitted to the State Water Board and SRTTG by January 15, 2016.
7. In consultation with the fisheries agencies, Oakdale and South San Joaquin Irrigation Districts and State Water Board staff, Reclamation shall revise its May 15, 2015 plan to reasonably protect fish and wildlife on the Stanislaus River using current hydrologic and storage information and revised temperature modeling. The assumptions for the temperature modeling shall be developed in consultation with the organizations identified above and shall be prepared as soon as practical. The plan shall identify how operations on the Stanislaus River will be managed this summer and fall to minimize impacts to fish and wildlife, including optimizing use of the low level outlet on New Melones Reservoir for temperature control and other operational measures. The plan shall be submitted to the Executive Director for approval and to the fisheries agencies by July 10, 2015, and shall be updated as necessary based on changed circumstances. Reclamation shall implement the approved plan and any changes directed by the Executive Director necessary to reasonably protect fish and wildlife.
 8. In consultation with the fisheries agencies, Reclamation shall prepare and submit to the State Water Board a report that evaluates and documents the effectiveness of this year's Stanislaus River operations in protecting fishery resources. Specifically, that report shall evaluate the effectiveness of New Melones blending operations between the upper and lower outlets and any other measures taken to improve temperatures, any concerns with operating the lower outlet, actual temperature conditions in the river downstream of Goodwin Dam, and observed fisheries conditions resulting from the operations. The report shall be submitted to the Executive Director and fisheries agencies by January 15, 2016.
 9. Upon request of the Executive Director, Reclamation and DWR will propose adjusted operations to ensure that critical water supplies are available for municipal and industrial use, including to cities served by Folsom Lake, and to provide cooling water needed to maintain grid reliability.

10. Reclamation shall promptly consult with CVP refuge contractors regarding forecasted operations and shall provide all requested information concerning forecasting, operational assumptions, and the proposed timing and quantity of refuge water deliveries. Reclamation shall maintain regular consultation with refuge contractors in the fall and winter months to share information regarding current hydrological and biological conditions, and shall work with refuge contractors to adaptively manage the delivery of refuge water supplies as needed.
11. While DWR and Reclamation are operating under the changes approved by condition 1.c. of this Order, they shall bypass natural and abandoned flows to prevent injury to other lawful users of water.
12. This Order may be further modified by the Executive Director or the State Water Board based on additional public input or changed circumstances.
13. 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, the Petitioners shall obtain authorization for an incidental take permit prior to construction or operation of the project. Petitioners shall be responsible for meeting all requirements of the applicable Endangered Species Act for the temporary urgency changes authorized under this Order.
14. Petitioners shall immediately notify the Executive Director of the State Water Board if any significant change in conditions occurs that warrants reconsideration of this Order.

STATE WATER RESOURCES CONTROL BOARD

ORIGINAL SIGNED BY

Thomas Howard
Executive Director
Dated: July 3, 2015

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.	W		No. of days each Calendar Year \geq 150 mg/l Cl ⁻
-or-						
San Joaquin River at Antioch Water Works Intake	D-12 (near) (RSAN007)		Must be provided in intervals of not less than two weeks duration. (Percentage of Calendar Year shown in parenthesis)	AN		240 (66%)
				BN		190 (52%)
				D		175 (48%)
				C		165 (45%)
						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	EC from date shown to Aug 15 [4]		
					April 1 to date shown	Aug 15		
					W	----		
					AN	0.63		
					BN	1.14		
San Joaquin River at Jersey Point	D-15I (RSAN018)	Electrical Conductivity (EC)	Maximum 14-day running average of mean daily EC (mmhos/cm)		0.45 EC	EC from date shown to Aug 15 [4]		
					April 1 to date shown	Aug 15		
					W	----		
					AN	0.74		
					BN	1.35		
D	Jun 15	1.67	2.78	C	----			

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	EC from date shown to Aug 15 [4]		
					April 1 to date shown	Aug 15		
					W	----		
					AN	0.54		
					BN	0.54		
D	Aug 15	0.54	0.54	C	----			

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	EC from date shown to Aug 15 [4]		
					April 1 to date shown	Aug 15		
					W	----		
					AN	0.58		
					BN	0.87		
D	Jun 25	0.58	0.87	C	----			

SOUTHERN DELTA								
San Joaquin River at Airport Way Bridge, Vernalis	C-10 (RSAN112)	Electrical Conductivity (EC)	Maximum 30-day running average of mean daily EC (mmhos/cm)	All	Apr-Aug	0.7		
					Sep-Mar	1.0		
					-and-			
					San Joaquin River at Brandt Bridge site[5]	C-6 (RSAN073)		
					-and-			
Old River near Middle River [5]	C-8 (ROLD69)							
-and-								
Old River at Tracy Road Bridge [5]	P-12 (ROLD69)							
EXPORT AREA								
West Canal at mouth of Clifton Court Forebay	C-9 (CHWST0)	Electrical Conductivity (EC)	Maximum monthly average of mean daily EC (mmhos/cm)	All	Oct-Sep	1.0		
						-and-		
Delta-Mendota Canal at Tracy Pumping Plant	DMC-1 (CHDMC004)							

[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	C-2 (RSAC081)	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	19.0
-and- Montezuma Slough at National Steel	S-64 (SLMZU25)				Nov-Dec	15.5
-and- Montezuma Slough near Beldon Landing	S-49 (SLMZU11)				Jan	12.5
					Feb-Mar	8.0
					Apr-May	11.0
WESTERN SUISUN MARSH SALINITY						
Chadbourne Slough at Sunrise Duck Club	S-21 (SLCBN1)	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	19.0
-and- Suisun Slough, 300 feet south of Volanti Slough	S-42 (SLSUS12)				Nov	16.5
					Dec	15.5
					Jan	12.5
					Feb-Mar	8.0
					Apr-May	11.0
				Deficiency Period [6]	Oct	19.0
					Nov	16.5
					Dec-Mar	15.6
					Apr	14.0
					May	12.5

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

COMPLIANCE LOCATION	INTERAGENCY STATION NUMBER(RK14[1])	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	Nov-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 and May 16-Jun	2,130 or 3,420 1,420 or 2,280 710 or 1,140
				BN,D		
				C		
				W	Apr 15- May 15 [14]	7,330 or 8,620 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 Feb-May 20 May 21- Jun 15	[22] ---- [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:

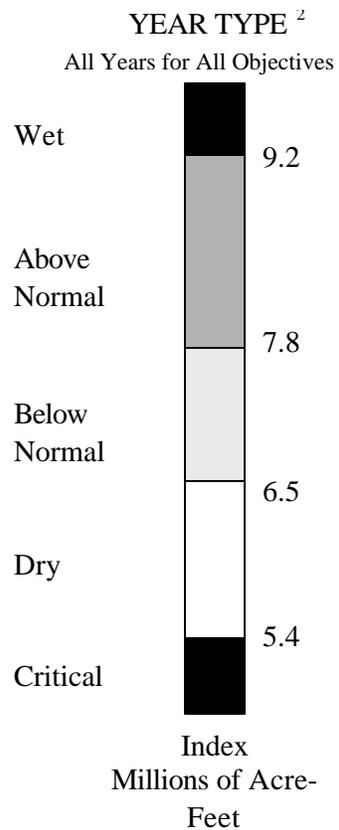
$$\text{INDEX} = 0.4 * X + 0.3 * Y + 0.3 * Z$$

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

Y = Current October – March
Sacramento Valley unimpaired runoff

Z = Previous year's index¹

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.



<u>Classification</u>	<u>Index Millions of Acre-Feet (MAF)</u>
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:

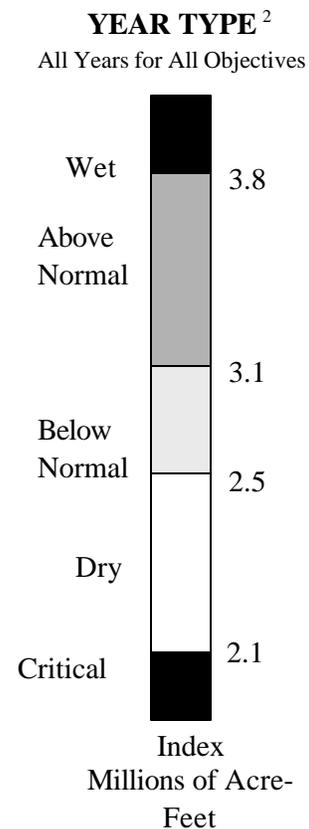
$$\text{INDEX} = 0.6 * X + 0.2 * Y + 0.2 * Z$$

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 index¹

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.



<u>Classification</u>	<u>Index Millions of Acre-Feet (MAF)</u>
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

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 DIVERTED¹

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):

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

$$PERCENT\ INFLOW\ DIVERTED = (CCF + TPP) \div DELTA\ INFLOW$$

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.

-
- 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)	Chippis Island (Chippis 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 Chippis 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 Chippis 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.

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

ORDER WR 2014-0029

**In the Matter of Specified License and Permits¹ of the
Department of Water Resources and U.S. Bureau of Reclamation
for the State Water Project and Central Valley Project**
regarding the Executive Director's January 31, 2014 Order and
Subsequent Modifications to That Order

**ORDER DENYING PETITIONS FOR RECONSIDERATION
AND ADDRESSING OBJECTIONS**

BY THE BOARD:

1.0 INTRODUCTION

By this Order, the State Water Resources Control Board (State Water Board or Board) denies petitions for reconsideration of the Executive Director's January 31, 2014 Order Approving a Temporary Urgency Change Petition (TUCP Order), and subsequent modifications thereto. While this Order denies the petitions for reconsideration, this Order does make some modifications to the TUCP Order in response to issues raised by some of the petitioners and other commenters. The following parties filed petitions for reconsideration: (1) San Luis & Delta-Mendota Water Authority (SLDMWA et. al.) and its member agencies; (2) San Joaquin River Exchange Contractors Water Authority, Central California Irrigation District, San Luis Canal Company, Columbia Canal Company and Firebaugh Canal Water District (Exchange Contractors et. al.); (3) Western Canal Water District, Plumas Mutual Water Company, and the Joint Water Districts Board (WCWD et. al.); (4) Friant Water Authority and its members (Friant); the (5) Natural Resources Defense Council (NRDC) and The Bay Institute (TBI); and (6) California Sportfishing Protection Alliance (CSPA), AquAlliance, and California Water Impact

¹ The petition was filed for Permits 16478, 16479, 16481, 16482 and 16483 (Applications 5630, 14443, 14445A, 17512 and 17514A, respectively) of the Department of Water Resources for the State Water Project and License 1986 and Permits 11315, 11316, 11885, 11886, 11887, 11967, 11968, 11969, 11970, 11971, 11972, 11973, 12364, 12721, 12722, 12723, 12725, 12726, 12727, 12860, 15735, 16597, 20245, and 16600 (Applications 23, 234, 1465, 5638, 13370, 13371, 5628, 15374, 15375, 15376, 16767, 16768, 17374, 17376, 5626, 9363, 9364, 9366, 9367, 9368, 15764, 22316, 14858A, 14858B, and 19304, respectively) of the United States Bureau of Reclamation for the Central Valley Project.

Network (CWIN). This Order also addresses numerous objections to the TUCP Order and subsequent modifications thereto.

On January 31, 2014, the Executive Director conditionally approved a temporary urgency change petition to modify the conditions of the water right permits for the Department of Water Resources' (DWR) State Water Project (SWP) and the water right license and permits for the United States Bureau of Reclamation's (Reclamation) Central Valley Project (CVP) (collectively the CVP and SWP are also referred to as the Projects in this Order). The approval temporarily modified Delta flow and water quality requirements to address critically dry conditions associated with California's ongoing drought. The Executive Director's conditional approval indicated that further modifications to the TUCP Order may be made based on public input or changed circumstances. As the result of changed circumstances and subsequent requests from DWR and Reclamation, the Executive Director modified the TUCP Order on February 7, 2014, February 28, 2014, March 18, 2014, April 9, 2014, April 11, 2014, April 18, 2014, and May 2, 2014, to extend and change the conditions of the TUCP Order. In the May 2, 2014 TUCP Order, the Executive Director renewed the TUCP Order, which now expires on January 27, 2015. Although a formal response to objections to the TUCP Order has not been provided until now, the Executive Director reviewed and considered incoming objections and petitions on a continual basis, and in some instances modified the TUCP Order in response the issues raised in the objections and petitions.

2.0 FACTUAL AND LEGAL BACKGROUND

2.1 State Water Board Revised Decision 1641

In Revised Decision 1641 ([Decision 1641](#)), the State Water Board amended the water right license and permits for the SWP and CVP to require the Projects to meet specified water quality objectives set forth in the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan). The flow and water quality requirements established by the State Water Board in Decision 1641 are summarized in the tables and figures contained in Attachment 1 to this Order: Table 1 (Municipal and Industrial Beneficial Uses), Table 2 (Water Quality Objectives for Agricultural Beneficial Uses), and Table 3 (Water Quality Objectives for Fish and Wildlife Beneficial Uses). Included in Attachment 1 are the footnotes to Table 3 and Figure 1 (Sacramento Valley Water Year Hydrologic Classification), Figure 2 (San Joaquin Valley Water Year Hydrologic Classification), Figure 3 (Formulas for Net

Delta outflow Index and Percent Inflow Diverted), and Table 4 (Chippis Island and Port Chicago Maximum Daily Average Electrical Conductivity).

2.2 Governor's Drought Proclamations

California is currently in the third year of a drought. Water year 2012 was categorized as below normal, calendar year 2013 was the driest year in recorded history for many parts of California, and water year 2014 began on a similar dry trend. Based on these dry conditions, in May 2013, Governor Edmund G. Brown, Jr. issued Executive Order B-21-13, which directed the State Water Board and DWR, among other things, to take immediate action to address dry conditions and water delivery limitations. In December 2013, the Governor also formed a Drought Task Force to review expected water allocations and the state's preparedness for a drought.

At the time that the TUCP was first approved in late January 2014, the State was experiencing historically dry conditions. California generally receives half of its annual precipitation by mid- to late January which made these conditions even more significant from a water supply perspective. As of the end of January 2014, the Northern Sierra 8-station precipitation accumulation was 4.5 inches; which was 9 percent of the annual average and 17 percent of the average to date. Statewide snow water content was at 9 percent of the April 1 average and 15 percent of the average to date, when measured by DWR's snow survey on January 30, 2014. At the end of January 2014, Lake Oroville, the SWP's principal reservoir, was at 36 percent of its 3.5 million acre-foot capacity (54 percent of its historical average for January). Shasta Lake, California's and the CVP's largest reservoir, was at 36 percent of its 4.5 million acre-foot capacity (54 percent of its historical average). San Luis Reservoir, a critical south-of-Delta reservoir for both the SWP and CVP, was at 30 percent of its 2 million acre-foot capacity (38 percent of average for January). Folsom Lake, another CVP reservoir, was at 17 percent of its 1 million acre-feet capacity (32 percent of average for January), and New Melones Reservoir was at 43 percent of its 2.4 million acre-feet capacity (73 percent of average for January). At the same time, the three-month outlook weather forecast from the National Oceanic and Atmospheric Administration predicted below normal precipitation for California through the forecast horizon. The dry conditions and projections for continued dry conditions raised significant concerns about water supplies for the remainder of the season.

Governor Brown issued a Drought Emergency Proclamation on January 17, 2014, based on the dry conditions as of that date. The Proclamation directed the State Water Board, among other

things, to consider petitions, such as the TUCP, to modify requirements for reservoir releases or diversion limitations that were established to implement a water quality control plan. 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.

Ordinarily, the State Water Board must comply with any applicable requirements of the California Environmental Quality Act (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 Proclamation concluded, however, that strict compliance with CEQA would "prevent, hinder, or delay the mitigation of the effects of the emergency." Accordingly, as authorized by Government Code section 8571, ordering paragraph 9 of the Governor's Proclamation suspended CEQA, and the regulations adopted pursuant to it, to the extent that CEQA otherwise would have applied to specified actions necessary to mitigate the effects of the drought, including the State Water Board's action on the TUCP.

The Governor's Proclamation also suspended Water Code section 13247 to the extent that it otherwise would have applied to specified activities, including action on the TUCP. Section 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 petition to modify water right permits and licenses in a way that does not provide for full attainment of the water quality objectives as specified in the Bay-Delta Plan, even during a drought emergency.

From February through April 2014, a series of precipitation events occurred that improved the hydrology and water supply conditions, however, conditions remained much drier than average. Based on the April 1 forecast, the Sacramento and San Joaquin Valley Water Year Types were still classified as critically dry. Preliminary estimates of the May 1 snowpack also remained low at 11 percent of the April 1 average for the entire state. Rainfall and snow water content for the Northern Sierra was 60 percent of average to date for the water year. At the same time, storage conditions in key reservoirs also remained below average--Lake Oroville was at 53 percent of its capacity (65 percent of its historical average for the date), Shasta Lake also was at 53 percent of its capacity (61percent of its historical average), San Luis Reservoir was at 47 percent of its capacity (53 percent of average for April), Folsom Lake was at

56 percent of its capacity (75 percent of average for April), and New Melones Reservoir was at 38 percent of its capacity (63 percent of average for April).

On April 25, 2014, Governor Brown issued a Proclamation of a Continued State of Emergency related to the drought. The Proclamation found that California's water supplies continued to be severely depleted despite a limited amount of rain and snowfall since January, with very limited snowpack in the Sierra Nevada, decreased water levels in California's reservoirs, and reduced flows in the state's rivers. The Proclamation ordered that the provisions of the January 17, 2014 Proclamation remain in full force and also added several new provisions. Among other things, the Proclamation directed: the State Water Board and DWR to expedite requests to move water to areas of need (including water transfers); called on Californians to refrain from wasting water; required the Department of Fish and Wildlife (DFW) to conduct monitoring and work with agencies and landowners to implement actions to minimize impacts to Endangered Species Act (ESA) listed fish; directed various state agencies to take actions to address water supply and drinking water shortages; and directed the State Water Board to adopt and implement emergency regulations as appropriate to promote water recycling and curtail diversions when water is not available.

2.3 Temporary Urgency Change Petition

In response to the unprecedented critically dry conditions, on January 29, 2014, DWR and Reclamation submitted a TUCP that requested temporary modification of certain Decision 1641 requirements in order to conserve stored water in upstream reservoirs for critical uses later in the year. Specifically, the TUCP requested modifications to the requirement to meet objectives for the protection of fish and wildlife, including the Delta outflow objective during February and the Delta Cross Channel (DCC) Gate Closure objective from February through May 20. To reduce the effects of the changes on fish and wildlife and conserve stored water, the TUCP also proposed more stringent limits on exports at the SWP and CVP pumping facilities in the south Delta. The TUCP also proposed a process to determine other changes to best balance protection of all beneficial uses.

2.4 Executive Director's January 31, 2014 Order and Subsequent Modifications to That Order

2.4.1 January 31 Order

The Executive Director's January 31, 2014 TUCP Order allowed DWR and Reclamation to meet a lower Delta outflow level of 3,000 cubic feet per-second (cfs) in February and allowed the DCC Gates to be operated flexibly from February 1 through May 20.² As proposed by DWR and Reclamation, the TUCP Order restricted exports from the Delta at the SWP and CVP pumping facilities to health and safety needs of no more than 1,500 cubic-feet per second (cfs), with the exception of transfers. The TUCP Order also required that DWR and Reclamation consult with the State Water Board, DFW, National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) (collectively the fisheries agencies) through a Real-Time Drought Operations Management Team (RTDOMT) to discuss real time operational issues. The TUCP Order further required DWR and Reclamation to calculate and maintain a record of the amount of water conserved by the changes and keep that water in storage for use later in the year for purposes of maintaining water supplies, improving water quality, or protecting flows for fisheries. The TUCP Order required DWR and Reclamation to develop a water balance and to conduct necessary modeling and monitoring to inform real time operational decisions. The TUCP Order stated that it may be modified based on additional public input or changed circumstances.

2.4.2 February 7 Modification

The February 7, 2014 modification to the TUCP Order clarified requirements related to exports that would apply when DWR and Reclamation were meeting Decision 1641 requirements. The February 7 modification of the TUCP Order adjusted the temporary export limitations when precipitation events occurred that enabled DWR and Reclamation to comply with the Delta outflow and DCC Gate closure requirements contained in Decision 1641. In these circumstances, exports greater than 1,500 cfs were allowed up to the export limits contained in Decision 1641, except that any SWP and CVP exports greater than 1,500 cfs were required to be limited to natural or abandoned flows, or transfers. The TUCP Order did not require DWR and Reclamation to meet the Decision 1641 Delta outflow requirements unless exports, other than transfers, were greater than 1,500 cfs. All other provisions of the January 31, 2014 TUCP Order were continued.

² The required Delta outflow pursuant to Decision 1641 without the temporary change in February was 7,100 cubic-feet per second. In addition, without the temporary change, Decision 1641 requires that the DCC Gates to be closed from February through May 20 of each year.

2.4.3 February 28 Modification

The February 28, 2014 modification to the TUCP Order continued the modified Delta outflow levels of 3,000 cfs originally approved on January 31, 2014, through the month of March. All other provisions of the TUCP Order continued to be in effect.

2.4.4 March 18 Modification

The March 18, 2014 modification of the TUCP Order provided additional flexibility to export water while Delta inflows were elevated following precipitation events by adding an alternate set of compliance requirements for the end of March that would be in effect while higher Delta inflows persisted. Specifically, when precipitation and runoff events occurred that allowed the DCC Gates to be closed and compliance with the flow or salinity requirements included in footnote 10 of Table 3 in Decision 1641, but the additional Delta outflow requirements contained in Table 4 of Decision 1641 were not being met, the Order permitted exports of natural and abandoned flows up to the Export Limits contained in Table 3 of Decision 1641. The Order also modified the health and safety restriction on exported water to allow the use of exported water for other SWP and CVP purposes, provided that health and safety needs and other critical water needs were first met. All other provisions of the TUCP Order continued to be in effect.

2.4.5 Drought Operations Plan

To plan for future operations during the drought, DWR and Reclamation developed a comprehensive Drought Operations Plan (DOP), which was released on April 8, 2014. The stated intent of the DOP was to provide flows for human health and safety needs, control saltwater intrusion in the Delta, preserve cold water pools in upstream reservoirs, and provide minimum protections for fish and wildlife. The DOP was developed in coordination with the RTDOMT and described DWR's and Reclamation's proposed range of coordinated operations from April through mid-November, including flows and storage levels in Project reservoirs. Specifically, the DOP included proposed operations assuming an average and a very dry hydrology and included an analysis of the effects of those operations on biological resources. Under the drier hydrology, the DOP proposed operations with and without temporary rock barriers in the Delta to reduce the need for upstream releases to repel salinity. DWR later determined that the barriers would not be needed this year. The DOP also identified proposed changes to the TUCP Order and various ESA requirements. Following release of the DOP, the fisheries agencies confirmed that the DOP conformed with ESA requirements. On April 9, 2014, DWR and Reclamation requested changes to the TUCP Order in accordance with the DOP.

2.4.6 April 9 Modification

The April 9, 2014 modification of the TUCP Order extended the Delta outflow and Export modifications of the March 18 TUCP Order into April. All other provisions of the TUCP Order continued to be in effect. The April 9 TUCP Order stated that a comprehensive update to the TUCP Order would be issued in the near future to address other changes included in the DOP that had not yet been acted on by the Executive Director.

