

**Central Valley Project and State Water Project
Drought Contingency Plan
January 15, 2015 – September 30, 2015**

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This Drought Contingency Plan (DCP) is prepared by the U.S. Bureau of Reclamation (Reclamation) and California Department of Water Resources (DWR), by working with U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and California Department of Fish and Wildlife (CDFW) (collectively “the Agencies”). This DCP is submitted to the State Water Resources Control Board (SWRCB) on January 15, 2015, as required by the SWRCB’s final Temporary Urgency Change Order dated October 7, 2014. This DCP will be updated as necessary based on changing circumstances, which could include additional proposed modifications to SWRCB permit requirements. Most importantly, the DCP, as described below, is based upon hydrologic conditions as of January 1, 2015, thus we anticipate changes in drought response actions as the year’s hydrology unfolds.

The Agencies prepared an “Interagency 2015 Drought Strategy for the Central Valley Project and State Water Project” (2015 