2.4.7 April 11 Modification

The April 11 modification of the TUCP Order allowed Reclamation to meet modified San Joaquin River flow requirements from April 11 through June as proposed in the DOP. Specifically, from April 11 until the start of the 31-day pulse flow period beginning in mid-April, minimum San Joaquin River flows at Vernalis were required to be no less than 700 cfs on a 3-day average. During the pulse flow period from mid-April through mid-May, the Order required that minimum flows be no less than 3,300 cfs for 16 days and 1,500 cfs for the remaining 31-day pulse flow period, or any pulse or pulses with an equivalent flow volume that was approved by the fisheries agencies. From the end of the pulse flow period through May, flows were required to be no less than 500 cfs. For June, Reclamation was required to operate to achieve the applicable NMFS Biological Opinion flows, dissolved oxygen requirements on the Stanislaus River at Ripon and Decision 1641 salinity requirements at Vernalis on the San Joaquin River. All other provisions of the TUCP Order continued to be in effect.

2.4.8 April 18 Modification

The April 18 modification allowed DWR and Reclamation to export additional supplies while inflows to the Delta were increased during the April and May San Joaquin River pulse flow period. Specifically, the modifications to the TUCP Order allowed for exports of 100 percent of the 3-day average of San Joaquin River flows at Vernalis or 1,500 cfs, whichever is greater, during the pulse flow period. These export limits were not constrained by meeting Decision 1641 Delta outflow conditions, including Footnote 10 of Table 3 in Decision 1641.

2.4.9 May 2 Modification

The May 2 modification acted on the remaining applicable changes proposed in the DOP. The modification of the Delta outflow requirement to 3,000 cfs was extended to May and July.³ The requirement to meet the Sacramento River flow objective at Rio Vista for the protection of fish

³ DWR and Reclamation did not request any changes to the Delta outflow requirement for June or beyond July.

and wildlife, was modified from September through November 15 to 2,000 cfs on a monthly average, with a 7-day running average of no less than 1,500 cfs. The compliance point for the requirement to meet the Western Delta electrical conductivity (EC – a measure of salinity) objective for the protection of agriculture at Emmaton on the Sacramento River was moved to Threemile Slough on the Sacramento River⁴ from May through August 15. The TUCP Order also included additional deadlines for reporting amounts of water conserved and submittal of updated water balance information. The Export Limits in the TUCP Order were also modified to reflect the current status of the ordering conditions.

2.5 Water Code Section 1435

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 changes. (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 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:

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 Water Code defines “urgent need” to mean “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

⁴ Threemile Slough is approximately three miles upstream of Emmaton.

fullest extent of which they are capable and that waste of water be prevented” (Wat. Code, section 1435, subd. (c).) The Water Code also provides, however, that the State Water Board shall not find a petitioner’s need to be urgent if the Board in its judgment concludes, if applicable, that the petitioner has not exercised due diligence in petitioning for or pursuing a change pursuant to other provisions of the Water Code governing non-urgent changes. (*Ibid.*)

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 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 temporary urgency change petition. (Resolution 2012-0029, ¶¶ 2.2, 4.4.1.)⁵ The authority to act on temporary urgency change petitions is also included in the delegation of authority to the Executive Director in State Water Board Resolution 2012-0061.

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.) Temporary urgency change orders expire automatically 180 days after issuance, unless they are revoked or an earlier expiration date is specified. (*Id.*, § 1440.) The State Water Board may renew temporary urgency change orders for a period not to exceed 180 days. (*Id.*, § 1441.)

2.6 Findings of the State Water Board’s Executive Director

The Executive Director’s January 31, 2014 TUCP Order and subsequent modifications to that Order included all the findings necessary to approve the TUCP and subsequent requests.

The Executive Director found that there was an urgent need for the proposed changes in light of critically dry conditions, low storage levels in Project reservoirs, and the need to conserve stored water in order to protect fishery resources, prevent salt water intrusion into the Delta, and ensure that adequate supplies are available in the future to meet minimal water supply needs.

⁵ The Deputy Director for Water Rights may act on a temporary urgency change petition if there are no objections to the petition. (Resolution 2012-0029, ¶ 4.4.1.)

The Executive Director found that the temporary urgency changes would not injure other lawful users of water. The Executive Director reasoned that other water right holders are not entitled to divert water previously stored or imported by the Projects that is released for use downstream, and therefore no water right holders would be injured to the extent that the changes would cause a reduction in storage releases, but not a reduction in natural and abandoned flows. To the extent that the changes could cause a reduction in natural and abandoned flows, the Executive Director found that other lawful users would not be injured because DWR and Reclamation were required to bypass adequate natural and abandoned flows to meet the demands of other lawful users of water.

In the May 2, 2014 TUCP Order that changed the Western Delta EC requirement, the Executive Director found that other lawful users of water would not be injured by projected increases in salinity levels because salinity levels would still be less than the levels that would exist in the absence of the Projects' operations, which prevent salinity intrusion under dry conditions by supplementing natural flows with storage releases. In addition, DWR and Reclamation had submitted information indicating that water quality would be adequate to meet both drinking water and agricultural requirements. Finally, the Executive Director added a condition to the TUCP Order requiring DWR and Reclamation to bypass natural and abandoned flows when the Projects are operating pursuant to the changes approved by the TUCP Order in order to ensure the protection of other water right holders and reduce the impact of the changes on fish and wildlife and water quality.

The Executive Director also found that the TUCP would not unreasonably affect fish, wildlife, or other beneficial uses. The Executive Director found that although fish and wildlife could be affected by the changes, the primary effects on fish and wildlife were due to the drought itself. Further, the Executive Director found that these effects were not unreasonable given the consequences of not approving the changes and depleting stored water supplies needed to prevent sea water intrusion into the Delta, protect fish and wildlife, and satisfy other demands for water, including health and safety now and in the future if conditions remain dry. The Executive Director also relied on the fact that the fisheries agencies had been consulted and did not object to the proposed changes. Further, the Executive Director relied on the fact that additional measures not included in the changes would be implemented to reduce impacts to fish and wildlife, including specific rules for operations of the DCC Gates, fish rescue provisions, and provisions for flows in future years.

- (a) Irregularity in the proceedings, or any ruling, or abuse of discretion, by which the person was prevented from having a fair hearing;
- (b) The decision or order is not supported by substantial evidence;
- (c) There is relevant evidence which, in the exercise of reasonable diligence, could not have been produced; or
- (d) Error in law.

On reconsideration, the Board may:

- (a) Refuse to reconsider the decision or order if the petition fails to raise substantial issues related to the causes for reconsideration;
- (b) Deny the petition upon a finding that the decision or order was appropriate and proper;.
- (c) Set aside or modify the decision or order; or
- (d) Take other appropriate action.

(Cal. Code Regs., tit. 23, § 770.)⁶

4.0 DISCUSSION

As discussed above, there were numerous and detailed comments submitted on the TUCP Order and the various modifications. All of those comments have been thoroughly reviewed and considered. However, this Order does not provide a point by point discussion of each issue raised in the comments, nor is that necessary to determine whether reconsideration should be granted. Instead, this Order addresses the major substantive issues that were raised to determine if the changes that were made at the time, given the information available at that time, merits reconsideration. For the reasons set forth below, the Board finds that the TUCP Order, and subsequent modifications thereto, was appropriate and proper, and therefore the petitions for reconsideration should be denied. However, the Board does find that changes to the TUCP Order are merited to improve planning and coordination now and in the future in the event of continued dry conditions in order to ensure the protection of the public interest and the reasonable protection of other beneficial uses of water. The main contentions raised in the petitions, protests, and objections are addressed below. To the extent that any issue raised is not addressed in this Order, we conclude that the issue is not a substantial issue that merits review. (Cal. Code Regs., tit. 23 § 770, subd. (a)(1).)

⁶ The State Water Board is directed to order or deny reconsideration on a petition within 90 days from the date on which the board adopts the decision or order. (Wat. Code, § 1122.) If the State Water Board fails to act within that 90-day period, a petitioner may seek judicial review, but the board is not divested of jurisdiction to act upon the petition simply because it failed to complete its review of the petition on time. (State Water Board Order WR 2009-0061 at p. 2, fn. 1; see *California Correctional Peace Officers Ass'n v. State Personnel Bd.* (1995) 10 Cal.4th 1133, 1147-1148, 1150-1151; State Water Board Order WQ 98-05-UST at pp. 3-4.)

4.1 The TUCP Order and Its Subsequent Modifications Correctly Determined that the Changes Were in the Public Interest

We begin by addressing the overarching issue of whether the changes approved by the TUCP Order were in the public interest. Numerous comments addressed this issue. Many of the specific comments are now moot but were considered and, in some cases, acted upon in the various modifications to the TUCP Order that were made by the Executive Director. Primarily, commenters expressed the concern that the changes approved by the TUCP Order were not in the public interest for two disparate reasons, either because they did not constrain Project operations enough and caused unreasonable impacts to fish and wildlife and other beneficial uses of water, or because the changes constrained, or might constrain, Project operations too much and caused or might cause unreasonable impacts to water supplies. Further comments were made that the changes were not in the public interest because the need for the changes resulted from a lack in planning associated with the drought.

The State Water Board finds that all of the various changes that were approved by the Executive Director in the TUCP Order were in the public interest. As discussed above and in the TUCP Order and various modifications, California is in the third year of a serious drought. The drought conditions have significantly reduced the water supplies for all beneficial uses of water this year. Further, there is a strong possibility that the drought could continue into the next water year. As such, difficult decisions about protection of the public interest and other beneficial uses of water were needed this year on a short time frame. The various changes that were approved by the Executive Director in the TUCP Order and modifications to that Order were made to balance the different needs for water this year and next. The changes have extended, and will continue to extend, limited water supplies to help ensure that water is stored in upstream reservoirs that may be needed later this year and next year to protect salmon and steelhead, to maintain water supplies, and to improve water quality, which is in the public interest.

To ensure that the changes approved by the TUCP Order, and any future changes that may be needed in response to the drought, remain in the public interest, and may be made without injury to other lawful users of water or unreasonable effects to fish and wildlife, this Order amends the TUCP Order to require the following:

- DWR and Reclamation to report on conserved water under the Order and updates to the water balance earlier, specifically within 20 working days after the first day of the following month;
- DWR and Reclamation to consult with the State Water Board and fisheries agencies on a weekly basis regarding operational decisions that may affect listed species and other beneficial uses of water, including fall-run Chinook salmon, and to make available to State Water Board and fisheries agency staff the technical information used to make these operational decisions, including planned operations, temperature models, modeling and monitoring information, water quality modeling and monitoring information, and information about potential impacts of operational changes on other water users and to report to the Board monthly at its Board meetings on their drought operations and the information discussed above beginning with the first October Board meeting;
- DWR and Reclamation to develop a water year 2015 drought contingency plan that identifies planned minimum monthly flow and storage conditions that consider Delta salinity control, fishery protection, and supplies for municipal water users related to projected flow and storage conditions, and any other information that may be requested by the Executive Director or his designee; the plan for the beginning of the water year shall be submitted by October 15, 2014; the plan for the remainder of the water year shall be submitted by January 15, 2015, with updates as needed; and
- Reclamation to: immediately identify and evaluate all available options for reducing temperature and redd dewatering impacts to winter-run Chinook salmon on the Sacramento River this summer and fall, and immediately make available technical information to evaluate the feasibility of various temperature management options; report monthly to the State Water Board during its Board meetings on actions that have been or will be taken to reduce impacts to winter-run Chinook salmon that considers other fisheries needs, including spring- and fall-run Chinook salmon; prepare by January 15, 2015, a temperature management plan for the Sacramento River for the 2015 winter-run Chinook salmon spawning and rearing period that is regularly updated as conditions warrant; meet weekly with the Sacramento River Temperature Task Group (SRTTG) to discuss operations and options for reducing or avoiding redd dewatering, stranding and temperature impacts to winter-run Chinook salmon; and confer on recommendations from the SRTTG group at RTDOMT meetings and other applicable SWP and CVP operational decision making meetings.

The above conditions will help to ensure that adequate planning for continued drought conditions is conducted in the near term and that information needed to fully inform future decision-making is developed and made available in a transparent and timely manner.

Below is a discussion of the specific substantive public interest comments that were received and the responses to those comments. Additional comments that were phrased as public

interest comments may be discussed elsewhere in this Order if the substance of the comment was more closely aligned with another issue.⁷

4.1.1 Carryover Storage

NRDC, CSPA, AquAlliance, and CWIN argued that the TUCP Order and its various modifications were not in the public interest because minimum carryover storage requirements were not established to protect cold water pool resources for salmonids and other water quality and flow requirements. CSPA, AquAlliance, and CWIN argued that the Board should conduct a hearing to establish minimum carryover storage requirement that would take into consideration water right priorities, Delta water quality requirements, and North of Delta instream uses, including protection of cold water pools. Conversely, the Northern California Water Association (NCWA) expressed concerns with establishing minimum carryover storage requirements for north of Delta reservoirs and its potential effects on senior water rights and indicated that the Board should consider the amount of existing water supplies in other reservoirs that could be used for health and safety needs when considering whether to establish carryover storage requirements for project reservoirs.⁸ The Cities of Roseville and Folsom and the San Juan Water District commented that the carryover storage forecasts in the DOP did not address contingencies if drought conditions continue into 2015. They requested that Reclamation

⁷ Specifically, various Project contractors and environmental groups commented about whether the export constraints were in the public interest. The contractors commented that it was not in the public interest to constrain exports to health and safety levels and the environmental groups commented that it was not in the public interest to allow for exports greater than actual health and safety levels under the TUCP Order. While the original January 31 TUCP Order did limit exports under the Order to health and safety levels, in response to precipitation events, later modifications were made to allow for additional exports. These modifications were made to reduce the impact of the significant water supply reductions to export contractors resulting from the drought, while also providing protection to other beneficial uses of water by limiting additional exports to natural and abandoned flows and requiring that certain water quality and flow objectives be met in order for those additional diversions to occur. As such, the State Water Board finds that the export limitations included in the Order and its various modifications appropriately balanced the need to meet flow and water quality objectives against very real and severe water supply reductions from reduced exports and were in the public interest. Detailed discussions of the export issues are included in sections 4.3.1, 4.5, and 4.6.5 below.

⁸ WCWD et al. commented related to this issue. Their comments are addressed in the section on injury to other lawful users of water below.

develop a Folsom Reservoir Operations Plan that provides projections for American River operations into 2015.⁹

In the April 9 Order, the Executive Director found that the DOP end of September storage targets appeared to be a reasonable balance between the different demands for water this year and the need to reserve water in storage in the event of a dry year in 2015, but that it was uncertain whether those targets could be achieved given modeling uncertainties and consumptive uses of water. Due to this uncertainty, the TUCP Order stated that the State Water Board would monitor how well the end of month storage estimates in the operational forecasts were tracking with actual conditions to determine whether end of September storage requirements should be established. To date, DWR and Reclamation have met the targets identified in the DOP and as such, carryover storage levels have not been established. The State Water Board finds that this approach continues to be appropriate. In addition, to ensure adequate planning and consideration of the need for carryover storage for a variety of purposes, including fisheries protection, municipal water use, and Delta salinity control, this Order requires DWR and Reclamation to develop a drought contingency plan that takes these issues into consideration. Further, this Order requires additional planning for, and consideration of, temperature control issues and other issues that may affect ESA listed species.

4.1.2 San Joaquin River Flow Modifications

NRDC and TBI argued that the modification of the Vernalis flow requirements were not in the public interest because the change would unreasonably impact fish and wildlife without substantially improving reservoir storage levels, and at the same time substantial water deliveries were planned to junior Stanislaus River contractors. NRDC and TBI referenced analyses by SJTA who also objected to the change on similar grounds. SJTA claimed that the April 11 modification of San Joaquin River flows would contribute to minimal storage increases

⁹The Cities of Roseville and Folsom and the San Juan Water District argued that their contractual entitlements to water from Folsom Reservoir have priority over Project exports based on area of origin protections, and therefore Reclamation should develop a Folsom Reservoir Operations Plan that ensures that their needs will be met. In response, SLDMWA argued that such a plan was not necessary, and that Roseville, Folsom, and San Juan Water District did not have a priority over other CVP water users on the bases they had claimed. We disagree that an operations plan is unnecessary, but recognize that development of a drought contingency plan is a complex undertaking that will require evaluation of DWR's and Reclamation's legal obligations under federal reclamation law, the terms and conditions of the water right permits for the Projects, the ESA, the Coordinated Operations Agreement between DWR and Reclamation, and DWR's and Reclamation's water supply contracts. Factors other than contractual priorities may control how Folsom Reservoir is operated in the near future, and it may not be necessary to resolve the dispute between the agencies with contracts for water supplies from Folsom Reservoir in order to develop an adequate drought contingency plan. Accordingly, it is unnecessary to address the contractors' arguments concerning area of origin protections in this Order.

with no operational benefit in New Melones Reservoir. SJTA stated that the change would only allow Reclamation to maintain approximately 42,000 acre-feet of water in storage that would not otherwise be released. SJTA stated that this minimal savings would have no effect on New Melones operations, including its ability to improve temperatures, water quality and water deliveries. Reclamation responded to SJTA's protest, providing information indicating that New Melones has little reliable Project water available on an annual basis due to senior water rights and variable hydrology. Contrary to SJTA's estimate, Reclamation projected that the savings to storage from the change over the entire period could have been as high as 140,000 acre-feet of water. On August 15, 2014, Reclamation reported that the actual savings was roughly 74,000 acre-feet. While relatively small compared to the roughly 1,000,000 acre-feet of storage available in New Melones (as of mid-April), the savings is significant considering that useable Project storage is much less than this amount and that drought conditions may continue. As such, the State Water Board finds that the change was in the public interest. Further, the additional conditions discussed above will help to better inform future decisions related to this matter to ensure that they are in the public interest.

4.2 The TUCP Order and Its Subsequent Modifications Correctly Determined that there was an Urgent Need for the Temporary Urgency Change

Another issue, which was raised in several objections, is whether DWR and Reclamation had an urgent need for the changes that were approved. In its objection, South Delta Water Agency (SDWA) contended that DWR and Reclamation did not exercise due diligence in pursuing a non-urgent change petition, and therefore Water Code section 1435, subdivision (c) precluded a finding that there was an urgent need for the temporary changes. SDWA argued that DWR and Reclamation knew well before January 2014 that drought conditions existed, and that some if not all of the Decision 1641 requirements could not be met this year. SDWA argued further that DWR and Reclamation could have filed a non-urgent change petition in the fall or early winter of 2013, which would have allowed the State Water Board to conduct a public hearing on the petition. Similarly, the SJTA argued in its objection that Reclamation's difficulty with meeting San Joaquin River flow objectives in successive dry years has been well-documented over the past two decades, and Reclamation's inability to meet the objectives this year was routine and not urgent. SDWA also argued that the May 2, 2014 changes to requirements for agricultural water quality protection and fishery flow needs through November 15 of this year were not urgent, and the Board should have required DWR and Reclamation to use the normal change petition process for these longer term changes rather than the urgency process.

Water Code section 1435, subdivision (c) provides that the State Water Board shall not find the need for a proposed temporary change to be urgent “if the board in its judgment concludes, if applicable, the petitioner has not exercised due diligence . . .” in filing or pursuing a change pursuant to other provisions of the Water Code governing non-urgent changes. The TUCP Order did not address whether DWR and Reclamation had been diligent in filing and pursuing a non-urgent change petition. Nonetheless, the TUCP Order correctly determined that there was an urgent need for the changes requested, for the following reasons.

First, the decision whether to find a lack of diligence is discretionary. As the State Water Board reasoned in [Order WR 2009-0012](#):

[T]he Water Code provides that the State Water Board shall not find the need for a proposed temporary change to be urgent “if the board *in its judgment* concludes, if applicable, that the petitioner has not exercised due diligence . . .” in petitioning for or pursuing a change pursuant to other provisions of the Water Code governing non-urgent changes. (Wat. Code, § 1435, subd. (c), italics added.)¹⁰ In our judgment, it was appropriate not to find a lack of diligence in light of the unusual circumstances that existed . . ., including drought conditions and the Governor’s drought proclamation.

(SWRCB Order WR 2009-0012, pp. 11-12). Similarly, due to the extraordinary circumstances presented by the current drought, it would have been appropriate, in our judgment, for the Executive Director to find an urgent need, and not to make a finding of lack of diligence, even if DWR and Reclamation could have filed a non-urgent petition early enough to have the approval in time to adequately address the need to conserve stored water in order to protect fishery resources, prevent salt water intrusion into the Delta, and ensure that adequate supplies are available in the future to meet minimal water supply needs.

A second reason why SDWA’s contention lacks merit is because the facts do not support SDWA’s claim that DWR and Reclamation could have filed a non-urgent petition in the fall or early winter of 2013 requesting all of the changes that ultimately were needed for this year. In late 2013, DWR and Reclamation did not know with certainty whether the drought would persist

¹⁰ “Section 1435 of the Water Code addresses the petitioner’s diligence in the context of the State Water Board’s determination of whether there is an urgent need for the change. (Wat. Code, § 1435, subd. (c).) Section 1435 does not include a finding of due diligence among the findings that the State Water Board is required to make before the State Water Board may approve a temporary urgency change. (Wat. Code, § 1435, subd. (b).) This structure reinforces the conclusion that while due diligence may be an issue in the State Water Board’s review of a proposed temporary, urgent change, the ultimate issue is whether there is an urgent need, and the State Board may exercise its judgment to conclude that an urgent need exists without finding that the petitioner has exercised due diligence.” (SWRCB Order No. Order WR 2009-0012, p. 11, fn. 4.)

into 2014, or what the severity of the drought would be. Unfortunately, the drought continued, and conditions have remained dry through most of 2014. In order to maximize the beneficial use of water during the drought, and achieve a reasonable balance between demands for Project water supplies this year, the need for water to protect water quality in the Delta, and the need to conserve stored Project water in order to meet water supply and water quality needs in the future, DWR and Reclamation have had to adjust Project operations on a real-time basis. Likewise, they have had to request changes to Decision 1641 requirements on a real-time basis.

Although DWR and Reclamation could not have anticipated with certainty the need for most of the changes requested, SJTA's argument that Reclamation could have anticipated the need to change the requirement to meet the Vernalis flow objectives has merit. It does not follow, however, that Reclamation should have filed a non-urgent change petition because the Board could not have considered approval of the change before Governor Brown suspended Water Code section 13247 as applied to the TUCP in his January 17, 2014 Drought Emergency Proclamation.¹¹

As to the changes approved in the May 2, 2014 Order, contrary to SDWA's assertion, no changes to requirements for agricultural water quality protection are effective through November. The order approved a change in the requirement to meet the Western Delta salinity objective at Emmaton, which was only in effect through August 15, 2014. In addition, the changes to Delta outflow requirements approved in the May 2 Order were effective only for the months of May and July. The May 2 Order also approved changes to the Sacramento River at Rio Vista flow requirements from September through November 15, but none of the objectors or petitioners have objected to this change in particular, or otherwise indicated that a different process should have been followed in order to evaluate the merits of this particular change.¹²

¹¹ Absent suspension of section 13247, the State Water Board could not have approved changes to Decision 1641 requirements that are necessary to fully implement water quality objectives in the manner specified in the Bay-Delta Plan. (*State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 674, 724-734.)

¹² In addition to the arguments described above, SJTA argued that Reclamation had not established an urgent need for the change in the requirement to meet Vernalis flow objectives because the urgency was the result of operational constraints that Reclamation had accepted and Reclamation's decision to allocate 88,000 acre-feet from New Melones to its contractors. Similarly, CSPA, AquAlliance, CWIN, and Planetary Solutionaries, alleged that the need for the TUCP was the result of past operational decisions to draw down Project reservoirs in order to support Project exports instead of maintaining adequate carry-over storage levels. These issues address long-term planning issues for the Projects and do not negate the urgency of the changes needed in this particular year due to the drought. To better plan for continued drought conditions, this Order includes additional conditions discussed above.

4.3 The Changes Do Not and Will Not Result in Injury to Lawful Users of Water

4.3.1 The Export Limitation Did Not and Will Not Result in Injury

A number of water supply contractors objected to the condition of the TUCP Order that limited exports from the Delta to 1,500 cfs or the minimum amount necessary to meet health and safety needs, whichever is less. As stated above, this condition was based on DWR and Reclamation's TUCP, which proposed operating the Projects at combined health and safety exports of 1,500 cfs together with the proposal to relax the requirement to meet the Delta outflow objectives and the DCC Gate objective. Pursuant to the TUCP Order, the 1,500 cfs limitation applied when the Projects were operating to meet a modified Delta outflow requirement of 3,000 cfs when the DCC gates were open. The Executive Director subsequently modified this condition to allow increased exports of natural and abandoned flows when certain water quality requirements were met, and to allow the use of exported water for other authorized purposes, provided that health and safety needs were met. Pursuant to the May 2, 2014 Order modifying the TUCP Order, the modified export limitation also applies when the Sacramento River flow and electric conductivity requirements are not being met.

The water supply contractors made a number of arguments in support of their objections to the export limitation, including the argument, advanced by several CVP contractors, that they are lawful users of water, and the export limitation will result in injury to them by reducing the amount of water delivered to them under their contracts. As explained in section 4.5.1, below, the contractors' objections to the export limitation is largely moot. In addition, as explained in this section, the argument that the limitation will result in injury lacks merit because the contractors are not entitled to more water than DWR and Reclamation can deliver consistent with their water right permits. (The contractors remaining arguments in support of their objections to the export limitation are addressed in sections 4.5.2 through 4.5.4, below.)

As set forth in the January 31, 2014 TUCP Order, the term "injury" as used in Water Code section 1435, subdivision (b)(2) means the invasion of a legally protected interest. (See *State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 674, 738-743.) Irrespective of the terms of their contracts, the contractors do not have a legally protected interest in more water than DWR and Reclamation are authorized to deliver consistent with the conditions of their water right permits. (See *State Water Resources Control Board Cases, supra*, 136 Cal.App.4th at p. 806, fn. 54 [An appropriator cannot give away any more rights than he has];

United States v. State Water Resources Control Bd. (1986) 182 Cal.App.3d 82, 145-148.) As discussed in sections 4.5 and 4.6.5, below, the export limitation is a temporary condition of DWR's and Reclamation's permits and license, which was lawfully imposed pursuant to the Water Code provisions governing temporary urgency changes. During periods when the modified export limitation is operative, DWR and Reclamation must comply with the limitation, and the contractors are not entitled to more water than DWR and Reclamation can deliver consistent with the limitation. Therefore, any reduction in contract deliveries caused by the modified export limitation did not and will not result in injury to the contractors.¹³

4.3.2 An Increase in Salinity Due to the Changes Did Not and Will Not Result in Injury NRDC, Pacific Coast Federation of Fishermen's Associations and the Institute for Fisheries Resources, Golden Gate Salmon Association, Defenders of the Wildlife, and TBI argued that the February 28 Order, that allowed increased exports with a continued reduction in Delta outflow, had the potential to injure lawful users of water by worsening salinity conditions for agricultural users in the Delta. Similarly, SDWA argued that the changes approved by the TUCP Order would harm agricultural uses in the Delta. These arguments do not have merit, because, as explained in the May 2 Order, water right holders only are entitled to the flows to which they are legally entitled for their purposes of use; they are not entitled to have water released from upstream storage in order to provide better water quality than would otherwise exist, and they are not entitled to better water quality than necessary to allow them to use the water to which they are entitled. This argument also lacks merit because the March 18 Order included a condition requiring DWR and Reclamation to bypass natural and abandoned flows to the extent necessary to protect senior water right holders. This condition was further strengthened in the May 2 Order to require DWR and Reclamation to bypass all natural and abandoned flows when they are operating under the changes approved by the TUCP Order.

¹³ In their joint petition for reconsideration, WCWD et al. argued that imposing minimum carry-over storage requirements or earmarking water conserved by the TUCP Order for health and safety purposes would result in injury to them to the extent that such limitations would reduce the amount of water delivered to them under their settlement contracts with DWR. Although they did not allege injury, several other commenters expressed similar concerns about the effect of carryover storage requirements on water deliveries for various purposes in 2014.

These concerns are misplaced because the TUCP Order did not impose minimum carry-over storage requirements or require water conserved as a result of the changes approved by the TUCP Order to be used exclusively for health and safety purposes. As discussed in section 4.1.1 of this Order, DWR and Reclamation's development and implementation of minimum carryover storage targets for Project reservoirs has obviated the need for such requirements to be imposed. If carryover storage requirements were to be imposed as a lawful condition of the TUCP Order, however, any resulting reduction in deliveries under SWP or CVP contracts would not constitute injury for the reasons stated above.

4.3.3 The Change to San Joaquin River Flow Requirements Did Not and Will Not Result in Injury

SJTA argued that the April 11 modified San Joaquin River flow requirements, which provide Reclamation relief from releasing flows from storage in New Melones Reservoir, would cause injury to SWP and CVP contractors because their ability to export water is directly dependent on San Joaquin River flows. The SJTA did not allege that it would be injured by the change to San Joaquin River flow requirements, and the SWP and CVP contractors themselves did not object to the change on this basis. Accordingly, this is not a substantial issue that merits review.

SJTA also argued that the TUCP Order should be clarified to indicate that Reclamation is solely responsible for meeting San Joaquin River flow requirements. In other words, SJTA was concerned that, through the temporary urgency change process, the Executive Director or Board might require other entities that divert from San Joaquin River tributaries to bypass or otherwise provide flows to achieve compliance with the Decision 1641 San Joaquin River flow requirements. This argument is misplaced because the TUCP Order did not operate to affect the obligations of water right holders other than DWR and Reclamation.

4.4. The Changes Did Not and Will Not Unreasonably Affect Fish and Wildlife and Other Instream Uses

Various commenters argued that the changes would have unreasonable effects on fish and wildlife. Many of the specific comments were made moot by changes or are now moot because the effective period for the change has passed. However, all of the comments were considered, and as deemed appropriate by the Executive Director, acted upon in the various modifications to the Order that were made by the Executive Director. Further, as discussed above, additional conditions have been added to this Order to ensure that the changes are in the public interest and do not unreasonably impact fish and wildlife and other beneficial uses of water.

The Executive Director acknowledged that the approved changes to DWR's and Reclamation's requirements to meet flow and water quality objective could impact fish and wildlife, but concluded that those effects would not be unreasonable given the tradeoffs in this third year of a drought with the potential for a continuation of the drought into the future. In determining whether the impact of the changed requirements on fish and wildlife was reasonable, the Executive Director weighed the short-term impacts to fish and wildlife against the long-term impact to all beneficial uses of water, including fish and wildlife, if the changes were not

approved. The Orders noted the critically dry hydrologic conditions in the Sacramento and San Joaquin River watersheds and the associated below average storage levels in all of the Project reservoirs and very low Project water supply allocations. The Orders noted that without the changes, storage levels would have been further reduced and water supplies for various purposes would have been diminished. The Executive Director found that a one-time change to requirements was not likely to harm the long term existence of salmon and steelhead populations. In addition, although fish and wildlife may be affected by these changes, the primary effects on fish and wildlife are due to the drought itself, as the changes are either not likely to result in substantial additional impacts over unchanged conditions, or are intended to prevent more severe adverse effects to species. The Board concludes that although fish and wildlife may have been, and may continue to be affected by the TUCP Order, the Order provided a reasonable balance between protection of fish, wildlife and other instream beneficial uses of water and other needed uses for water from the Delta during the hydrologic conditions that exist this year.

Further, the new conditions discussed above will help to ensure the reasonable protection of fish and wildlife into the future. Specifically, the requirement that DWR and Reclamation consult with the fisheries agencies and the State Water Board on a weekly basis regarding operational decisions that may affect listed species and other beneficial uses, and provide technical information necessary to support those decisions to the State Water Board and fisheries agencies, will ensure that fish and wildlife needs are considered in real-time decision-making under the TUCP Order. In addition, the drought contingency plan will help to ensure that DWR and Reclamation plan for continued drought conditions, and that protection of fish and wildlife and other beneficial uses of water will be considered in that planning. Further, the requirements for specific planning for Sacramento River temperature management throughout the next hydrologic season will help to ensure that actions necessary to protect winter-run Chinook salmon next year are identified early and considered in future operational decisions.

The major issues raised in individual comments are discussed in more detail below. Due to the changed circumstances throughout the effective period of the TUCP Order, the following discussion does not respond to every comment on effects on fish and wildlife, but focuses on major issues.

4.4.1 January 31, February 7, February 28, Conditions

As described in greater detail above, the original TUCP Order allowed for changes to the Delta outflow and DCC Gate operations, the modification made on February 7 allowed for exports in compliance with Decision 1641 during runoff events, and the modification made on February 28 extended the Order into March. CSPA, AquAlliance, and CWIN argued that the changes approved in those Orders would have unreasonable effects on fish and wildlife. CSPA, AquAlliance, and CWIN's primary argument was that modification of Delta outflows to less than half the Decision 1641 requirement could cause the effects of exports to be severe, even during and after rain events, especially with the opening of the DCC Gates. Specifically, CSPA, AquAlliance and CWIN expressed concerns that the combination of conditions would cause increased entrainment of salmonids and larval longfin smelt, and that impacts to pelagic species would likely increase throughout the season.

In approving the change, the Executive Director relied upon information provided by DWR and Reclamation on January 29, 2014, and January 31, 2014, to determine that the changes would not unreasonably affect fish and wildlife. That information indicates that the existing dry conditions would likely adversely affect spawning and rearing conditions for longfin smelt, migration and spawning conditions for delta smelt, and migration conditions for winter-run Chinook salmon, spring-run Chinook salmon, steelhead trout, and green sturgeon, but that those impacts might have been greater without the change. DWR and Reclamation stated that the changes were proposed to balance the short-term and long-term habitat needs of some of the covered anadromous and pelagic species during the entirety of water year 2014. DWR and Reclamation provided information to support the conclusion that while maintaining the required Delta outflows and DCC Gate requirements would have provided short term support for the species, continued dry conditions would likely lead to worse impacts later in the year without the changes. Specifically, DWR and Reclamation stated that reduced flows and opening of the DCC Gates could lead to increased mortality and straying of native fish, but also would provide for water to be maintained in storage for use later in the year. DWR and Reclamation provided information to indicate that failure to maintain adequate reservoir storage could have led to a loss in the Projects' ability to maintain cold water and flow conditions for use later in the year for winter-run Chinook salmon egg survival, to provide suitable upstream conditions for spring-run Chinook salmon and steelhead trout rearing, and to support delta smelt and longfin smelt rearing and maturation later in the year. Further, the changes were mitigated to some extent by the limitations on exports which also provided for reduced entrainment and salvage of listed

species. In addition, criteria for opening and closing the DCC Gates to avoid impacts to fish species that relied on monitoring of fish presence at critical locations to determine whether the DCC Gate may be opened or should be closed, were developed and implemented.

In addition to the above, the Executive Director relied on the concurrence letters from the fisheries agencies to determine that the effects of the changes on fish and wildlife would not be unreasonable. On January 31, 2014, NMFS concurred with DWR and Reclamation's petition and stated that the petition was consistent with the 2009 NMFS Biological Opinion, and that the modified requirements were not likely to jeopardize the continued existence of endangered fish species. USFWS also concurred with the petition, stating that there were low risks of delta smelt entrainment due to low reverse flows in Old and Middle Rivers, low turbidity, favorable distribution of adult delta smelt outside of the south and central Delta, and lack of salvage of delta smelt. USFWS attributed these conditions to the extreme drought conditions resulting in low Delta flows and severely limited exports.

Based on the above, the State Water Board concurs with the Executive Director's determination that the changes approved by the January 31, February 7 and February 28 Order would not unreasonably affect fish and wildlife. While the State Water Board understands that impacts to fish and wildlife occurred due to the change, the State Water Board agrees that the benefits of maintaining water in storage for the protection of fish and wildlife and other uses later in the year and next year outweighed these impacts. Other comments related to whether the above Orders unreasonably affected fish and wildlife are discussed below.

In addition to the changes, CSPA, AquAlliance, and CWIN objected to the fact that the Orders did not limit water transfers in excess of the health and safety export restrictions of 1,500 cfs established in the Order. CSPA, AquAlliance, and CWIN further argued that any limited protective function of reducing exports to health and safety needs of 1,500 cfs would be reduced in proportion to the volume of any water transfers that were allowed to take place, and that the fishery impacts caused by water transfers would become more severe when Delta outflow approaches the temporary minimum of 3,000 cfs.

This objection is misplaced to the extent that it is directed at any transfers that have been or will be effectuated under water rights that are not held by DWR or Reclamation because the TUCP Order did not approve any such transfers. Any transfers effectuated under a third party's

permitted or licensed right would require a separate approval process. The public and the fisheries agencies are provided an opportunity to protest or comment on proposed water transfers. Based on any comments, protests, or other information, the Board may disapprove transfers or approve them subject to conditions designed to protect fish and wildlife. Parties may also petition for reconsideration of any transfer orders if they believe that their protests or comments were not adequately addressed. In addition, while increased exports from transfers may lead to increased entrainment of fish at the export facilities, those impacts are mitigated to some extent by increases in inflows from the transfers, including carriage water. Increased flows from transfers provide some benefits to fish and wildlife from the point where the water was not diverted to the Delta. Some of the transfers this year were also specifically timed to provide fisheries benefits. Finally, export of transfer water is still subject to other constraints on Project operations, including the modified DCC Gate closure requirements, Export to Inflow constraints and other ESA provisions designed to protect fish and wildlife. The State Water Board appreciates that there may have been some impacts to fish and wildlife from not constraining transfers further under the TUCP Order. However, given the dire water supply conditions that existed, the fact that those impacts would have been even worse without transfers, and the fact that the changes were limited in time, the Board finds that the impacts to fish and wildlife were not unreasonable.

CSPA, AquAlliance, and CWIN also argued that the February 7 TUCP Order resulted in a cap on natural flow pulses. The February 7 TUCP Order did not limit pulse flows. The February 7 modification only clarified that when DWR and Reclamation were complying with Decision 1641 requirements during storm events (specifically the Delta outflow and DCC Gate closure requirements contained in Table 3 of Decision 1641) that they could export water in compliance with Decision 1641 limits except that those exports were limited to natural and abandoned flows. The condition allowed DWR and Reclamation to export additional water up to the Decision 1641 export limits during storm events while at the same time ensuring that storage levels were not reduced through the provision requiring additional exports to be supported by natural and abandoned flows. The February 7 TUCP Order did not constrain pulse flows. In fact, Condition 1.a. actually provided for a pulse flow scheduled through the RTDOMT. Based on the above, the State Water Board finds that the February 7 Order appropriately balanced water supply needs with the protection of fish and wildlife and did not unreasonably impact fish and wildlife.

In connection with the original Order and subsequent modifications, California Waterfowl Association, Ducks Unlimited, Audubon California, Defenders of Wildlife, and Grasslands Water District (Grasslands) objected to export limits and other constraints on Project operations that could affect water supply deliveries to refuges, particularly if any such constraints resulted in delivery of less than 75 percent of the Level 2 Water Supply under the federal Central Valley Project Improvement Act (“CVPIA”). Originally, due to the dire water supply conditions, exports were limited to health and safety levels. Following precipitation events, the March 18 Order expanded those limitations to allow other uses, including refuge water supplies. Subsequently, North of Delta refuges were allocated 75 percent and South of Delta refuges were allocated 65 percent of their contract supplies. Accordingly, this issue is moot. Based on the increased allocations, Grasslands confirmed that its objection was addressed by letter dated May 13, 2014.

4.4.2 March 18 Conditions

The March 18 Order allowed DWR and Reclamation to export water up to the Decision 1641 export limits during March when precipitation and runoff events occurred that allowed the DCC Gates to be closed and the Delta outflow requirements to be met, except for the requirements included in Table 4 of Decision 1641. Footnote 10 of Table 3 of Decision 1641 required a Delta outflow of 7,100 cfs calculated as a 3-day running average, or either a daily or 14-day running average electrical conductivity (EC - a measure of salinity) at the confluence of the Sacramento and San Joaquin rivers of less than or equal to 2.64 millimhos per centimeter (mmhos/cm).¹⁴ The Order found that when compared to Delta outflow levels of 3,000 cfs approved in the February 28 TUCP Order, Delta outflows of 7,100 cfs (or equivalent salinity level) were expected to improve conditions for numerous estuarine and anadromous species in the Delta. In addition, closure of the DCC Gates was expected to improve conditions for fish by reducing entrainment of migrating salmonids into the interior Delta. The TUCP Order found that the effects of higher exports were expected to be offset to some extent by the additional Delta outflows and closure of the DCC Gates. Further, the export of additional water was limited to natural and abandoned flows, ensuring that stored water was maintained in upstream reservoirs for use later in the season for fish and wildlife and other purposes. This change was actually not used during March because DWR and Reclamation were able to comply with both the

¹⁴ Table 4 of Decision 1641 required DWR and Reclamation to meet 29 days of flows at 11,400 cfs on a 3 - day average, or either a daily or 14-day running average EC level of 2.64 mmhos/cm at Chipps Island (station D10) in March.

footnote 10 and Table 4 Delta outflow requirements.¹⁵ However, the arguments are still addressed below because they also are relevant to changes that were made after March.

In an objection to the March 18 Order, NRDC, Pacific Coast Federation of Fishermen's Association and the Institute for Fisheries Resources, Golden Gate Salmon Association, Defenders of Wildlife, and TBI (NRDC et al.) argued that the Order would unreasonably impact fish and wildlife because the changes approved in the Order (and other changes to biological opinion requirements that limit Old and Middle River reverse flows that had been approved by the fisheries agencies¹⁶) would not benefit upstream storage or otherwise benefit fish and wildlife, but would worsen impacts to fish and wildlife. NRDC et al. also argued that the TUCP Order would cause unreasonable effects on fish and wildlife because DWR and Reclamation had failed to address the cumulative effects of prior, current, and proposed future Project management on fish species.¹⁷ NRDC et al. further took issue with the discussion in the TUCP Order that stated that the additional outflows above 3,000 cfs that would occur when increased exports were allowed under the TUCP Order (compliance with Footnote 10 requirements of 7,100 cfs or alternate salinity compliance) would offset the effects of the additional exports. NRDC et al. argued that when evaluating potential impacts to fish and wildlife, the Order should have evaluated the effects of the increased exports compared to Decision 1641 outflow requirements rather than the relaxed outflows of 3,000 cfs allowed for in the February 28 Order.

The change to the Delta outflow requirement to 3,000 cfs for the month of March had already been approved in the February 28 Order. The only change made in the March 18 Order was to allow for additional exports during March when some, but not all of the Decision 1641 Delta outflow requirements were being met. Accordingly, it was not inappropriate to compare the alternate set of compliance requirements to the relaxed requirements that had already been

¹⁵ The Decision 1641 Delta outflow requirement allows additional days of compliance, beyond what is required in a given month, to be carried over into the following month. The Projects earned seven carryover days at Chipps Island in February. In March, twenty-seven days of Delta outflow compliance was required at Chipps Island and four additional days at Collinsville. The Projects met seven of the Chipps Islands days through carryover from February, an additional fifteen day were met through three-day average Delta outflow, and the remaining five were met though 14-day average EC. For the Collinsville days, three were met through three-day average Delta outflow and the fourth was met through 14-day average EC. Thus, the Projects operated in compliance with D-1641 for the entire month of March.

¹⁶ The Executive Director did not approve the changes to Old and Middle river reverse flow requirements. However, the fisheries agencies did concur with changes to the Old and Middle river reverse flow requirements in combination with their concurrence with the changes to the Decision 1641 export constraints.

¹⁷ NRDC et al. also raised issues with the installation of proposed temporary salinity control barriers. Since the barriers were not installed, this Order does not address this issue further.

approved. Regardless of the point of comparison for the change, the State Water Board appreciates the numerous concerns NRDC et al. raised with regards to impacts to fish and wildlife from the drought, antecedent conditions, and the change in Delta outflow requirements, and acknowledges that there were difficult tradeoffs to be made. The decision to be made in the March 18 Order was whether or not to allow the Projects to take advantage of limited opportunities during and following storm events to increase exports to support limited water supply needs for refuges and other south of Delta uses. When approving the change, the Executive Director relied upon information submitted by DWR and Reclamation, and the concurrence of the fisheries agencies to determine that the change would not have unreasonable impacts on fish and wildlife. The fisheries agencies concurred with the changes to the allowable exports in addition to changes in Old and Middle river reverse flow constraints. USFWS determined that any additional effects of both were expected to be minimal because of the short duration of the change, recent Delta smelt distribution data indicating that delta smelt distribution was far outside of the south and central Delta, and the lack of take of delta smelt to date. NMFS determined that the changes would likely cause unquantified reduction in survival to winter-run and spring-run Chinook salmon and steelhead, but that these effects would be minimized through other Old and Middle river flow restrictions and use of older juvenile chinook salmon loss density triggers for export constraints. DFW also agreed with the USFWS and NMFS concurrence letters.

The State Water Board concurs with the Executive Director's determination and finds that the change was not unreasonable given its short duration, the relatively high outflows required when additional exports were allowed, and the severe impacts to water supplies this year. With respect to NRDC et al.'s call for comprehensive planning, the State Water Board agrees that there was a need and continues to be a need to comprehensively address changes to Delta water quality and flow requirements made over time as a result of the drought. Staff from the State Water Board and the fisheries agencies were advocating for such a plan beginning in January. However, it took time for a plan to be developed that was both realistic and reasonable. As discussed above, on April 8, 2014, shortly after the March 18 Order, DWR and Reclamation issued a Drought Operations Plan (DOP), which outlined proposed operations through the end of November.

To ensure that planning is conducted earlier if next year is also dry, this Order includes additional planning, analysis and coordination requirements to support decision making in the coming months in the event that drought conditions continue.

4.4.3 April 11 Conditions

NRDC, TBI and SJTA argued that the April 11 TUCP Order modifying the San Joaquin River at Vernalis flow requirements would unreasonably impact fish and wildlife, particularly salmon and steelhead. NRDC, TBI, and SJTA argued that neither the April 11 Order nor any of the materials submitted by Reclamation with the petition analyzed impacts to fall-run Chinook salmon or spring -run Chinook salmon¹⁸ or to other species not listed under the federal or State ESA, although they would be impacted. While Reclamation did not provide a specific analysis of impacts to fall-run Chinook salmon or other species, it was reasonable to assume that impacts to fall-run Chinook salmon would be similar to impacts to steelhead because steelhead and fall-run Chinook salmon generally have similar needs, especially during the spring period. In fact, due to the limited numbers of steelhead and the limited ability to study steelhead in the San Joaquin River basin, information about fall-run is often used as a surrogate for information on steelhead. While there are behavioral differences between steelhead and fall-run Chinook salmon, it was reasonable to use steelhead as an indicator for impacts to fall-run Chinook salmon for the spring period when the species have similar needs. For example, steelhead adults migrate upstream only slightly later in the fall/winter than adult fall-run Chinook salmon and steelhead juveniles can stay over summer right below the dams and then migrate to the ocean later in life.

NRDC and TBI further argued that the reduced San Joaquin River flows approved in the Order would significantly harm salmon and steelhead without benefiting storage, and that the change would impact temperatures in the spring. The State Water Board appreciates that salmon and steelhead in the San Joaquin River likely have been significantly impacted by the drought. However, the change to the San Joaquin River flow requirements were expected to provide overall benefits. The change was made to save water in storage in New Melones to improve cold water pool resources and for future use. As discussed in section 4.1.2 above, the amount of water conserved by the change was projected to be significant. Storage levels at the time the change was made were a little more than one million acre-feet. Storage levels now are less

¹⁸ While fish that exhibit spring-run Chinook salmon like behaviors have been observed on the Stanislaus River, it is unclear whether a consistent self-sustaining population currently exists. As such, any effects on spring-run Chinook salmon this year were highly speculative, and therefore spring-run are not addressed further in this Order.

than 600,000 acre-feet. Reclamation projected that the change could save up to 140,000 acre-feet of storage and calculated that the actual savings was 74,000 acre-feet. Given prior water right and contract demands on the Stanislaus River, the effects of the change on storage levels were expected to be significant.

Further, it is not clear that providing the full required San Joaquin River flows would have provided a significant benefit to salmon and steelhead due to temperature concerns. While temperatures were projected to be higher during times when flows were reduced, temperatures were projected to be high this year regardless of the change. Specifically, temperatures later in the spring flow season were expected to be too high with or without the change to support migration of steelhead or fall-run Chinook salmon. As a result, the pulse flows provided in the TUCP Order were structured to promote migration earlier when temperatures were still suitable, while still providing for some base flows to support over-summering steelhead below Goodwin Dam. The water conserved by the change was then available to improve cold water pool resources and increase supplies for other uses later in the year. In addition, Reclamation has agreed to provide an additional spring pulse of water down the San Joaquin River in a future year to benefit outmigration of San Joaquin River steelhead, which is likely to benefit fall-run Chinook salmon and other species as well. Finally, a short term one-time reduction in flows in the San Joaquin River is not in itself likely to harm the long term existence of the salmon and steelhead populations in the river because there are other brood years that will not be impacted by these short term flow modifications. Instead, those other brood years should benefit from the improved storage conditions and additional flows in a future year. The State Water Board appreciates the prolonged impacts that salmon, steelhead and other species have experienced on the San Joaquin River and the need to complete the Board's pending update of the San Joaquin River flow objectives and their implementation to address these impacts. The State Water Board is committed to completing that process as soon as possible.

Based on the above, the Board concludes that the Executive Director correctly determined that the modifications approved in the April 11 TUCP Order would not unreasonably impact fish and wildlife. Given the extreme dry conditions, the tradeoffs between flows in the spring and storage later in the year for temperature and flow management, as well as other water supply purposes was reasonable.

4.4.4 April 18 Conditions

CSPA, AquAlliance, and CWIN argued that the changes approved in the April 18 TUCP Order would unreasonably affect fish and wildlife.¹⁹ Specifically, they argued that the change to the export constraints approved in the April 18 Order would negate any benefits of the San Joaquin River pulse flows, leading to the loss of the majority of outmigrating San Joaquin juvenile salmon and steelhead at the export facilities.

The April 11 Order allowed DWR and Reclamation to export at a level equal to 100 percent of the San Joaquin River flow during the April and May pulse flow period. This provision is consistent with the provisions of Decision 1641, which allow for exports of 1,500 cfs or 100 percent of the San Joaquin River flow, whichever is greater, during the pulse flow period. The difference under the TUCP Order is that flows were allowed to be reduced for about half of the 31-day pulse flow period (the pulse flows were essentially required to be met for half of the period) by a little more than half. At the same time, to avoid some of the impacts from exports, DWR and Reclamation planned to shift exports to the extent possible to the Jones Pumping Plant where impacts were expected to be lower on San Joaquin River fish, including steelhead. As discussed above, DWR and Reclamation also agreed to provide a pulse flow in a future year to benefit outmigrating San Joaquin River steelhead that would also benefit Chinook salmon and other species. Specifically, DWR and Reclamation agreed to make an amount of water equivalent to half the volume of increased exports realized over the pulse flow period available to provide for a larger pulse flow, for the fisheries agencies to shape, in the next “dry” or better water year type based on the San Joaquin Valley Index.

The State Water Board appreciates that the change in export requirements may still have impacted fish and wildlife, but given the extreme dry conditions and the various competing demands for water, the State Water Board determines that the impact of the change on fish and wildlife was not unreasonable. Further, the additional conditions imposed by this Order will require that analyses and planning are conducted to ensure that fish and wildlife are not unreasonably impacted by potential future changes that may be needed next year in the event of continued dry conditions.

¹⁹ CSPA, AquAlliance, and CWIN also provided comments on other provisions of the DOP and related approvals. This discussion does not address issues related to actions that were not approved by the TUCP Order and its various modifications.

4.4.5 May 2 Conditions

CSPA, AquAlliance, and CWIN argued that the change to Delta outflow requirements in May and July to 3,000 cfs would reduce the amount of low-salinity habitat in the Delta needed for longfin and delta smelt, and would reduce migration cues for salmon and steelhead. CSPA, AquAlliance, and CWIN further argued that movement of the compliance point for the western Delta salinity objective from Emmaton to Threemile Slough would increase Delta salinities and allow reductions in Delta outflows which would negatively affect smelt, salmon, and steelhead.²⁰

The Board's consideration of whether the effects of the changes on fish and wildlife were reasonable takes into consideration the existing drought conditions, the needs of water users, and information regarding the effects on fish and wildlife. As with the earlier changes, the changes approved in the May 2 TUCP Order were made to preserve storage in upstream reservoirs for temperature control, salinity control and other purposes this year and into next year. The State Water Board appreciates that there were impacts to fish and wildlife, but those impacts were largely due to the drought itself. In addition, as discussed above, the impacts to fish and wildlife might have been even more severe if storage were not conserved to provide minimal flows and temperature protection later this year and next. The Board concludes these effects are not unreasonable given the tradeoffs in this third year of a drought with the potential for a continuation of the drought into the future.

4.5 The Remaining Arguments in Support of Objections to the Export Limitation Lack Merit.

As stated earlier, a number of water supply contractors objected to the condition of the TUCP Order that limited exports from the Delta. The contractors made a number of legal arguments in support of their contention that the export limitation was invalid. For the reasons discussed below, the contractors' objections to the export limitation may be moot. To the extent that any contractors still object to the export limitation, their arguments in support of their objections lack merit. The contractors' argument that the export limitation would result in injury because it would reduce water deliveries under their contracts is addressed in section 4.3.1, above. Their remaining arguments are addressed below.

²⁰ CSPA et al. also commented concerning the impacts of temporary barriers. Since the barriers were not installed and are not planned to be installed in the near future, this issue is not discussed further.

4.5.1. The Objections May Be Moot

In large part, the objections to the export limitation have been rendered moot by precipitation events in February, March, and April and modifications to the TUCP Order. As discussed above, the February 7, 2014 modification to TUCP Order clarified that when precipitation events occur that enable DWR and Reclamation to meet Decision 1641 Delta outflow and DCC Gate requirements, then the export limitations contained in Decision 1641 are operative, provided that exports greater than 1,500 cfs are limited to natural or abandoned flows. In addition, the March 18, 2014 Order, as modified on April 9, 2014, afforded DWR and Reclamation the flexibility to increase exports up to the limitations contained in Decision 1641 when precipitation events during March and April enabled DWR and Reclamation to maintain the DCC Gates in the closed position and to achieve partial compliance with the Delta outflow requirements contained in Decision 1641. The March 18, 2014 order also relaxed the health and safety restriction to allow water exported pursuant to the TUCP Order to be used for any lawful purpose, provided that basic human health and safety needs are met. Finally, the April 18, 2014 order provided another exception to the 1,500 cfs limit on exports during periods when Delta outflow requirements were not being met. Specifically, consistent with the provisions of Decision 1641, the order allowed the Projects to export up to a level equal to 100 percent of the 3-day average of San Joaquin River flows at Vernalis during the April and May pulse flow period.

Due to precipitation events and the modifications to the TUCP Order described above, the TUCP Order has not limited the Projects' exports to only health and safety levels for much of the effective period of the change. To the extent that exports have been limited to health and safety levels since the February 7 Order, that has mostly been the result of drought conditions and limited storage levels rather than the constraints of the TUCP Order. Accordingly, the objections to the condition limiting exports are at least partly moot. To the extent that the Order and its various modifications limited exports to health and safety levels outside of the exceptions described above, those limits have been appropriate given the dire storage conditions and potential for future dry conditions and the need to use stored water for critical purposes for the remainder of this year and next year.

Some of the CVP and SWP contractors argued that the 1,500 cfs limit on exports was not supported by substantial evidence or was not in the public interest because it did not take into account the contractors' water needs during the drought, and was not based on the need to protect listed fish species. The contractors argued that the Board should remove the 1,500 cfs

limit and allow the Projects to take every opportunity to export water in order to mitigate the impacts of the drought south of the Delta. Conversely, environmental groups, argued that the export limit was not stringent enough in light of the need for water to protect fish and wildlife in the Delta, and the Northern California Water Association argued that the export limit was not stringent enough to satisfy the demands of water users upstream of the Delta.

As stated earlier, the original 1,500 cfs limit on exports, which has since been modified, was based on the minimum amount of water needed to meet health and safety needs as identified in the TUCP. Requiring DWR and Reclamation to adhere to this limitation as a condition of approval of the TUCP reflected the Executive Director's concurrence with DWR and Reclamation's apparent recognition that Delta exports should be limited during periods when Delta outflow and DCC Gate requirements are not being met because diverting water from the Delta can adversely affect fish and wildlife. Put another way, the Executive Director's findings that the changes to Delta outflow and DCC Gate requirements would be in the public interest and would not unreasonably affect fish and wildlife were predicated in part on the assumption that exports from the Delta would be limited as proposed in the TUCP. Contrary to the arguments summarized above, these findings were based on a reasonable balancing of competing demands for limited water resources during critically dry conditions, and were supported by substantial evidence in the administrative record. Specifically, the record includes evidence of the need for Project exports for health and safety and other purposes; the impacts of Project exports on fish and wildlife; the potential impacts on fish and wildlife of the temporary urgency changes; and the need for the changes to conserve scarce water supplies needed for consumptive uses, water quality control, and fish and wildlife. Similarly, the subsequent modifications to the export limitation contained in the TUCP Order, which allowed for increased exports during periods when elevated natural flows improved environmental conditions in the Delta, were based on a reasonable balancing of competing demands, and the Executive Director's findings in support of those modifications were also supported by substantial evidence.²¹

²¹ In addition to the argument described above, SLDMWA also argued that condition 2 of the February 7, 2014 TUCP Order should be deleted because condition 2 was not supported by substantial evidence or in the public interest. Condition 2 afforded the Projects the flexibility to increase exports when precipitation events during February, March and April enabled DWR and Reclamation to close the DCC Gates and achieve compliance with the Delta outflow requirements contained in Decision 1641. SLDMWA argued that condition 2 was inconsistent with the State Water Board's finding that there was an urgent need to relax the requirements to meet the DCC Gate Objective and the Delta Outflow Objectives in order to conserve water supplies. The SWC objected to condition 2 for similar reasons.

4.5.2 The TUCP Order Is Consistent with Federal Reclamation Law

Some of the contractors argued that limiting exports to health and safety needs is inconsistent with federal law governing the operation of the CVP, which requires the CVP to be used to satisfy multiple purposes, including irrigation and maintaining habitat within wildlife refuges.

As stated above, the TUCP Order has been modified to allow exports to be used for any lawful purpose, provided that basic human health and safety needs are met. Moreover, to the extent that the TUCP Order still limits exports for purposes other than health and safety needs, the TUCP is not inconsistent with federal law. Section 8 of the Reclamation Act of 1902 requires the CVP to be operated in accordance with state water right law, unless state law is inconsistent with a clear Congressional directive. (*California v. United States* (1978) 438 U.S. 645, 674-678.) In this case, the condition limiting exports to health and safety needs during a narrow and temporary set of circumstances during a drought emergency was not inconsistent with the general federal directive to operate the CVP to supply water for multiple purposes. That the export limitations are not inconsistent with federal reclamation law is evidenced by the fact that Reclamation's 2014 Water Plan for the CVP also prioritizes meeting public health and safety needs in response to the drought. (Mid-Pacific Region, Bureau of Reclamation, U.S. Dept. of Interior, Central Valley Project, Water Plan 2014 (Feb. 3, 2014) p. 15.)

4.5.3 A Definition of "Health and Safety" Is Not Required

A number of objectors called for a definition of the term "health and safety" as used in the export limitation. In addition, some objectors argued that the term should be defined to include the use of water for purposes of irrigation in light of the adverse economic and social effects of reducing the amount of water available for irrigation.

The TUCP Order required DWR and Reclamation to refine what export amounts and deliveries were required to maintain health and safety, and to provide that information to the State Water Board by February 14, 2014. In response, DWR and Reclamation submitted a report dated February 14, 2014, and an update dated April 8, 2014. The report and update provided

These objections lack merit because they are predicated on the incorrect assumption that the TUCP Order required DWR and Reclamation to operate the Projects in accordance with condition 2. Instead, condition 2 was optional, and afforded DWR and Reclamation additional flexibility to take advantage of precipitation events by increasing exports during periods when elevated natural flows enabled DWR and Reclamation to meet D-1641 requirements temporarily and increase exports without releasing water from upstream storage. To the extent that the contractors' position is that no limits should have been imposed on exports, we disagree that allowing unrestricted exports during periods when Delta water quality requirements are not being met would strike the appropriate balance between competing demands.

information concerning the amount of water that had been exported to meet health and safety needs, and the basis for projected future estimates of health and safety needs. In light of the information provided by DWR and Reclamation, and the fact that the TUCP Order has been modified to allow exports for any lawful purpose, provided that health and safety needs are met, a more detailed or expansive definition of the term “health and safety” is not warranted for purposes of interpreting and implementing the TUCP Order.

4.5.4 The Export Limit Is Consistent with the Rules of Water Right Priority

Friant argued that the TUCP Order does not respect water right priorities because it limits CVP pumping, but did not indicate that water right holders junior to Reclamation had been curtailed. Friant is correct that, as a general rule, appropriative water right holders must curtail their diversions of natural and abandoned flows in order of priority to the extent that their collective demand exceeds available supply. The export limit contained in the TUCP Order, however, does not constitute a curtailment of CVP water rights based on a lack of water availability. Rather, the export limit is a valid condition of the Executive Director’s approval of the changes to CVP water rights requested by Reclamation, as discussed in section 4.3.1, above, and section 4.6.5, below. Accordingly, whether any junior diverters had been curtailed at the time when the TUCP Order was issued is irrelevant.

Friant also argued that the TUCP Order violates water right priorities because it purported to approve DWR and Reclamation’s April 8, 2014 DOP, and the DOP violates water right priorities because: (1) it provides that DWR and Reclamation will split water exported from the Delta, even though Reclamation’s water rights are senior to DWR’s rights; and (2) it purports to allow water to be delivered to CVP wildlife refuges before the senior water rights of the Exchange Contractors et al. have been fully satisfied. Friant’s position is that Reclamation must provide to the Exchange Contractors et al. all of the substitute CVP supply to which they are entitled under their exchange contract with Reclamation before Reclamation may provide any water to wildlife refuges pursuant to their CVP contracts. As Friant explained in its petition for reconsideration, if the Exchange Contractors et al. do not receive all of the substitute supply to which they are entitled from the Delta through the Delta-Mendota Canal, they may call for water to be released from Friant Dam on the San Joaquin River. According to Friant, this will deprive Friant’s member agencies of all of their CVP water supply.

Friant's argument that the TUCP Order violates water right priorities because the TUCP Order purported to approve the DOP lacks merit for the simple reason that the TUCP Order did not in fact approve the DOP. The orders modifying the TUCP Order that were issued after DWR and Reclamation developed their DOP made some changes to Decision 1641 requirements consistent with the DOP, but those orders did not approve the DOP itself. Moreover, the TUCP Order does not specify how exports are to be divided between DWR and Reclamation, or address the relative priorities of CVP wildlife refuges and the Exchange Contractors et al. For this reason, it is unnecessary to address the merits of Friant's arguments concerning the consistency of the DOP with the water right priority system in this order.

4.6 Other Topics

4.6.1 The TUCP Order Is Consistent with the Board's Authority under Water Code Section 1435

Several arguments were raised concerning the State Water Board's authority to approve the TUCP, including the argument that Water Code section 1435 is not a mechanism to make the types of changes that were approved, that the changes constituted improper changes to the Bay-Delta Plan, and that the changes constituted an impermissible failure to fully implement the Bay-Delta Plan. These arguments lack merit for the reasons explained below.

As set forth in section 2.5, above, Water Code section 1435 provides that "[a]ny permittee or licensee who has urgent need to change a point of diversion, place of use, or purpose of use from that specified in the permit or license may petition for, and the board may issue, a conditional, temporary change order . . ." SJTA argued, based on the language of this section, that temporary urgency change petitions only may be filed for changes to the point of diversion, place of use, or purpose of use of a permit, and not for changes to permit conditions, such as the changes to Decision 1641 requirements that DWR and Reclamation sought pursuant to the TUCP. SJTA argued further that changes to the conditions of a water right permit only may be made by the Board to the extent that the Board has reserved authority to change the conditions of the permit pursuant to Water Code section 1394.

In Order WR 2009-0061, the State Water Board addressed a similar argument concerning the proper interpretation of Water Code sections 1700-1705, which govern petitions for non-urgent changes to applications, permits, or licenses. In that case, the Board determined that the City of

Santa Cruz could petition to change its permits and license to allow direct diversions in addition to diversions to storage, provided that the changes did not constitute the initiation of a new right. (Order WR 2009-0061, pp. 5-17.) Like Water Code section 1435, sections 1700-1705 explicitly authorize water right holders to petition for changes in point of diversion, place of use, or purpose of use. On this basis, a protestant had argued that Water Code sections 1700-1705 do not authorize water right holders to petition for changes other than changes in point of diversion, place of use, or purpose of use.

In rejecting this argument, the Board pointed out that both Water Code section 1525, subdivision (b), which requires filing fees for change petitions, and section 791, subdivision (e) of the Board's regulations, which specifies procedures for processing change petitions, expressly recognize that petitions may be filed for changes in permit or license conditions other than changes to the authorized point of diversion, place of use, or purpose of use. (Order WR 2009-0061, pp. 13-14.) In addition, the Board explained that it would not make sense to interpret the Water Code to authorize voluntary petitions to change the authorized point of diversion, place of use, or purpose of use of an appropriative right, which are fundamental attributes of the right, but to preclude voluntary petitions to change other, less fundamental conditions of the right. (*Id.*, p. 16.) Finally, the Board explained at length how interpreting the Water Code to preclude voluntary petitions for changes other than changes in point of diversion, place of use, or purpose of use would interfere with the Board's ability to administer water rights effectively, and create unnecessary obstacles to changes in furtherance of important public policies, including improving water efficiency, protecting public trust resources, and maximizing the reasonable and beneficial use of California's water resources. (*Id.* at pp. 14-16.)

The Board's reasoning in Order WR 2009-0061 applies equally in this case. Like Water Code sections 1700-1705, section 1435 should be not interpreted to preclude voluntary petitions for changes to the conditions of a permit or license. Water Code section 1394 provides no support for a different interpretation. That section authorizes the Board to reserve jurisdiction to make changes to the conditions of a permit if sufficient information is not available to properly condition the permit, or if necessary to coordinate the conditions of multiple permits for the same project. The Board's authority to reserve jurisdiction to change permit conditions pursuant to section 1394 does not somehow operate to preclude the Board from changing permit conditions in response to voluntary petitions filed pursuant to other provisions of the Water Code, including section 1435.

A second argument concerning the Board's authority to adopt the TUCP Order was raised by some of the CVP water supply contractors, who argued that the change to the export limit made by the TUCP Order constituted a change to the Bay-Delta Plan, which exceeded the scope of the State Water Board's authority under Water Code section 1435. Similarly, some environmental organizations argued that the changes to salinity requirements constituted an impermissible relaxation of federal water quality criteria.

Contrary to these arguments, the TUCP Order changed some of the conditions of the water right permits and license for the Projects, which otherwise would have required DWR and Reclamation to meet certain water quality objectives contained in the Bay-Delta Plan. The TUCP Order did not change the water quality objectives themselves, or federal water quality criteria. As explained above, the changes to the conditions of the permits and license for the Projects were consistent with the State Water Board's authority under Water Code section 1435.²²

A third argument concerning the Board's authority, also advanced by SJTA, was that relaxing Decision 1641 requirements constituted a failure to fully implement the Bay-Delta Plan in contravention of Water Code section 13247 and the holding in the *State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 674.

The Court of Appeal's opinion in the *State Water Resources Control Board Cases* involved numerous cases challenging Decision 1641. In large part, the Court upheld Decision 1641, but the Court also held that the Board erred when it failed to fully implement the San Joaquin River pulse flow objective and certain southern Delta salinity objectives. (*Id.* at pp. 724-735.) The Court's holding in the *State Water Resources Control Board Cases* was based on Water Code section 13247, which provides that state agencies "in carrying out activities which may affect water quality, shall comply with water quality control plans approved or adopted by the [State Water Board], unless otherwise directed or authorized by statute" Based on this section, the Court faulted Decision 1641 for failing to fully implement the San Joaquin River pulse flow and southern Delta salinity objectives because the program of implementation contained in the

²² The Exchange Contractors et al. also argued that the State Water Board does not have authority to restrict the use of CVP water as part of the proceeding on the TUCP. The Exchange Contractors argued that by limiting exports, the State Water Board has assumed liability that should be borne by the USFWS and NMFS for taking water without compensation. As discussed earlier, however, the export limitation was a valid condition of the Executive Director's approval of the TUCP. In addition, the Exchange Contractors did not cite any authority that supports their contention that imposition of this condition of approval constitutes a compensable taking of water.

Bay-Delta Plan committed to achieving those objectives by assigning responsibility for meeting them to water right holders in the Delta watershed, and the water right proceeding that culminated in the adoption of Decision 1641 had been conducted for the express purpose of allocating responsibility for meeting those objectives. (*State Water Resources Control Board Cases, supra*, 136 Cal.App.4th at pp.729-730.)

SJTA is correct that, consistent with the Court's interpretation of Water Code section 13247, the State Water Board would ordinarily be precluded from relaxing water right requirements that ensure that the water quality objectives in the Bay-Delta Plan will be fully implemented as specified in the plan. In response to the drought emergency, however, Governor Brown suspended section 13247 as applied to certain actions, including the changes to Decision 1641 requirements that were approved by the TUCP Order, pursuant to the California Emergency Services Act (Gov. Code, § 8550 et seq.). Accordingly, section 13247 does not apply to the TUCP Order, and the holding in the *State Water Resources Control Board Cases* is inapplicable as a result.

4.6.2 The Executive Director Had Delegated Authority to Act on the TUCP

The Exchange Contractors et al. and SJTA contended that the TUCP Order is invalid because the Executive Director did not have delegated authority to act on the TUCP. Contrary to this contention, however, State Water Board Resolution 2012-0029 delegated authority to the Executive Director to act on the TUCP, as explained below.

Section 2.2 of Resolution 2012-0029 delegates to the Board Members individually the authority to take action on a temporary urgency change petition or request for renewal. The delegation under section 2.2 expressly includes the authority to hold a hearing on a petition, and to make the findings required by the Water Code and CEQA as conditions precedent to approval. (State Water Board Resolution 2012-0029, §§ 2.2.1-2.2.3.) In addition, section 4.4.1 of Resolution 2012-0029 delegates to the Deputy Director for Water Rights the authority to take initial action on a temporary urgency change petition or request for renewal. In the event that objections to the petition are received, however, section 4.4.1 directs the Deputy Director to "refer the matter to the Executive Director for action under section 2.2." Read together, sections 2.2 and 4.4.1 delegate to the Executive Director the authority to act on a temporary urgency change petition or request for renewal if objections to the petition or request are received, and to hold a hearing on the petition or request, if necessary.

The Exchange Contractors et al. and SJTA argued that the Executive Director is not authorized to take action on a petition that has been referred to the Executive Director pursuant to section 4.4.1 of Resolution 2012-0029. According to the Exchange Contractors et al. and SJTA, only an individual Board Member or the full Board may take action on such a petition because section 2.2 of the resolution does not explicitly delegate authority to the Executive Director to take action on temporary, urgency change petitions. This is not a reasonable interpretation of the resolution as a whole, however, because it ignores the express language of section 4.4.1, which directs the Deputy Director to refer a petition to the Executive Director “for action” if objections are received.

Independent of Resolution 2012-0029, the State Water Board has delegated authority to the Executive Director under Resolution 2012-0061. Resolution 2012-0061 delegates to the Executive Directors authority to conduct and supervise the activities of the State Water Board, with specified exceptions. Approving temporary change petitions is not among the exceptions. Hence, action on temporary urgency change petitions is within the delegation to the Executive Director made by Resolution 2012-0029.

Moreover, an agency’s subsequent approval or ratification of an act delegated to a subordinate validates the act. (*California Sch. Employees Assn. v. Personnel Commission* (1970) 3 Cal.3d 139, 145.) Accordingly, assuming for the sake of argument that the Executive Director did not have delegated authority to act on the TUCP, this order affirming the Executive Director’s Order, and subsequent modifications thereto, serves to ratify the Executive Director’s actions and confirms that the Executive Director has delegated authority to take action on the TUCP in the future.

4.6.3 Issues Pertaining to the Real-Time Drought Operations Management Team

Several interested persons commented on the RTDOMT required to be convened by the TUCP Order. At least one individual raised questions about the RTDOMT’s decision-making process. Other commenters asked for a more open RTDOMT process with wider participation, including the participation of environmental groups and municipalities who might raise scientific issues that might not be identified by the core group. In their petition for reconsideration, CSPA, AquAlliance, and CWIN argued that Board staff participation in the RTDOMT meetings should be subject to ex parte communication restrictions; that DWR and Reclamation should post comprehensive updates of the actions of the RTDOMT no less than once a week; and the

Board should require the RTDOMT to provide a detailed operations update at the beginning of each Board meeting. The Cities of Roseville and Folsom and the San Juan Water District commented that the RTDOMT decisions do not appropriately consider their communities' public health and safety. They commented that the RTDOMT appeared to take action to increase releases from Folsom Reservoir without first discussing with potentially affected water users, even though the region has an active discussion group with RTDOMT member agencies through the American River Water Forum.

Notwithstanding these arguments, both the membership and the decision-making process of the RTDOMT were appropriate and proper in light of the exigencies of the drought. Preliminarily, it is important to clarify that the RTDOMT is not a decision-making body. Past decisions to modify the TUCP Order that were necessary to allow real-time operation of the SWP and the CVP were made by the Executive Director, in consultation with the relevant agencies (including DWR, Reclamation and the fisheries agencies), not by RTDOMT. Likewise, any future decisions related to the TUCP will be made by the Board or the Executive Director, in consultation with the RTDOMT.

In light of the need to be able to make decisions quickly as conditions change, the RTDOMT team members may need to provide input to the Executive Director or his representative on an ad hoc basis, and it is not feasible to establish a more formal process that might allow for greater public participation. To respond to the concerns raised, however, new or revised conditions shall be added to the TUCP Order which will require: earlier reporting of actual operations; ensure that information is available to the fisheries agencies, the State Water Board and the public to understand and consider the effects of real-time operations on fish and wildlife and other beneficial uses of water; the preparation of a drought contingency plan in the event of continued drought conditions for which the public may comment; and advanced planning for and consideration of concerns related to protection of Sacramento River winter-run Chinook salmon and other fisheries needs, including spring- and fall-run Chinook salmon.

4.6.4 Timely Response to Objections and Protests

Objectors stated that the Board failed to provide prompt consideration to the objections and protests that have been received on the original order and its seven modifications that were approved from January through May 2014. Objectors stated it was improper for the Board to not respond to objections and protests while some of the approved actions were being

completed, which rendered those issues moot; and to not respond to outstanding issues that are not yet moot.

Water Code section 1438, subdivision (e) requires the Board to give prompt consideration to any objection to a temporary, urgency change. As stated earlier, although a formal response to objections to the TUCP Order was not provided until now, the Executive Director reviewed and considered incoming objections and comments on a continual basis, and modifications to the TUCP Order were made where appropriate. Those modifications included: (1) modifications to the export constraints on February 7, March 18, and April 18 to allow for additional diversions to improve water supply conditions for refuges and water users south of the Delta; (2) addition of conditions on March 18 and May 2 that required DWR and Reclamation to bypass natural and abandoned flows under certain conditions to ensure no injury to other lawful water users and reduce the effects of the changes on water quality and fish and wildlife; (3) addition of a commitment in the April 9 modification to monitor storage levels to ensure that water is being maintained in storage to meet critical water needs into the future; and (4) addition on May 2 of reporting requirements to ensure that information is timely received to inform real-time decisions. These timely modifications to the Order rendered many objections and comments moot.

4.6.5 An Evidentiary Hearing on the TUCP Was Not Required

Petitioners (CSPA, the Exchange Contractors et al., Friant, and WCWD et al.,) and numerous objectors called for hearings on various issues, including definition of health and safety, balancing of carryover storage with the needs of senior water right holders, potential violations of water supply contracts, and to submit evidence concerning the findings included in the Orders. For example, both the Exchange Contractors et al. and WCWD et al. argued that due process requirements under the federal and state constitutions compelled the Board to hold an evidentiary hearing before imposing conditions of approval that restricted the use of Project water. Alternatively, SJTA argued that an evidentiary hearing was required to develop a record adequate to support the findings necessary to approve the TUCP. As explained below, the decision whether to hold an evidentiary hearing on the TUCP was not required by statute or by the federal and state Constitutions, and under the circumstances it was appropriate not to hold an evidentiary hearing.

Consistent with the plain language of the Water Code, an evidentiary hearing was discretionary, not mandatory. Water Code section 1437 provides that, before making the findings necessary to approve a temporary urgency change petition, the Board “shall review available records, files, and decisions which relate to the rights of other legal users of water, consult with representatives of [DFW], and make a field investigation if the investigation is necessary or desirable in the opinion of the board.” Section 1437 does not direct the Board to hold an evidentiary hearing. Similarly, Water Code section 1438 provides that the Board must give prompt consideration to any objection, and “*may* hold a hearing thereon, after notice to all interested persons.” (Wat. Code, § 1438, subd. (e), emphasis added.) In short, the Water Code affords the Board discretion to decide whether to hold an evidentiary hearing on a temporary urgency change petition.

Likewise, an evidentiary hearing was not required as a matter of due process. The federal and state Constitutions provide that no person shall be deprived of life, liberty, or property without due process of law. (U.S. Const., 5th & 14th Amends.; Cal. Const., art. I, §§ 7, 15.) Due process requirements are flexible, and do not necessarily require an evidentiary hearing before depriving a person of a property interest. (*Mathews v. Eldridge* (1976) 424 U.S. 319, 333-335; *Machado v. State Water Resources Control Board* (2001) 90 Cal.App.4th 720, 725-726.) Determining the specific dictates of due process generally requires consideration of three factors: (1) the private interest that will be affected by the government action, (2) the risk of erroneous deprivation of the interest through the procedures used, and the probable value of additional or substitute procedural safeguards, and (3) the government’s interest, including the fiscal and administrative burdens of additional or substitute procedural requirements. (*Mathews v. Eldridge*, *supra*, 424 U.S. at p. 335.) In this case, however, it is unnecessary to evaluate these factors in order to determine whether due process required an evidentiary hearing because no person was deprived of a property interest as a result of the TUCP Order.

The TUCP Order did not deprive DWR, Reclamation or their contractors of a property interest because DWR and Reclamation were not required to operate the Projects in accordance with the TUCP Order. Instead, DWR and Reclamation could have continued to operate the Projects in accordance with Decision 1641 requirements. DWR and Reclamation chose to operate in accordance with the TUCP Order, notwithstanding the export limitations and other conditions of approval, because the changes to Decision 1641 requirements approved by the Order allowed DWR and Reclamation to conserve a significant amount of Project water. (See *General Elec.*

Co. v. Jackson (D.C. Cir. 2010) 610 F.3d 110, 117-119 [administrative order directing company to clean up hazardous waste issued without a hearing did not deprive company of property because company had the option of refusing to comply and forcing the agency to sue in federal court].) In addition, as explained in sections 4.3.1 and 4.5, above, the export limitation is a valid, temporary condition of DWR and Reclamation's permits, and the contractors do not have a protected property interest in more water than DWR and Reclamation can deliver consistent with the limitation. Similarly, although the TUCP Order did not impose any carryover storage requirements, if any such requirements were to be properly imposed as a condition of the TUCP Order they would not invade a legally protected interest. Finally, the TUCP Order did not deprive any third party water right holders of a property interest because the order included conditions of approval designed to ensure that the changes to Decision 1641 requirements would not injure other lawful users of water.

For the foregoing reasons, the Board was not legally required to hold an evidentiary hearing before approving the TUCP or modifying the TUCP Order. Moreover, the decision not to hold an evidentiary hearing was appropriate in this case for three reasons. First, an evidentiary hearing would have taken at least several months, and it was not feasible to hold an evidentiary hearing or hearings and respond appropriately to drought emergency conditions by taking prompt action on the TUCP, and on DWR and Reclamation's subsequent requests to modify the TUCP Order. Second, notice and an opportunity to be heard were provided through notice of the TUCP and an opportunity to submit objections, and through public workshops. Third, sufficient information to support the findings necessary to approve the TUCP was provided through written submittals, including the TUCP and supporting documentation, and through the public workshops on the TUCP. Contrary to SJTA's argument, it was not necessary to hold an evidentiary hearing in order to develop an adequate record.

4.6.6 No Improper Ex Parte Communications Occurred

SJTA argued that State Water Board Chair Felicia Marcus, Board Member Dorene D'Adamo, and the Executive Director, Thomas Howard, should be disqualified from acting on the TUCP because they engaged in ex parte discussions with Reclamation concerning the April 9, 2014 request to change San Joaquin River flow requirements in violation of Government Code sections 11430.10 and 11430.70. SJTA also argued that the Executive Director should be recused because he participated in the development of the DOP, which precluded him from making an impartial and unbiased decision. As discussed below, Government Code sections

11430.10 and 11430.70 do not apply to the proceeding on the TUCP, and no basis exists for disqualification of the Board Members or the Executive Director.

Government Code sections 11430.10 and 11430.70 are part of chapter 4.5 of the Administrative Procedure Act (Gov. Code, § 11400 et seq.) (APA). As a general rule, the APA prohibits ex parte or off-the-record communications between an agency decision-maker and an interested person concerning a substantive or controversial procedural issue in an adjudicative proceeding. (*Id.*, §§ 11430.10, subd. (a), 11430.20, subd. (b), 11430.70, subd. (a).) Normally, the remedy for a violation is disclosure of the communication on the record, but under limited circumstances receipt of an ex parte communication may be grounds for disqualification of the decision-maker. (*Id.*, §§ 11430.50, 11430.60.) In this case, however, the APA's provisions governing ex parte communications do not apply. Chapter 4.5 of the APA applies only to agency decisions "if, under the federal or state Constitution or a federal or state statute, an evidentiary hearing for determination of facts is required for formulation and issuance of the decision." (*Id.*, § 11410.10; see also *Corrales v. Bradstreet* (2007) 153 Cal.App.4th 33, 51-52, 64.) As discussed in section 7.5.5, above, an evidentiary hearing on the TUCP was not required by the federal or state Constitution or by statute, and therefore, chapter 4.5 of the APA's prophylactic prohibition does not apply to this proceeding.

The State Water Board is mindful that due process considerations may call for procedural protections even if they are not required by the APA. Once it is clear that the Board Members will need to decide a quasi-judicial matter not subject to chapter 4.5 of the APA, in an abundance of caution, the Board's practice has been to avoid ex parte communications between interested persons and the Board Members concerning substantive or controversial procedural issues raised in a petition for reconsideration of an underlying order or decision. Consistent with this practice, Board Chair Felicia Marcus and Board Member Dorene D'Adamo have avoided ex parte communications concerning the substantive issues raised in the petitions for reconsideration of the TUCP Order. In March and April of this year, the Board Members participated in several meetings and phone calls with Reclamation and other stakeholders during which an update on the status of the TUCP was provided. But the Board Members ceased participating if any substantive issues were raised. In addition, no petition for reconsideration that raised issues concerning the San Joaquin River flow requirements was pending at the time when these meetings and calls occurred, and it would have been

speculative to assume that such a petition would be filed.²³ In sum, the Board Members' limited communications with Reclamation concerning the TUCP do not provide any support for the conclusion that the Board Members should be disqualified.

Likewise, no basis exists for disqualification of the Executive Director. The Executive Director did not participate in preparation of the DOP as SJTA contends. Instead, the Executive Director provided input on the process that should be followed to effect a change. SJTA and State Water Board staff brought to the Executive Director's attention the fact that Reclamation was not planning to comply with the requirement to meet San Joaquin River flow objectives this year, including the April and May pulse flow objectives. Based on this information, Board staff and the Executive Director informed Reclamation that Reclamation should formally request approval of any proposed changes to San Joaquin River flow requirements. The Executive Director also informed Reclamation that he would not approve a request to eliminate altogether the San Joaquin River flow requirements, including the pulse flow requirements, which resulted in an agreement to provide the reduced base and pulse flows that the Executive Director ultimately approved. This was the extent of the Executive Director's involvement with the issues addressed in the DOP prior to release of the DOP. As a matter of law and State Water Board practice, the prohibition against ex parte communications did not apply to the Executive Director's communications with Reclamation concerning the San Joaquin River flow requirements. Moreover, contrary to SJTA's claim, the Executive Director's communications with Reclamation are not evidence of bias. Rather, his communications demonstrate that he was impartial, and exercised his independent judgment concerning the merits of the changes requested by Reclamation.

4.6.7 The TUCP Order Did Not Violate CEQA

The TUCP Order determined that CEQA had been suspended as applied to action on the TUCP pursuant to the Governor's January 17, 2014 Drought State of Emergency Proclamation. CSPA contended that this determination was incorrect, and the TUCP improperly waived CEQA. Similarly, WCWD contended that the TUCP Order improperly interpreted the scope of the CEQA suspension. As explained below, these contentions lack merit.

²³ On April 28, 2014, NRDC submitted a petition for reconsideration of the April 11, 2014 Order that approved changes to the San Joaquin River flow requirements. Although SJTA objected to the changes, in submittals dated April 17, 2014 and April 21, 2014, SJTA did not file a petition for reconsideration.

As explained in the TUCP Order, the Governor's proclamation concluded that strict compliance with CEQA would "prevent, hinder, or delay the mitigation of the effects of the [drought] emergency." Accordingly, as authorized by the Emergency Services Act, ordering paragraph 9 of the Governor's proclamation suspended CEQA, and the regulations adopted pursuant to it, to the extent that CEQA would otherwise apply to actions necessary to carry out the directives set forth in ordering paragraphs 5 and 8 of the proclamation. Paragraph 8 directed the State Water Board to consider modifications to "requirements for reservoir releases or diversion limitations, where existing requirements were established to implement a water quality control plan. These changes would enable water to be conserved upstream later in the year to protect cold water pools for salmon and steelhead, maintain water supply, and improve water quality."

Action on the TUCP was consistent with the directive set forth in ordering paragraph 8 because the order modified requirements for reservoir releases and diversion limits that had been imposed on DWR and Reclamation pursuant to Decision 1641 in order to implement the Bay-Delta Plan. Although the TUCP Order did not directly modify requirements for reservoir releases, the order modified requirements to meet flow-dependent water quality objectives, which in effect modified the releases from Project reservoirs that otherwise would have been required to meet the objectives. The TUCP Order also modified exports limits, which constitute diversion limitations. As contemplated by paragraph 8, these modifications enabled water to be conserved in upstream reservoirs for use later in the year to protect fishery resources, maintain water supplies, and improve water quality. For these reasons, the TUCP Order correctly concluded that CEQA had been suspended as applied to action on the TUCP.

CSPA's contention that the TUCP Order improperly waived CEQA appears to have been based on the argument that the drought does not constitute an emergency as that term is defined for purposes of the CEQA exemption for emergency projects. The TUCP Order did not determine, however, that approval of the TUCP was exempt from CEQA pursuant to the CEQA emergency exemption. Rather, the TUCP Order determined that CEQA had been suspended as applied to action on the TUCP pursuant to the Governor's proclamation and the Emergency Services Act. Accordingly, it is unnecessary to address the issue of whether the drought constitutes an emergency as defined by CEQA.

For its part, WWCD argued that the CEQA suspension applied only to modifications to reservoir releases or diversion limitations, and did not extend to any carry-over storage requirements or

other limits on the use of the water conserved as a result of the TUCP that might interfere with WWCD's water supply agreements. Contrary to this argument, the CEQA suspension necessarily extended to the whole of the TUCP Order, including any valid conditions of approval. WWCD's interpretation that the suspension applied only to the approval of the TUCP, and not to any necessary conditions of approval, would defeat the purpose of the CEQA suspension, and is not a reasonable interpretation of its scope.

5.0 CONCLUSION

For the forgoing reasons, the State Water Board concludes that the Executive Director's January 31, 2014 TUCP Order and subsequent modifications to that Order were consistent with applicable law and supported by substantial evidence. Accordingly, the petitions to reconsider the Executive Director's TUCP Orders are denied. However, the Board does find that modifications to the Executive Director's May 2 TUCP Order are appropriate to ensure better coordination, planning and transparency for the remainder of the drought. Specifically, modifications to the Order were made to: require earlier reporting of actual operations; ensure that information is available to the fisheries agencies, the State Water Board and the public to understand and consider the effects of real-time operations on fish and wildlife and other beneficial uses of water; require the preparation of a drought contingency plan in the event of continued drought conditions; and require advanced planning for and consideration of concerns related to protection of Sacramento River winter-run Chinook salmon and other fisheries needs, including spring- and fall-run Chinook salmon.

ORDER

IT IS HEREBY ORDERED that, except as modified below, the Executive Director's January 31, 2014 TUCP Order and subsequent modifications to that Order are affirmed, and the petitions for reconsideration are denied. For convenience, the entire ordering section of the Executive Director's May 2, 2014 Order is reproduced below. The modifications to the Order are indicated in **~~bold strikethrough~~**-(deletions) and **bold underline** (additions).

NOW, THEREFORE, IT IS ORDERED that the petition for temporary urgency change in permit and license conditions under Permits 16478, 16479, 16481, 16482 and 16483 (Applications 5630, 14443, 14445A, 17512 and 17514A, respectively) of the Department of Water Resources

(DWR) for the State Water Project (SWP) and License 1986 and Permits 11315, 11316, 11885, 11886, 11887, 11967, 11968, 11969, 11970, 11971, 11972, 11973, 12364, 12721, 12722, 12723, 12725, 12726, 12727, 12860, 15735, 16597, 20245, and 16600 (Applications 23, 234, 1465, 5638, 13370, 13371, 5628, 15374, 15375, 15376, 16767, 16768, 17374, 17376, 5626, 9363, 9364, 9366, 9367, 9368, 15764, 22316, 14858A, 14858B, and 19304, respectively) of the United States Bureau of Reclamation (Reclamation) for the Central Valley Project (CVP); is approved subject to the following terms and conditions. All other terms and conditions of the subject license and permits, including those added by the State Water Resources Control Board (State Water Board) in Revised Decision 1641 (Decision 1641) shall remain in effect. This Order shall be effective until January 27, 2015.

1. Except as otherwise provided in condition 2, below, for a period not to exceed 360 days or until such time as this Order is amended or rescinded based on changed circumstances, the requirements of Decision 1641 for DWR and Reclamation (or Petitioners) to meet specified water quality objectives are amended as follows:
 - a. The minimum Delta outflow levels specified in Table 3 are modified as follows: the minimum Net Delta outflow Index (NDOI) described in Figure 3 of Decision 1641 during the months of February, March, April, May and July shall be no less than 3,000 cubic-feet per second (cfs) on a monthly average. The 7-day running average shall not be less than 1,000 cfs below the monthly average. In addition to base Delta outflows, pursuant to this Order, a higher pulse flow may also be required through the Real-Time Drought Operations Management Process described below.
 - b. The maximum Export Limits included in Table 3 are modified as follows: With the exception of the San Joaquin River pulse flow period, during the effective period of this Order, when the Decision 1641 Delta outflow requirements, DCC Gate closure requirements, Sacramento River flow and electric conductivity (EC) requirements are not being met the combined maximum SWP and CVP export rate for SWP and CVP contractors at the Harvey O. Banks and C.W. "Bill" Jones pumping plants shall be no greater than 1,500 cfs on a 3-day running average. During the May San Joaquin River pulse flow period, exports are permitted up to 100 percent of the 3-day running average of San Joaquin River flows at Vernalis

or 1,500 cfs, whichever is greater, provided DWR and Reclamation are complying with Decision 1641 requirements as modified by this Order. The use of the water exported pursuant this ordering provision 1.b, including previous versions of this ordering provision, is conditioned on DWR and Reclamation following the process described in their March 18, 2014 letter. These limitations do not apply to water transfers under non-SWP or CVP water rights or between SWP and CVP contractors. Based on additional information or changed circumstances, the export limits imposed pursuant to this Order may be modified through the Real-Time Drought Operations Management Process described below.

- c. The Delta Cross Channel (DCC) Gate Closure requirements included in Table 3 are modified as follows: the DCC gates may be opened from February 1 through May 20 as necessary to preserve limited storage in upstream reservoirs and reduce infiltration of high salinity water into the Delta while reducing impacts on migrating Chinook salmon. Requirements for closure of the DCC gates during March through May 20 shall be determined through the Real-Time Drought Operations Management Process described below.
- d. Table 3 San Joaquin River flow requirements at Airport Way Bridge, Vernalis, from the date of this order through June are modified as follows:
 - From the date of this Order to the start of the pulse flow period, flows shall be no less than 700 cfs, on a 3-day running average.
 - The 31-day pulse flow period shall consist of an overall pulse flow volume equivalent to 16-days of flow at 3,300 cfs, and 15 days of flow at 1,500 cfs. The start date and flow schedule for the overall pulse flow volume of water 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).
 - From the end of the pulse flow period through May 31, an average flow of 500 cfs shall be maintained.

- For the month of June, flows shall be maintained on the Stanislaus River to meet the NMFS Biological Opinion requirements and water right permit requirements for dissolved oxygen on the Stanislaus River and water right permit salinity requirements on the San Joaquin River at Vernalis.
- e. The Table 3 Sacramento River at Rio Vista flow requirements from September through November 15 of 2014 are modified as follows: flows shall be no less than 2,000 cfs on a monthly average. The 7-day running average shall not be less than 1,500 cfs.
 - f. The Table 2 Western Delta Sacramento River at Emmaton EC requirement is modified as follows: the compliance location is moved from Emmaton on the Sacramento River to Threemile Slough on the Sacramento River.
2. During the effective period of this Order, if precipitation events occur that enable DWR and Reclamation to fully comply with the Delta outflow, DCC Gate Closure, Rio Vista flow and Sacramento River at Emmaton EC requirements contained in Decision 1641, then Decision 1641 requirements shall be operative, except that any SWP and CVP exports greater than 1500 cfs shall be limited to natural or abandoned flow, or transfers as specified in condition 1b.
 3. DWR and Reclamation shall convene a Real-Time Drought Operations Management Team with designated representatives from DWR, Reclamation, the State Water Board, and the fisheries agencies. The Real-Time Drought Operations Management Team shall be convened to discuss potential changes to SWP and CVP operations to meet health and safety requirements and to reasonably protect all beneficial uses of water. The team shall meet on a regular basis, and no less than weekly, to discuss current conditions and may be combined with the existing Water Operations Management Team as appropriate. The State Water Board representative shall be designated by the Executive Director of the State Water Board and shall be authorized to make real-time operational decisions to modify requirements to meet pulse flows associated with the modification to the Delta outflow objective described above, Export Limits, DCC gate closures, and the associated requirements of this Order. If the State Water Board approves any additional temporary urgency changes pursuant to the temporary urgency

change petition that is the subject of this Order, or otherwise modifies this Order, the State Water Board will provide notice and an opportunity for interested persons to comment or object. Based on public comments or objections, further changes may be made to this Order. Information concerning changes to this Order will be posted on the State Water Board's website within 24 hours.

4. DWR and Reclamation shall calculate and maintain a record of the amount of water conserved through the changes authorized by this Order and shall submit such records on a monthly basis to the State Water Board ~~by the end~~ **within 20 working days after the first day** of the following month. The water conserved shall be maintained in storage to protect flows for fisheries, used to maintain water supplies, or used to improve water quality. The use of such water shall be determined through the Real-Time Drought Operations Management Team Process described above.
5. DWR and Reclamation shall develop monthly water balance estimates indicating actual and proposed operations through the end of the water year. Specifically, actual and projected inflows, north of Delta contract deliveries, other channel depletions, exports, and Delta outflows shall be identified. The water balance shall be posted on DWR's website and updated as necessary based on changed conditions. Monthly updates shall be posted and provided to the State Water Board ~~by the end~~ **within 20 working days after the first day** of the following month.
6. **DWR and Reclamation shall consult with the fisheries agencies and the State Water Board on a weekly basis regarding operational decisions that may affect listed species and other beneficial uses of water, including fall-run Chinook salmon.** DWR and Reclamation shall conduct necessary modeling and monitoring **and prepare other necessary technical information** to inform operational decisions. **DWR and Reclamation shall make available, upon request of State Water Board or fisheries agency staff, technical information to inform these operational decisions, including planned operations, temperature models, modeling and monitoring information, water quality modeling and monitoring information, and information about potential impacts of operational changes on other water users. DWR and Reclamation shall report to the Board monthly at its Board meetings on their**

drought operations and the information discussed above beginning with the first October Board meeting.

7. While DWR and Reclamation are operating under the changes approved by this order, they shall bypass natural and abandoned flows in order to prevent injury to other lawful users of water.
8. This Order may be further modified by the Executive Director based on additional public input or changed circumstances.
9. 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, the Petitioners shall obtain authorization for an incidental take permit prior to construction or operation of the project. Petitioners shall be responsible for meeting all requirements of the applicable Endangered Species Act for the temporary urgency change authorized under this Order.
10. Petitioners shall immediately notify the Executive Director of the State Water Board if any significant change in conditions occurs that warrants reconsideration of this Order.
- 11. In consultation with the fisheries agencies, DWR and Reclamation shall develop a water year 2015 drought contingency plan for operations in the Delta and the associated Project reservoirs in the event that water supplies remain inadequate to satisfy the Projects' water right permit and license requirements and other uses. The drought contingency plan shall identify the biological and other justifications for the plan. The drought contingency plan shall also identify planned minimum monthly flow and storage conditions that consider Delta salinity control, fishery protection, and supplies for municipal water users related to projected flow and storage conditions using 50, 90, and 99 percent exceedance probabilities for assumed hydrology, and any other information that may be requested by the Executive Director or his designee. The plan for the beginning**

of the water year through January 15, 2015, shall be submitted to the Executive Director by October 15, 2014. The plan for the remainder of the water year after January 15, 2015, shall be submitted to the Executive Director by January 15, 2015. The plan shall be updated as necessary based on changed circumstances. Following submittal, the plans and any updates to the plans will be posted on the State Water Board's website for public review. The Executive Director will consider public comments that may be submitted when determining whether to take any action based on the plan or whether to request additional information.

12. Pursuant to the requirements of this Order and State Water Board Order WR 90-5, Reclamation, in consultation with the fisheries agencies, shall take the following actions:

- a. Reclamation shall immediately identify and evaluate all available options for reducing temperature and redd dewatering impacts to winter-run Chinook salmon on the Sacramento River for the remainder of this fall. Reclamation shall immediately make available technical information requested by the Executive Director or his designee through the Real Time Drought Operations Management Team process to evaluate the feasibility of various options. Reclamation shall report monthly to the State Water Board during its Board meeting on actions that have been or will be taken to reduce impacts to winter-run Chinook salmon, beginning with the first October Board meeting and continuing through the drought.
- b. Reclamation, in coordination with the fisheries agencies, shall prepare by January 15, 2015, a temperature management plan for the Sacramento River for the 2015 winter-run Chinook salmon spawning and rearing period that considers other fisheries needs, including spring- and fall-run Chinook salmon. That plan shall identify actions that will be taken throughout the year to manage storage, cold water pool and flow conditions under different potential hydrologic conditions to protect winter-run Chinook salmon and other salmon runs in the Sacramento River from redd dewatering, stranding, and temperature impacts. Reclamation shall update the plan as conditions change or upon the request of the fisheries agencies

or State Water Board staff. For the remainder of the drought, Reclamation shall meet weekly with the Sacramento River Temperature Task Group (SRTTG) to discuss operations and options for reducing or avoiding redd dewatering, stranding and temperature impacts to winter-run Chinook salmon. Reclamation shall confer on recommendations from the SRTTG at the Real Time Drought Operations Management Team meeting and other applicable CVP and SWP operational decision-making meetings.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of an order duly adopted at a meeting of the State Water Resources Control Board held on September 24, 2014.

AYE: Chair Felicia Marcus
Vice Chair Frances Spivy-Weber
Board Member Tam M. Doduc
Board Member Steven Moore
Board Member Dorene D'Adamo

NAY: None

ABSENT: None

ABSTAIN: None



Jeanine Townsend
Clerk to the Board

ETc Table for Irrigation Scheduling and Design
 Zone 12 Monthly Evapotranspiration
 Surface Irrigation Typical Year
 IRRIGATION TRAINING AND RESEARCH CENTER, California Polytechnic State University, San Luis Obispo
 Table does not include adjustments for bare spots and reduced vigor

	1997 (Typical Year)							August	September	October	November	December	Annual	
	January	February	March	April	May	June	July							
	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	
Precipitation	6.81	0.27	1.34	0.22	0.21	0.2	0.13	Precipitation	0.34	0.07	0.64	4.15	2.12	16.5
Grass Reference ETc	0.73	2.12	4.01	5.56	7.32	7.58	7.98	Grass Reference ETc	6.76	5.39	3.47	1.05	0.99	52.88
Apple, Pear, Cherry, Plum and Prune	0.84	0.92	1.56	2.37	6.29	7.08	7.65	Apple, Pear, Cherry, Plum and Prune	6.47	4.85	2.25	0.45	0.95	41.68
Apples, Plums, Cherries etc w/covercrop	0.84	2.37	4.09	4.72	7.6	8.94	9.22	Apples, Plums, Cherries etc w/covercrop	7.64	5.97	3.44	0.85	1.19	56.88
Peach, Nectarine and Apricots	0.84	0.92	1.58	2.17	6.11	7.08	7.54	Peach, Nectarine and Apricots	6.45	4.76	2.37	0.46	0.95	41.21
Immature Peaches, Nectarines, etc	0.84	0.92	1.34	1.19	3.84	4.28	4.65	Immature Peaches, Nectarines, etc	4.1	2.86	1.67	0.46	0.95	27.11
Almonds	0.84	0.98	1.82	2.97	6.51	6.81	7.21	Almonds	6.29	4.71	2.95	0.54	0.95	42.59
Almonds w/covercrop	0.84	2.13	3.51	4.68	7.52	8.16	8.33	Almonds w/covercrop	7.24	5.37	3.42	0.79	1.17	53.17
Immature Almonds	0.84	0.98	1.58	2.02	4.68	5.11	5.1	Immature Almonds	4.69	3.33	2.41	0.49	0.95	32.14
Walnuts	0.83	0.92	1.71	1.78	5.76	8.48	8.72	Walnuts	7.36	5.24	2.87	0.57	0.95	45.18
Pistachio	0.84	0.92	1.11	1.14	2.62	6	8.27	Pistachio	7.09	5.34	2.73	0.53	0.95	37.53
Pistachio w/ covercrop	0.84	2.14	3.46	3.7	5.53	7.5	9.11	Pistachio w/ covercrop	7.79	6.05	3.51	0.99	1.17	51.79
Immature Pistachio	0.84	0.92	1.11	0.69	1.54	3.95	5.75	Immature Pistachio	4.95	3.71	2.02	0.52	0.95	26.94
Misc. Deciduous	0.84	0.92	1.56	2.28	5.94	6.84	7.27	Misc. Deciduous	6.28	4.56	2.39	0.45	0.95	40.29
Grain and Grain Hay	0.87	2.25	4.42	6.13	3.86	0.22	0.15	Grain and Grain Hay	0.34	0.07	0.63	0.49	1.03	20.46
Rice	0.86	0.91	1.11	0.75	7.13	9.19	9.74	Rice	8.22	2.53	0.63	0.49	0.95	42.49
Cotton	0.86	0.91	1.1	1	1.71	4.68	8.44	Cotton	7.4	5.19	1.83	0.49	0.95	34.37
Safflower and Sunflower	0.86	1.17	2.34	5.21	8.41	7.19	0.94	Safflower and Sunflower	0.34	0.07	0.63	0.49	0.95	28.61
Corn and Grain Sorghum	0.86	0.91	2.15	1.39	2.57	6.97	8.13	Corn and Grain Sorghum	5.51	0.49	0.83	0.49	0.95	31.04
Misc. field crops	0.86	0.91	2.15	1.39	2.55	7.12	7.74	Misc. field crops	2.92	0.07	0.63	0.49	0.95	27.77
Alfalfa Hay and Clover	0.86	2.25	4.23	5.16	6.68	7.02	7.19	Alfalfa Hay and Clover	5.97	4.91	2.15	0.87	1.17	48.46
Pasture and Misc. Grasses	0.86	1.43	2.84	4.61	7.25	7.53	7.87	Pasture and Misc. Grasses	6.67	5.33	3.07	0.8	0.95	49.2
Small Vegetables	0.87	1.55	3.92	5.95	1.91	0.21	0.15	Small Vegetables	1.44	1.54	1.59	0.76	1.15	21.04
Tomatoes and Peppers	0.86	0.91	1.66	0.78	3.77	8.1	7.01	Tomatoes and Peppers	0.91	0.07	0.63	0.49	0.95	28.14
Potatoes, Sugar beets, Turnip etc..	0.86	1.21	2.74	5.88	8.15	8.45	7.7	Potatoes, Sugar beets, Turnip etc..	0.44	0.07	0.63	0.49	0.95	37.57
Melons, Squash, and Cucumbers	0.86	0.91	1.1	0.22	1	1.48	5.06	Melons, Squash, and Cucumbers	5.61	1.58	0.63	0.49	0.95	19.89
Onions and Garlic	0.87	2.08	3.83	5	5.46	1.15	0.18	Onions and Garlic	0.34	0.07	0.63	1.03	1.03	21.67
Strawberries	0.86	0.91	2.15	1.39	2.55	7.12	7.74	Strawberries	2.92	0.07	0.63	0.49	0.95	27.77
Flowers, Nursery and Christmas Tree	0.84	0.92	1.56	2.28	5.94	6.84	7.27	Flowers, Nursery and Christmas Tree	6.28	4.56	2.39	0.45	0.95	40.29
Citrus (no ground cover)	0.84	2.22	3.73	4.24	5.23	5.36	5.62	Citrus (no ground cover)	4.88	3.69	2.87	0.85	1.18	40.8
Immature Citrus	0.85	1.58	2.38	2.52	3.39	3.24	3.36	Immature Citrus	3.28	2.4	1.82	0.67	1.09	26.55
Avocado	0.84	0.92	1.56	2.28	5.94	6.84	7.27	Avocado	6.28	4.56	2.39	0.45	0.95	40.29
Misc Subtropical	0.84	0.92	1.56	2.28	5.94	6.84	7.27	Misc Subtropical	6.28	4.56	2.39	0.45	0.95	40.29
Grape Vines with 80% canopy	0.84	0.92	1.27	1.14	3.52	5.9	6.38	Grape Vines with 80% canopy	4.91	3.12	0.63	0.46	0.95	30.05
Grape Vines with cover crop (80% canopy)	0.85	1.95	3.1	3.08	5.38	6.88	7.15	Grape Vines with cover crop (80% canopy)	5.8	3.6	2.35	0.74	1.15	42.04
Immature Grapes Vines with 50% canopy	0.85	0.91	1.21	0.82	2.42	4.3	4.46	Immature Grapes Vines with 50% canopy	3.73	1.87	0.63	0.47	0.95	22.63
Idle	0.87	0.9	1.11	0.22	0.22	0.21	0.15	Idle	0.34	0.07	0.63	0.5	0.96	6.18

ETc Table for Irrigation Scheduling and Design

Zone 14 Monthly Evapotranspiration

Surface Irrigation Typical Year

IRRIGATION TRAINING AND RESEARCH CENTER, California Polytechnic State University, San Luis Obispo

Table does not include adjustments for bare spots and reduced vigor

	1997 (Typical Year)							August inches	September inches	October inches	November Inches	December inches	Annual inches	
	January inches	February Inches	March inches	April inches	May inches	June inches	July inches							
Precipitation	8.22	0.28	0.81	0.3	0.44	0.35	0.09	Precipitation	0.31	0.31	0.82	4.92	2.74	19.59
Grass Reference ETo	0.73	2.36	4.13	5.82	7.62	8	6.36	Grass Reference ETo	7.11	5.82	3.86	1.25	1.14	56.22
Apple, Pear, Cherry, Plum and Prune	0.86	0.92	1.22	2.58	6.85	7.83	8.18	Apple, Pear, Cherry, Plum and Prune	6.94	5.45	2.96	0.6	1.06	45.45
Apples, Plums, Cherries etc w/covercrop	0.88	2.56	3.67	4.91	8.21	9.5	9.78	Apples, Plums, Cherries etc w/covercrop	8.29	6.66	4.1	1.09	1.42	61.27
Peach, Nectarine and Apricots	0.86	0.92	1.24	2.37	6.68	7.93	7.99	Peach, Nectarine and Apricots	7	5.47	2.74	0.61	1.06	44.86
Immature Peaches, Nectarines, etc	0.86	0.93	1	1.34	4.24	5.04	5.11	Immature Peaches, Nectarines, etc	4.55	3.41	1.88	0.61	1.06	30.03
Almonds	0.86	0.92	1.45	3.16	7.03	7.72	7.72	Almonds	6.63	5.21	2.85	0.6	1.06	45.19
Almonds w/covercrop	0.88	2.26	3.31	4.84	8.08	8.9	9.03	Almonds w/covercrop	7.75	5.96	3.53	1.01	1.37	56.91
Immature Almonds	0.86	0.93	1.2	2.29	5.23	5.7	5.82	Immature Almonds	5.09	3.79	2.06	0.61	1.06	34.62
Walnuts	0.86	0.92	1.38	1.94	6.3	9.13	9.35	Walnuts	8.05	5.98	3.22	0.71	1.06	48.91
Pistachio	0.86	0.92	0.76	1.27	2.97	6.53	8.93	Pistachio	7.49	5.89	3.2	0.66	1.06	40.52
Pistachio w/ covercrop	0.88	2.26	3.13	3.99	5.9	8.22	9.65	Pistachio w/ covercrop	8.28	6.76	4.14	1.15	1.37	55.75
Immature Pistachio	0.86	0.93	0.76	0.79	1.87	4.43	6.19	Immature Pistachio	5.31	4.22	2.43	0.66	1.06	29.49
Misc. Deciduous	0.88	0.92	1.22	2.49	6.54	7.49	7.77	Misc. Deciduous	6.76	5.34	2.66	0.6	1.06	43.71
Grain and Grain Hay	0.88	2.52	4.55	6.43	4.14	0.38	0.1	Grain and Grain Hay	0.33	0.31	0.81	0.64	1.15	22.24
Rice	0.86	0.92	0.76	0.89	7.49	9.76	10.35	Rice	8.76	3.23	0.81	0.64	1.06	45.52
Cotton	0.86	0.92	0.76	1.09	1.98	5.19	6.91	Cotton	7.77	5.95	2.26	0.64	1.05	37.38
Safflower and Sunflower	0.88	1.22	2.17	5.52	8.8	8.21	1.28	Safflower and Sunflower	0.33	0.31	0.81	0.64	1.06	31.21
Corn and Grain Sorghum	0.86	0.92	1.75	1.6	2.84	7.55	8.66	Corn and Grain Sorghum	6.18	0.83	0.81	0.64	1.05	33.7
Misc. field crops	0.86	0.92	1.75	1.6	2.87	7.63	8.26	Misc. field crops	3	0.31	0.81	0.64	1.05	29.71
Alfalfa Hay and Clover	0.88	2.5	4.29	5.23	6.99	7.52	7.51	Alfalfa Hay and Clover	6.29	5.37	2.44	1.07	1.35	51.44
Pasture and Misc. Grasses	0.86	1.54	2.69	4.89	7.59	8.09	8.36	Pasture and Misc. Grasses	7.25	5.75	3.28	0.92	1.06	52.27
Small Vegetables	0.88	1.65	4.09	6.28	2.29	0.36	0.1	Small Vegetables	1.45	1.91	1.75	1	1.33	23.07
Tomatoes and Peppers	0.86	0.92	1.5	1.11	4.05	8.73	7.24	Tomatoes and Peppers	0.8	0.31	0.81	0.64	1.05	28.03
Potatoes, Sugar beets, Turnip etc..	0.86	1.27	2.69	6.19	8.55	8.89	7.75	Potatoes, Sugar beets, Turnip etc..	0.4	0.31	0.81	0.64	1.05	39.41
Melons, Squash, and Cucumbers	0.86	0.92	0.76	0.31	1.23	1.66	5.33	Melons, Squash, and Cucumbers	5.99	1.92	0.81	0.64	1.05	21.47
Onions and Garlic	0.88	2.3	3.78	5.33	5.29	1	0.11	Onions and Garlic	0.33	0.31	0.81	1.25	1.15	22.52
Strawberries	0.86	0.92	1.75	1.6	2.87	7.63	8.26	Strawberries	3	0.31	0.81	0.64	1.05	29.71
Flowers, Nursery and Christmas Tree	0.86	0.92	1.22	2.49	6.54	7.49	7.77	Flowers, Nursery and Christmas Tree	6.76	5.34	2.66	0.6	1.06	43.71
Citrus (no ground cover)	0.88	2.36	3.56	4.55	5.81	6.09	6.08	Citrus (no ground cover)	5.33	4.33	3.46	1.12	1.4	44.98
Immature Citrus	0.88	1.6	2.23	2.83	3.61	3.9	3.73	Immature Citrus	3.51	2.78	2.54	0.88	1.24	29.73
Avocado	0.86	0.92	1.22	2.49	6.54	7.49	7.77	Avocado	6.76	5.34	2.66	0.6	1.06	43.71
Misc Subtropical	0.88	0.92	1.22	2.49	6.54	7.49	7.77	Misc Subtropical	6.76	5.34	2.66	0.6	1.06	43.71
Grape Vines with 80% canopy	0.86	0.93	0.94	1.28	3.83	6.58	6.78	Grape Vines with 80% canopy	5.36	3.27	0.83	0.61	1.06	32.34
Grape Vines with cover crop (80% canopy)	0.88	2.04	2.92	3.2	5.89	7.49	7.53	Grape Vines with cover crop (80% canopy)	6.28	4.06	2.41	0.8	1.33	44.82
Immature Grapes Vines with 50% canopy	0.86	0.93	0.88	0.94	2.89	4.9	4.74	Immature Grapes Vines with 50% canopy	4.13	2.25	0.83	0.61	1.05	25.01
Idle	0.86	0.92	0.76	0.31	0.44	0.36	0.1	Idle	0.33	0.31	0.81	0.65	1.05	8.9

PUBLIC LAW 108-361—OCT. 25, 2004

118 STAT. 1681

Public Law 108-361
108th Congress

An Act

To authorize the Secretary of the Interior to implement water supply technology and infrastructure programs aimed at increasing and diversifying domestic water resources.

Oct. 25, 2004
[H.R. 2828]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the “Water Supply, Reliability, and Environmental Improvement Act”.

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:

Sec. 1. Short title; table of contents.

TITLE I—CALIFORNIA WATER SECURITY AND ENVIRONMENTAL
ENHANCEMENT

- Sec. 101. Short title.
- Sec. 102. Definitions.
- Sec. 103. Bay Delta program.
- Sec. 104. Management.
- Sec. 105. Reporting requirements.
- Sec. 106. Crosscut budget.
- Sec. 107. Federal share of costs.
- Sec. 108. Compliance with State and Federal law.
- Sec. 109. Authorization of appropriation.

TITLE II—MISCELLANEOUS

- Sec. 201. Salton Sea study program.
- Sec. 202. Alder Creek water storage and conservation project feasibility study and report.
- Sec. 203. Folsom Reservoir temperature control device authorization.

**TITLE I—CALIFORNIA WATER SECURITY
AND ENVIRONMENTAL ENHANCEMENT**

Water Supply,
Reliability, and
Environmental
Improvement
Act.
California.

Calfed Bay-Delta
Authorization
Act.

SEC. 101. SHORT TITLE.

This title may be cited as the “Calfed Bay-Delta Authorization Act”.

SEC. 102. DEFINITIONS.

In this title:

(1) CALFED BAY-DELTA PROGRAM.—The terms “Calfed Bay-Delta Program” and “Program” mean the programs, projects, complementary actions, and activities undertaken through coordinated planning, implementation, and assessment activities of the State agencies and Federal agencies as set forth in the Record of Decision.

(2) CALIFORNIA BAY-DELTA AUTHORITY.—The terms “California Bay-Delta Authority” and “Authority” mean the California Bay-Delta Authority, as set forth in the California Bay-Delta Authority Act (Cal. Water Code § 79400 et seq.).

(3) DELTA.—The term “Delta” has the meaning given the term in the Record of Decision.

(4) ENVIRONMENTAL WATER ACCOUNT.—The term “Environmental Water Account” means the Cooperative Management Program established under the Record of Decision.

(5) FEDERAL AGENCIES.—The term “Federal agencies” means—

(A) the Department of the Interior, including—

(i) the Bureau of Reclamation;

(ii) the United States Fish and Wildlife Service;

(iii) the Bureau of Land Management; and

(iv) the United States Geological Survey;

(B) the Environmental Protection Agency;

(C) the Army Corps of Engineers;

(D) the Department of Commerce, including the National Marine Fisheries Service (also known as “NOAA Fisheries”);

(E) the Department of Agriculture, including—

(i) the Natural Resources Conservation Service;

and

(ii) the Forest Service; and

(F) the Western Area Power Administration.

(6) FIRM YIELD.—The term “firm yield” means a quantity of water from a project or program that is projected to be available on a reliable basis, given a specified level of risk, during a critically dry period.

(7) GOVERNOR.—The term “Governor” means the Governor of the State of California.

(8) RECORD OF DECISION.—The term “Record of Decision” means the Calfed Bay-Delta Program Record of Decision, dated August 28, 2000.

(9) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

(10) STATE.—The term “State” means the State of California.

(11) STATE AGENCIES.—The term “State agencies” means—

(A) the Resources Agency of California, including—

(i) the Department of Water Resources;

(ii) the Department of Fish and Game;

(iii) the Reclamation Board;

(iv) the Delta Protection Commission;

(v) the Department of Conservation;

(vi) the San Francisco Bay Conservation and Development Commission;

(vii) the Department of Parks and Recreation; and

(viii) the California Bay-Delta Authority;

(B) the California Environmental Protection Agency, including the State Water Resources Control Board;

(C) the California Department of Food and Agriculture; and

(D) the Department of Health Services.

SEC. 103. BAY DELTA PROGRAM.**(a) IN GENERAL.—**

(1) RECORD OF DECISION AS GENERAL FRAMEWORK.—The Record of Decision is approved as a general framework for addressing the Calfed Bay-Delta Program, including its components relating to water storage, ecosystem restoration, water supply reliability (including new firm yield), conveyance, water use efficiency, water quality, water transfers, watersheds, the Environmental Water Account, levee stability, governance, and science.

(2) REQUIREMENTS.—

(A) IN GENERAL.—The Secretary and the heads of the Federal agencies are authorized to carry out the activities described in subsections (c) through (f) consistent with—

- (i) the Record of Decision;
- (ii) the requirement that Program activities consisting of protecting drinking water quality, restoring ecological health, improving water supply reliability (including additional storage, conveyance, and new firm yield), and protecting Delta levees will progress in a balanced manner; and
- (iii) this title.

(B) MULTIPLE BENEFITS.—In selecting activities and projects, the Secretary and the heads of the Federal agencies shall consider whether the activities and projects have multiple benefits.

(b) AUTHORIZED ACTIVITIES.—The Secretary and the heads of the Federal agencies are authorized to carry out the activities described in subsections (c) through (f) in furtherance of the Calfed Bay-Delta Program as set forth in the Record of Decision, subject to the cost-share and other provisions of this title, if the activity has been—

- (1) subject to environmental review and approval, as required under applicable Federal and State law; and
- (2) approved and certified by the relevant Federal agency, following consultation and coordination with the Governor, to be consistent with the Record of Decision.

(c) AUTHORIZATIONS FOR FEDERAL AGENCIES UNDER APPLICABLE LAW.—

(1) SECRETARY OF THE INTERIOR.—The Secretary of the Interior is authorized to carry out the activities described in paragraphs (1) through (10) of subsection (d), to the extent authorized under the reclamation laws, the Central Valley Project Improvement Act (title XXXIV of Public Law 102-575; 106 Stat. 4706), the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), and other applicable law.

(2) ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY.—The Administrator of the Environmental Protection Agency is authorized to carry out the activities described in paragraphs (3), (5), (6), (7), (8), and (9) of subsection (d), to the extent authorized under the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), the Safe Drinking Water Act (42 U.S.C. 300f et seq.), and other applicable law.

(3) SECRETARY OF THE ARMY.—The Secretary of the Army is authorized to carry out the activities described in paragraphs (1), (2), (6), (7), (8), and (9) of subsection (d), to the extent

authorized under flood control, water resource development, and other applicable law.

(4) SECRETARY OF COMMERCE.—The Secretary of Commerce is authorized to carry out the activities described in paragraphs (2), (6), (7), and (9) of subsection (d), to the extent authorized under the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), and other applicable law.

(5) SECRETARY OF AGRICULTURE.—The Secretary of Agriculture is authorized to carry out the activities described in paragraphs (3), (5), (6), (7), (8), and (9) of subsection (d), to the extent authorized under title XII of the Food Security Act of 1985 (16 U.S.C. 3801 et seq.), the Farm Security and Rural Investment Act of 2002 (Public Law 107-171; 116 Stat. 134) (including amendments made by that Act), and other applicable law.

(d) DESCRIPTION OF ACTIVITIES UNDER APPLICABLE LAW.—

(1) WATER STORAGE.—

(A) IN GENERAL.—Activities under this paragraph consist of—

(i) planning and feasibility studies for projects to be pursued with project-specific study for enlargement of—

(I) the Shasta Dam in Shasta County; and

(II) the Los Vaqueros Reservoir in Contra Costa County;

(ii) planning and feasibility studies for the following projects requiring further consideration—

(I) the Sites Reservoir in Colusa County; and

(II) the Upper San Joaquin River storage in Fresno and Madera Counties;

(iii) developing and implementing groundwater management and groundwater storage projects; and

(iv) comprehensive water management planning.

(B) STORAGE PROJECT AUTHORIZATION AND BALANCED CALFED IMPLEMENTATION.—

(i) IN GENERAL.—If on completion of the feasibility study for a project described in clause (i) or (ii) of subparagraph (A), the Secretary, in consultation with the Governor, determines that the project should be constructed in whole or in part with Federal funds, the Secretary shall submit the feasibility study to Congress.

(ii) FINDING OF IMBALANCE.—If Congress fails to authorize construction of the project by the end of the next full session following the submission of the feasibility study, the Secretary, in consultation with the Governor, shall prepare a written determination making a finding of imbalance for the Calfed Bay-Delta Program.

(iii) REPORT ON REBALANCING.—

(I) IN GENERAL.—If the Secretary makes a finding of imbalance for the Program under clause (ii), the Secretary, in consultation with the Governor, shall, not later than 180 days after the end of the full session described in clause (ii),

prepare and submit to Congress a report on the measures necessary to rebalance the Program.

(II) SCHEDULES AND ALTERNATIVES.—The report shall include preparation of revised schedules and identification of alternatives to rebalance the Program, including resubmission of the project to Congress with or without modification, construction of other projects, and construction of other projects that provide equivalent water supply and other benefits at equal or lesser cost.

(C) WATER SUPPLY AND YIELD STUDY.—

(i) IN GENERAL.—The Secretary, acting through the Bureau of Reclamation and in coordination with the State, shall conduct a study of available water supplies and existing and future needs for water—

(I) within the units of the Central Valley Project;

(II) within the area served by Central Valley Project agricultural, municipal, and industrial water service contractors; and

(III) within the Calfed Delta solution area.

(ii) RELATIONSHIP TO PRIOR STUDY.—In conducting the study, the Secretary shall incorporate and revise, as necessary, the results of the study required by section 3408(j) of the Central Valley Project Improvement Act of 1992 (Public Law 102-575; 106 Stat. 4730).

(iii) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to the appropriate authorizing and appropriating committees of the Senate and the House of Representatives a report describing the results of the study, including—

(I) new firm yield and water supply improvements, if any, for Central Valley Project agricultural water service contractors and municipal and industrial water service contractors, including those identified in Bulletin 160;

(II) all water management actions or projects, including those identified in Bulletin 160, that would—

(aa) improve firm yield or water supply;

and

(bb) if taken or constructed, balance available water supplies and existing demand with due recognition of water right priorities and environmental needs;

(III) the financial costs of the actions and projects described under subclause (II); and

(IV) the beneficiaries of those actions and projects and an assessment of the willingness of the beneficiaries to pay the capital costs and operation and maintenance costs of the actions and projects.

(D) MANAGEMENT.—The Secretary shall conduct activities related to developing groundwater storage projects to the extent authorized under law.

(E) COMPREHENSIVE WATER PLANNING.—The Secretary shall conduct activities related to comprehensive water management planning to the extent authorized under law.

(2) CONVEYANCE.—

(A) SOUTH DELTA ACTIONS.—

(i) IN GENERAL.—In the case of the South Delta, activities under this subparagraph consist of—

(I) the South Delta Improvements Program through actions to—

(aa) increase the State Water Project export limit to 8,500 cfs;

(bb) install permanent, operable barriers in the South Delta, under which Federal agencies shall cooperate with the State to accelerate installation of the permanent, operable barriers in the South Delta, with an intent to complete that installation not later than September 30, 2007;

(cc) evaluate, consistent with the Record of Decision, fish screens and intake facilities at the Tracy Pumping Plant facilities; and

(dd) increase the State Water Project export to the maximum capability of 10,300 cfs;

(II) reduction of agricultural drainage in South Delta channels, and other actions necessary to minimize the impact of drainage on drinking water quality;

(III) evaluation of lower San Joaquin River floodway improvements;

(IV) installation and operation of temporary barriers in the South Delta until fully operable barriers are constructed; and

(V) actions to protect navigation and local diversions not adequately protected by temporary barriers.

(ii) ACTIONS TO INCREASE PUMPING.—Actions to increase pumping shall be accomplished in a manner consistent with the Record of Decision requirement to avoid redirected impacts and adverse impacts to fishery protection and with any applicable Federal or State law that protects—

(I) water diversions and use (including avoidance of increased costs of diversion) by in-Delta water users (including in-Delta agricultural users that have historically relied on water diverted for use in the Delta);

(II) water quality for municipal, industrial, agricultural, and other uses; and

(III) water supplies for areas of origin.

(B) NORTH DELTA ACTIONS.—In the case of the North Delta, activities under this subparagraph consist of—

(i) evaluation and implementation of improved operational procedures for the Delta Cross Channel to address fishery and water quality concerns;

(ii) evaluation of a screened through-Delta facility on the Sacramento River; and

(iii) evaluation of lower Mokelumne River floodway improvements.

(C) INTERTIES.—Activities under this subparagraph consist of—

(i) evaluation and construction of an intertie between the State Water Project California Aqueduct and the Central Valley Project Delta Mendota Canal, near the City of Tracy, as an operation and maintenance activity, except that the Secretary shall design and construct the intertie in a manner consistent with a possible future expansion of the intertie capacity (as described in subsection (f)(1)(B)); and

(ii) assessment of a connection of the Central Valley Project to the Clifton Court Forebay of the State Water Project, with a corresponding increase in the screened intake of the Forebay.

(D) PROGRAM TO MEET STANDARDS.—

(i) IN GENERAL.—Prior to increasing export limits from the Delta for the purposes of conveying water to south-of-Delta Central Valley Project contractors or increasing deliveries through an intertie, the Secretary shall, not later than 1 year after the date of enactment of this Act, in consultation with the Governor, develop and initiate implementation of a program to meet all existing water quality standards and objectives for which the Central Valley Project has responsibility.

Deadline.

(ii) MEASURES.—In developing and implementing the program, the Secretary shall include, to the maximum extent feasible, the measures described in clauses (iii) through (vii).

(iii) RECIRCULATION PROGRAM.—The Secretary shall incorporate into the program a recirculation program to provide flow, reduce salinity concentrations in the San Joaquin River, and reduce the reliance on the New Melones Reservoir for meeting water quality and fishery flow objectives through the use of excess capacity in export pumping and conveyance facilities.

(iv) BEST MANAGEMENT PRACTICES PLAN.—

(I) IN GENERAL.—The Secretary shall develop and implement, in coordination with the State's programs to improve water quality in the San Joaquin River, a best management practices plan to reduce the water quality impacts of the discharges from wildlife refuges that receive water from the Federal Government and discharge salt or other constituents into the San Joaquin River.

(II) COORDINATION WITH INTERESTED PARTIES.—The plan shall be developed in coordination with interested parties in the San Joaquin Valley and the Delta.

(III) COORDINATION WITH ENTITIES THAT DISCHARGE WATER.—The Secretary shall also coordinate activities under this clause with other entities that discharge water into the San Joaquin River to reduce salinity concentrations discharged into

the River, including the timing of discharges to optimize their assimilation.

(v) ACQUISITION OF WATER.—The Secretary shall incorporate into the program the acquisition from willing sellers of water from streams tributary to the San Joaquin River or other sources to provide flow, dilute discharges of salt or other constituents, and to improve water quality in the San Joaquin River below the confluence of the Merced and San Joaquin Rivers, and to reduce the reliance on New Melones Reservoir for meeting water quality and fishery flow objectives.

(vi) PURPOSE.—The purpose of the authority and direction provided to the Secretary under this subparagraph is to provide greater flexibility in meeting the existing water quality standards and objectives for which the Central Valley Project has responsibility so as to reduce the demand on water from New Melones Reservoir used for that purpose and to assist the Secretary in meeting any obligations to Central Valley Project contractors from the New Melones Project.

(vii) UPDATING OF NEW MELONES OPERATING PLAN.—The Secretary shall update the New Melones operating plan to take into account, among other things, the actions described in this title that are designed to reduce the reliance on New Melones Reservoir for meeting water quality and fishery flow objectives, and to ensure that actions to enhance fisheries in the Stanislaus River are based on the best available science.

(3) WATER USE EFFICIENCY.—

(A) WATER CONSERVATION PROJECTS.—Activities under this paragraph include water conservation projects that provide water supply reliability, water quality, and ecosystem benefits to the California Bay-Delta system.

(B) TECHNICAL ASSISTANCE.—Activities under this paragraph include technical assistance for urban and agricultural water conservation projects.

(C) WATER RECYCLING AND DESALINATION PROJECTS.—Activities under this paragraph include water recycling and desalination projects, including groundwater remediation projects and projects identified in the Bay Area Water Plan and the Southern California Comprehensive Water Reclamation and Reuse Study and other projects, giving priority to projects that include regional solutions to benefit regional water supply and reliability needs.

(D) WATER MEASUREMENT AND TRANSFER ACTIONS.—Activities under this paragraph include water measurement and transfer actions.

(E) URBAN WATER CONSERVATION.—Activities under this paragraph include implementation of best management practices for urban water conservation.

(F) RECLAMATION AND RECYCLING PROJECTS.—

(i) PROJECTS.—This subparagraph applies to—

(I) projects identified in the Southern California Comprehensive Water Reclamation and Reuse Study, dated April 2001 and authorized by

Applicability.

section 1606 of the Reclamation Wastewater and Groundwater Study and Facilities Act (43 U.S.C. 390h-4); and

(II) projects identified in the San Francisco Bay Area Regional Water Recycling Program described in the San Francisco Bay Area Regional Water Recycling Program Recycled Water Master Plan, dated December 1999 and authorized by section 1611 of the Reclamation Wastewater and Groundwater Study and Facilities Act (43 U.S.C. 390h-9).

(ii) DEADLINE.—Not later than 180 days after the date of enactment of this Act, the Secretary shall—

(I) complete the review of the existing studies of the projects described in clause (i); and

(II) make the feasibility determinations described in clause (iii).

(iii) FEASIBILITY DETERMINATIONS.—A project described in clause (i) is presumed to be feasible if the Secretary determines for the project—

(I) in consultation with the affected local sponsoring agency and the State, that the existing planning and environmental studies for the project (together with supporting materials and documentation) have been prepared consistent with Bureau of Reclamation procedures for projects under consideration for financial assistance under the Reclamation Wastewater and Groundwater Study and Facilities Act (43 U.S.C. 390h et seq.); and

(II) that the planning and environmental studies for the project (together with supporting materials and documentation) demonstrate that the project will contribute to the goals of improving water supply reliability in the Calfed solution area or the Colorado River Basin within the State and otherwise meets the requirements of section 1604 of the Reclamation Wastewater and Groundwater Study and Facilities Act (43 U.S.C. 390h-2).

(iv) REPORT.—Not later than 90 days after the date of completion of a feasibility study or the review of a feasibility study under this subparagraph, the Secretary shall submit to the appropriate authorizing and appropriating committees of the Senate and the House of Representatives a report describing the results of the study or review.

(4) WATER TRANSFERS.—Activities under this paragraph consist of—

(A) increasing the availability of existing facilities for water transfers;

(B) lowering transaction costs through permit streamlining; and

(C) maintaining a water transfer information clearinghouse.

(5) INTEGRATED REGIONAL WATER MANAGEMENT PLANS.—Activities under this paragraph consist of assisting local and

regional communities in the State in developing and implementing integrated regional water management plans to carry out projects and programs that improve water supply reliability, water quality, ecosystem restoration, and flood protection, or meet other local and regional needs, in a manner that is consistent with, and makes a significant contribution to, the Calfed Bay-Delta Program.

(6) ECOSYSTEM RESTORATION.—

(A) IN GENERAL.—Activities under this paragraph consist of—

(i) implementation of large-scale restoration projects in San Francisco Bay and the Delta and its tributaries;

(ii) restoration of habitat in the Delta, San Pablo Bay, and Suisun Bay and Marsh, including tidal wetland and riparian habitat;

(iii) fish screen and fish passage improvement projects, including the Sacramento River Small Diversion Fish Screen Program;

(iv) implementation of an invasive species program, including prevention, control, and eradication;

(v) development and integration of Federal and State agricultural programs that benefit wildlife into the Ecosystem Restoration Program;

(vi) financial and technical support for locally-based collaborative programs to restore habitat while addressing the concerns of local communities;

(vii) water quality improvement projects to manage or reduce concentrations of salinity, selenium, mercury, pesticides, trace metals, dissolved oxygen, turbidity, sediment, and other pollutants;

(viii) land and water acquisitions to improve habitat and fish spawning and survival in the Delta and its tributaries;

(ix) integrated flood management, ecosystem restoration, and levee protection projects;

(x) scientific evaluations and targeted research on Program activities; and

(xi) strategic planning and tracking of Program performance.

(B) REPORTING REQUIREMENTS.—The Secretary or the head of the relevant Federal agency (as appropriate under clause (ii)) shall provide to the appropriate authorizing committees of the Senate and the House of Representatives and other appropriate parties in accordance with this subparagraph—

(i) an annual ecosystem program plan report in accordance with subparagraph (C); and

(ii) detailed project reports in accordance with subparagraph (D).

(C) ANNUAL ECOSYSTEM PROGRAM PLAN.—

(i) IN GENERAL.—Not later than October 1 of each year, with respect to each ecosystem restoration action carried out using Federal funds under this title, the Secretary, in consultation with the Governor, shall submit to the appropriate authorizing committees of

Reports.
Deadlines.

the Senate and the House of Representatives an annual ecosystem program plan report.

(ii) PURPOSES.—The purposes of the report are—

(I) to describe the projects and programs to implement this subsection in the following fiscal year; and

(II) to establish priorities for funding the projects and programs for subsequent fiscal years.

(iii) CONTENTS.—The report shall describe—

(I) the goals and objectives of the programs and projects;

(II) program accomplishments;

(III) major activities of the programs;

(IV) the Federal agencies involved in each project or program identified in the plan and the cost-share arrangements with cooperating agencies;

(V) the resource data and ecological monitoring data to be collected for the restoration projects and how the data are to be integrated, streamlined, and designed to measure the effectiveness and overall trend of ecosystem health in the Bay-Delta watershed;

(VI) implementation schedules and budgets;

(VII) existing monitoring programs and performance measures;

(VIII) the status and effectiveness of measures to minimize the impacts of the program on agricultural land; and

(IX) a description of expected benefits of the restoration program relative to the cost.

(iv) SPECIAL RULE FOR LAND ACQUISITION USING FEDERAL FUNDS.—For each ecosystem restoration project involving land acquisition using Federal funds under this title, the Secretary shall—

(I) identify the specific parcels to be acquired in the annual ecosystem program plan report under this subparagraph; or

(II) not later than 150 days before the project is approved, provide to the appropriate authorizing committees of the Senate and the House of Representatives, the United States Senators from the State, and the United States Representative whose district would be affected, notice of any such proposed land acquisition using Federal funds under this title submitted to the Federal or State agency.

Deadline.
Notices.

(D) DETAILED PROJECT REPORTS.—

(i) IN GENERAL.—In the case of each ecosystem restoration program or project funded under this title that is not specifically identified in an annual ecosystem program plan under subparagraph (C), not later than 45 days prior to approval, the Secretary, in coordination with the State, shall submit to the appropriate authorizing committees of the Senate and the House of Representatives recommendations on the proposed program or project.

(ii) CONTENTS.—The recommendations shall—

(I) describe the selection of the program or project, including the level of public involvement and independent science review;

(II) describe the goals, objectives, and implementation schedule of the program or project, and the extent to which the program or project addresses regional and programmatic goals and priorities;

(III) describe the monitoring plans and performance measures that will be used for evaluating the performance of the proposed program or project;

(IV) identify any cost-sharing arrangements with cooperating entities;

(V) identify how the proposed program or project will comply with all applicable Federal and State laws, including the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.); and

(VI) in the case of any program or project involving the acquisition of private land using Federal funds under this title—

(aa) describe the process and timing of notification of interested members of the public and local governments;

(bb) describe the measures taken to minimize impacts on agricultural land pursuant to the Record of Decision; and

(cc) include preliminary management plans for all properties to be acquired with Federal funds, including an overview of existing conditions (including habitat types in the affected project area), the expected ecological benefits, preliminary cost estimates, and implementation schedules.

(7) WATERSHEDS.—Activities under this paragraph consist of—

(A) building local capacity to assess and manage watersheds affecting the Delta system;

(B) technical assistance for watershed assessments and management plans; and

(C) developing and implementing locally-based watershed conservation, maintenance, and restoration actions.

(8) WATER QUALITY.—Activities under this paragraph consist of—

(A) addressing drainage problems in the San Joaquin Valley to improve downstream water quality (including habitat restoration projects that improve water quality) if—

(i) a plan is in place for monitoring downstream water quality improvements; and

(ii) State and local agencies are consulted on the activities to be funded;

except that no right, benefit, or privilege is created as a result of this subparagraph;

(B) implementation of source control programs in the Delta and its tributaries;

(C) developing recommendations through scientific panels and advisory council processes to meet the Calfed Bay-Delta Program goal of continuous improvement in Delta water quality for all uses;

(D) investing in treatment technology demonstration projects;

(E) controlling runoff into the California aqueduct, the Delta-Mendota Canal, and other similar conveyances;

(F) addressing water quality problems at the North Bay Aqueduct;

(G) supporting and participating in the development of projects to enable San Francisco Bay Area water districts, and water entities in San Joaquin and Sacramento Counties, to work cooperatively to address their water quality and supply reliability issues, including—

(i) connections between aqueducts, water transfers, water conservation measures, institutional arrangements, and infrastructure improvements that encourage regional approaches; and

(ii) investigations and studies of available capacity in a project to deliver water to the East Bay Municipal Utility District under its contract with the Bureau of Reclamation, dated July 20, 2001, in order to determine if such capacity can be utilized to meet the objectives of this subparagraph;

(H) development of water quality exchanges and other programs to make high quality water available for urban and other users;

(I) development and implementation of a plan to meet all Delta water quality standards for which the Federal and State water projects have responsibility;

(J) development of recommendations through science panels and advisory council processes to meet the Calfed Bay-Delta Program goal of continuous improvement in water quality for all uses; and

(K) projects that are consistent with the framework of the water quality component of the Calfed Bay-Delta Program.

(9) SCIENCE.—Activities under this paragraph consist of—

(A) supporting establishment and maintenance of an independent science board, technical panels, and standing boards to provide oversight and peer review of the Program;

(B) conducting expert evaluations and scientific assessments of all Program elements;

(C) coordinating existing monitoring and scientific research programs;

(D) developing and implementing adaptive management experiments to test, refine, and improve scientific understandings;

(E) establishing performance measures, and monitoring and evaluating the performance of all Program elements; and

(F) preparing an annual science report.

Reports.

(10) DIVERSIFICATION OF WATER SUPPLIES.—Activities under this paragraph consist of actions to diversify sources of level 2 refuge supplies and modes of delivery to refuges while maintaining the diversity of level 4 supplies pursuant to section

3406(d)(2) of the Central Valley Project Improvement Act (Public Law 102-575; 106 Stat. 4723).

(e) NEW AND EXPANDED AUTHORIZATIONS FOR FEDERAL AGENCIES.—

(1) IN GENERAL.—The heads of the Federal agencies described in this subsection are authorized to carry out the activities described in subsection (f) during each of fiscal years 2005 through 2010, in coordination with the Governor.

(2) SECRETARY OF THE INTERIOR.—The Secretary of the Interior is authorized to carry out the activities described in paragraphs (1), (2), and (4) of subsection (f).

(3) ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY AND THE SECRETARIES OF AGRICULTURE AND COMMERCE.—The Administrator of the Environmental Protection Agency, the Secretary of Agriculture, and the Secretary of Commerce are authorized to carry out the activities described in subsection (f)(4).

(4) SECRETARY OF THE ARMY.—The Secretary of the Army is authorized to carry out the activities described in paragraphs (3) and (4) of subsection (f).

(f) DESCRIPTION OF ACTIVITIES UNDER NEW AND EXPANDED AUTHORIZATIONS.—

(1) CONVEYANCE.—Of the amounts authorized to be appropriated under section 109, not more than \$184,000,000 may be expended for the following:

(A) SAN LUIS RESERVOIR.—Funds may be expended for feasibility studies, evaluation, and implementation of the San Luis Reservoir lowpoint improvement project, except that Federal participation in any construction of an expanded Pacheco Reservoir shall be subject to future congressional authorization.

(B) INTERTIE.—Funds may be expended for feasibility studies and evaluation of increased capacity of the intertie between the State Water Project California Aqueduct and the Central Valley Project Delta Mendota Canal.

(C) FRANKS TRACT.—Funds may be expended for feasibility studies and actions at Franks Tract to improve water quality in the Delta.

(D) CLIFTON COURT FOREBAY AND THE TRACY PUMPING PLANT.—Funds may be expended for feasibility studies and design of fish screen and intake facilities at Clifton Court Forebay and the Tracy Pumping Plant facilities.

(E) DRINKING WATER INTAKE FACILITIES.—

(i) IN GENERAL.—Funds may be expended for design and construction of the relocation of drinking water intake facilities to in-Delta water users.

(ii) DRINKING WATER QUALITY.—The Secretary shall coordinate actions for relocating intake facilities on a time schedule consistent with subsection (d)(2)(A)(i)(I)(bb) or take other actions necessary to offset the degradation of drinking water quality in the Delta due to the South Delta Improvement Program.

(F) NEW MELONES RESERVOIR.—

(i) IN GENERAL.—In addition to the other authorizations granted to the Secretary by this title, the Secretary shall acquire water from willing sellers

and undertake other actions designed to decrease releases from the New Melones Reservoir for meeting water quality standards and flow objectives for which the Central Valley Project has responsibility to assist in meeting allocations to Central Valley Project contractors from the New Melones Project.

(ii) **PURPOSE.**—The authorization under this subparagraph is solely meant to add flexibility for the Secretary to meet any obligations of the Secretary to the Central Valley Project contractors from the New Melones Project by reducing demand for water dedicated to meeting water quality standards in the San Joaquin River.

(iii) **FUNDING.**—Of the amounts authorized to be appropriated under section 109, not more than \$30,000,000 may be expended to carry out clause (i).

(G) **RECIRCULATION OF EXPORT WATER.**—Funds may be used to conduct feasibility studies, evaluate, and, if feasible, implement the recirculation of export water to reduce salinity and improve dissolved oxygen in the San Joaquin River.

(2) **ENVIRONMENTAL WATER ACCOUNT.**—

(A) **IN GENERAL.**—Of the amounts authorized to be appropriated under section 109, not more than \$90,000,000 may be expended for implementation of the Environmental Water Account.

(B) **NONREIMBURSABLE FEDERAL EXPENDITURE.**—Expenditures under subparagraph (A) shall be considered a nonreimbursable Federal expenditure in recognition of the payments of the contractors of the Central Valley Project to the Restoration Fund created by the Central Valley Project Improvement Act (Title XXXIV of Public Law 102-575; 106 Stat. 4706).

(C) **USE OF RESTORATION FUND.**—

(i) **IN GENERAL.**—Of the amounts appropriated for the Restoration Fund for each fiscal year, an amount not to exceed \$10,000,000 for any fiscal year may be used to implement the Environmental Water Account to the extent those actions are consistent with the fish and wildlife habitat restoration and improvement purposes of the Central Valley Project Improvement Act.

(ii) **ACCOUNTING.**—Any such use of the Restoration Fund shall count toward the 33 percent of funds made available to the Restoration Fund that, pursuant to section 3407(a) of the Central Valley Project Improvement Act, are otherwise authorized to be appropriated to the Secretary to carry out paragraphs (4) through (6), (10) through (18), and (20) through (22) of section 3406(b) of that Act.

(iii) **FEDERAL FUNDING.**—The \$10,000,000 limitation on the use of the Restoration Fund for the Environmental Water Account under clause (i) does not limit the appropriate amount of Federal funding for the Environmental Water Account.

(3) **LEVEE STABILITY.**—

(A) IN GENERAL.—For purposes of implementing the Calfed Bay-Delta Program within the Delta (as defined in Cal. Water Code § 12220), the Secretary of the Army is authorized to undertake the construction and implementation of levee stability programs or projects for such purposes as flood control, ecosystem restoration, water supply, water conveyance, and water quality objectives.

(B) REPORT.—Not later than 180 days after the date of enactment of this Act, the Secretary of the Army shall submit to the appropriate authorizing and appropriating committees of the Senate and the House of Representatives a report that describes the levee stability reconstruction projects and priorities that will be carried out under this title during each of fiscal years 2005 through 2010.

Applicability.

(C) SMALL FLOOD CONTROL PROJECTS.—Notwithstanding the project purpose, the authority granted under section 205 of the Flood Control Act of 1948 (33 U.S.C. 701s) shall apply to each project authorized under this paragraph.

(D) PROJECTS.—Of the amounts authorized to be appropriated under section 109, not more than \$90,000,000 may be expended to—

(i) reconstruct Delta levees to a base level of protection (also known as the “Public Law 84-99 standard”);

(ii) enhance the stability of levees that have particular importance in the system through the Delta Levee Special Improvement Projects Program;

(iii) develop best management practices to control and reverse land subsidence on Delta islands;

(iv) develop a Delta Levee Emergency Management and Response Plan that will enhance the ability of Federal, State, and local agencies to rapidly respond to levee emergencies;

(v) develop a Delta Risk Management Strategy after assessing the consequences of Delta levee failure from floods, seepage, subsidence, and earthquakes;

(vi) reconstruct Delta levees using, to the maximum extent practicable, dredged materials from the Sacramento River, the San Joaquin River, and the San Francisco Bay in reconstructing Delta levees;

(vii) coordinate Delta levee projects with flood management, ecosystem restoration, and levee protection projects of the lower San Joaquin River and lower Mokelumne River floodway improvements and other projects under the Sacramento-San Joaquin Comprehensive Study; and

(viii) evaluate and, if appropriate, rehabilitate the Suisun Marsh levees.

(4) PROGRAM MANAGEMENT, OVERSIGHT, AND COORDINATION.—

(A) IN GENERAL.—Of the amounts authorized to be appropriated under section 109, not more than \$25,000,000 may be expended by the Secretary or the other heads of Federal agencies, either directly or through grants, contracts, or cooperative agreements with agencies of the State, for—

(i) Program support;

(ii) Program-wide tracking of schedules, finances, and performance;

(iii) multiagency oversight and coordination of Program activities to ensure Program balance and integration;

(iv) development of interagency cross-cut budgets and a comprehensive finance plan to allocate costs in accordance with the beneficiary pays provisions of the Record of Decision;

(v) coordination of public outreach and involvement, including tribal, environmental justice, and public advisory activities in accordance with the Federal Advisory Committee Act (5 U.S.C. App.); and

(vi) development of Annual Reports.

(B) PROGRAM-WIDE ACTIVITIES.—Of the amount referred to in subparagraph (A), not less than 50 percent of the appropriated amount shall be provided to the California Bay-Delta Authority to carry out Program-wide management, oversight, and coordination activities.

SEC. 104. MANAGEMENT.

(a) COORDINATION.—In carrying out the Calfed Bay-Delta Program, the Federal agencies shall coordinate their activities with the State agencies.

(b) PUBLIC PARTICIPATION.—In carrying out the Calfed Bay-Delta Program, the Federal agencies shall cooperate with local and tribal governments and the public through an advisory committee established in accordance with the Federal Advisory Committee Act (5 U.S.C. App.) and other appropriate means, to seek input on Program planning and design, technical assistance, and development of peer review science programs.

(c) SCIENCE.—In carrying out the Calfed Bay-Delta Program, the Federal agencies shall seek to ensure, to the maximum extent practicable, that—

(1) all major aspects of implementing the Program are subjected to credible and objective scientific review; and

(2) major decisions are based upon the best available scientific information.

(d) GOVERNANCE.—

(1) IN GENERAL.—In carrying out the Calfed Bay-Delta Program, the Secretary and the Federal agency heads are authorized to participate as nonvoting members of the California Bay-Delta Authority, as established in the California Bay-Delta Authority Act (Cal. Water Code §79400 et seq.), to the extent consistent with Federal law, for the full duration of the period the Authority continues to be authorized by State law.

(2) RELATIONSHIP TO FEDERAL LAW AND AGENCIES.—Nothing in this subsection shall preempt or otherwise affect any Federal law or limit the statutory authority of any Federal agency.

(3) CALIFORNIA BAY-DELTA AUTHORITY.—

(A) ADVISORY COMMITTEE.—The California Bay-Delta Authority shall not be considered an advisory committee within the meaning of the Federal Advisory Committee Act (5 U.S.C. App.).

(B) **FINANCIAL INTEREST.**—The financial interests of the California Bay-Delta Authority shall not be imputed to any Federal official participating in the Authority.

(C) **ETHICS REQUIREMENTS.**—A Federal official participating in the California Bay-Delta Authority shall remain subject to Federal financial disclosure and conflict of interest laws and shall not be subject to State financial disclosure and conflict of interest laws.

(e) **ENVIRONMENTAL JUSTICE.**—The Federal agencies, consistent with Executive Order 12898 (59 Fed. Reg. 7629), should continue to collaborate with State agencies to—

(1) develop a comprehensive environmental justice workplan for the Calfed Bay-Delta Program; and

(2) fulfill the commitment to addressing environmental justice challenges referred to in the Calfed Bay-Delta Program Environmental Justice Workplan, dated December 13, 2000.

(f) **LAND ACQUISITION.**—Federal funds appropriated by Congress specifically for implementation of the Calfed Bay-Delta Program may be used to acquire fee title to land only where consistent with the Record of Decision.

SEC. 105. REPORTING REQUIREMENTS.

(a) **REPORT.**—

(1) **IN GENERAL.**—Not later than February 15 of each year, the Secretary, in cooperation with the Governor, shall submit to the appropriate authorizing and appropriating committees of the Senate and the House of Representatives a report that—

(A) describes the status of implementation of all components of the Calfed Bay-Delta Program;

(B) sets forth any written determination resulting from the review required under subsection (b) or section 103(d)(1)(B); and

(C) includes any revised schedule prepared under subsection (b) or section 103(d)(1)(B)(iii)(II).

(2) **CONTENTS.**—The report required under paragraph (1) shall describe—

(A) the progress of the Calfed Bay-Delta Program in meeting the implementation schedule for the Program in a manner consistent with the Record of Decision;

(B) the status of implementation of all components of the Program;

(C) expenditures in the past fiscal year for implementing the Program;

(D) accomplishments during the past fiscal year in achieving the objectives of additional and improved—

(i) water storage;

(ii) water quality, including—

(I) the water quality targets described in section 2.2.9 of the Record of Decision; and

(II) any pending actions that may affect the ability of the Calfed Bay-Delta Program to achieve those targets and requirements;

(iii) water use efficiency;

(iv) ecosystem restoration;

(v) watershed management;

(vi) levee system integrity;

(vii) water transfers;

- (viii) water conveyance;
 - (ix) water supply reliability (including new firm yield), including progress in achieving the water supply targets described in section 2.2.4 of the Record of Decision and any pending actions that may affect the ability of the Calfed Bay-Delta Program to achieve those targets; and
 - (x) the uses and assets of the environmental water account described in section 2.2.7 of the Record of Decision;
 - (E) Program goals, current schedules, and relevant financing agreements, including funding levels necessary to achieve completion of the feasibility studies and environmental documentation for the surface storage projects identified in section 103 by not later than September 30, 2008;
 - (F) progress on—
 - (i) storage projects;
 - (ii) conveyance improvements;
 - (iii) levee improvements;
 - (iv) water quality projects; and
 - (v) water use efficiency programs;
 - (G) completion of key projects and milestones identified in the Ecosystem Restoration Program, including progress on project effectiveness, monitoring, and accomplishments;
 - (H) development and implementation of local programs for watershed conservation and restoration;
 - (I) progress in improving water supply reliability and implementing the Environmental Water Account;
 - (J) achievement of commitments under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) and endangered species law of the State;
 - (K) implementation of a comprehensive science program;
 - (L) progress toward acquisition of the Federal and State permits (including permits under section 404(a) of the Federal Water Pollution Control Act (33 U.S.C. 1344(a))) for implementation of projects in all identified Program areas;
 - (M) progress in achieving benefits in all geographic regions covered by the Program;
 - (N) legislative action on—
 - (i) water transfer;
 - (ii) groundwater management;
 - (iii) water use efficiency; and
 - (iv) governance;
 - (O) the status of complementary actions;
 - (P) the status of mitigation measures; and
 - (Q) revisions to funding commitments and Program responsibilities.
- (b) ANNUAL REVIEW OF PROGRESS AND BALANCE.—
- (1) IN GENERAL.—Not later than November 15 of each year, the Secretary, in cooperation with the Governor, shall review progress in implementing the Calfed Bay-Delta Program based on—
- Deadline.
- (A) consistency with the Record of Decision; and

(B) balance in achieving the goals and objectives of the Calfed Bay-Delta Program.

(2) REVISED SCHEDULE.—If, at the conclusion of each such annual review or if a timely annual review is not undertaken, the Secretary or the Governor determines in writing that either the Program implementation schedule has not been substantially adhered to, or that balanced progress in achieving the goals and objectives of the Program is not occurring, the Secretary and the Governor, in coordination with the Bay-Delta Public Advisory Committee, shall prepare a revised schedule to achieve balanced progress in all Calfed Bay-Delta Program elements consistent with the intent of the Record of Decision.

(c) FEASIBILITY STUDIES.—Any feasibility studies completed as a result of this title shall include identification of project benefits and a cost allocation plan consistent with the beneficiaries pay provisions of the Record of Decision.

SEC. 106. CROSSCUT BUDGET.

(a) IN GENERAL.—The President's budget shall include such requests as the President considers necessary and appropriate for the appropriate level of funding for each of the Federal agencies to carry out its responsibilities under the Calfed Bay-Delta Program.

(b) REQUESTS BY FEDERAL AGENCIES.—The funds shall be requested for the Federal agency with authority and programmatic responsibility for the obligation of the funds, in accordance with subsections (b) through (f) of section 103.

(c) REPORT.—Not later than 30 days after submission of the budget of the President to Congress, the Director of the Office of Management and Budget, in coordination with the Governor, shall submit to the appropriate authorizing and appropriating committees of the Senate and the House of Representatives a financial report certified by the Secretary containing—

(1) an interagency budget crosscut report that—

(A) displays the budget proposed, including any interagency or intra-agency transfer, for each of the Federal agencies to carry out the Calfed Bay-Delta Program for the upcoming fiscal year, separately showing funding requested under both pre-existing authorities and under the new authorities granted by this title; and

(B) identifies all expenditures since 1998 by the Federal and State governments to achieve the objectives of the Calfed Bay-Delta Program;

(2) a detailed accounting of all funds received and obligated by all Federal agencies and State agencies responsible for implementing the Calfed Bay-Delta Program during the previous fiscal year;

(3) a budget for the proposed projects (including a description of the project, authorization level, and project status) to be carried out in the upcoming fiscal year with the Federal portion of funds for activities under subsections (b) through (f) of section 103; and

(4) a listing of all projects to be undertaken in the upcoming fiscal year with the Federal portion of funds for activities under subsections (b) through (f) of section 103.

SEC. 107. FEDERAL SHARE OF COSTS.

(a) IN GENERAL.—The Federal share of the cost of implementing the Calfed Bay-Delta Program for fiscal years 2005 through 2010

in the aggregate, as set forth in the Record of Decision, shall not exceed 33.3 percent.

(b) **PAYMENT FOR BENEFITS.**—The Secretary shall ensure that all beneficiaries, including beneficiaries of environmental restoration and other Calfed program elements, shall pay for the benefit received from all projects or activities carried out under the Calfed Bay-Delta Program.

(c) **INTEGRATED RESOURCE PLANNING.**—Federal expenditures for the Calfed Bay-Delta Program shall be implemented in a manner that encourages integrated resource planning.

SEC. 108. COMPLIANCE WITH STATE AND FEDERAL LAW.

Nothing in this title—

(1) invalidates or preempts State water law or an interstate compact governing water;

(2) alters the rights of any State to any appropriated share of the waters of any body of surface or ground water;

(3) preempts or modifies any State or Federal law or interstate compact governing water quality or disposal;

(4) confers on any non-Federal entity the ability to exercise any Federal right to the waters of any stream or to any ground water resource; or

(5) alters or modifies any provision of existing Federal law, except as specifically provided in this title.

SEC. 109. AUTHORIZATION OF APPROPRIATION.

There are authorized to be appropriated to the Secretary and the heads of the Federal agencies to pay the Federal share of the cost of carrying out the new and expanded authorities described in subsections (e) and (f) of section 103 \$389,000,000 for the period of fiscal years 2005 through 2010, to remain available until expended.

TITLE II—MISCELLANEOUS

SEC. 201. SALTON SEA STUDY PROGRAM.

Deadline

Not later than December 31, 2006, the Secretary of the Interior, in coordination with the State of California and the Salton Sea Authority, shall complete a feasibility study on a preferred alternative for Salton Sea restoration.

SEC. 202. ALDER CREEK WATER STORAGE AND CONSERVATION PROJECT FEASIBILITY STUDY AND REPORT.

(a) **STUDY.**—Pursuant to Federal reclamation law (the Act of June 17, 1902 (32 Stat. 388, chapter 1093), and Acts supplemental to and amendatory of that Act (43 U.S.C. 371 et seq.)), the Secretary of the Interior (referred to in this section as the “Secretary”), through the Bureau of Reclamation, and in consultation and cooperation with the El Dorado Irrigation District, is authorized to conduct a study to determine the feasibility of constructing a project on Alder Creek in El Dorado County, California, to store water and provide water supplies during dry and critically dry years for consumptive use, recreation, in-stream flows, irrigation, and power production.

(b) **REPORT.**—

(1) **TRANSMISSION.**—On completion of the study authorized by subsection (a), the Secretary shall transmit to the Committee

on Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report containing the results of the study.

(2) **CONTENTS OF REPORT.**—The report shall contain appropriate cost sharing options for the implementation of the project based on the use and possible allocation of any stored water.

(3) **USE OF AVAILABLE MATERIALS.**—In developing the report under this section, the Secretary shall use reports and any other relevant information supplied by the El Dorado Irrigation District.

(c) **COST SHARE.**—

(1) **FEDERAL SHARE.**—The Federal share of the costs of the feasibility study authorized by this section shall not exceed 50 percent of the total cost of the study.

(2) **IN-KIND CONTRIBUTION FOR NON-FEDERAL SHARE.**—The Secretary may accept as part of the non-Federal cost share the contribution such in-kind services by the El Dorado Irrigation District as the Secretary determines will contribute to the conduct and completion of the study.

(d) **AUTHORIZATION OF APPROPRIATIONS.**—There is authorized to be appropriated to carry out this section \$3,000,000.

SEC. 203. FOLSOM RESERVOIR TEMPERATURE CONTROL DEVICE AUTHORIZATION.

Section 1(c) of Public Law 105-295 (112 Stat. 2820) (as amended by section 219(b) of Public Law 108-137 (117 Stat. 1853)) is amended in the second sentence by striking “\$3,500,000” and inserting “\$6,250,000”.

Approved October 25, 2004.

LEGISLATIVE HISTORY—H.R. 2828:

HOUSE REPORTS: No. 108-573, Pt. 1 (Comm. on Resources).

CONGRESSIONAL RECORD, Vol. 150 (2004):

July 9, considered and passed House.

Sept. 15, considered and passed Senate, amended.

Oct. 6, House concurred in Senate amendment.

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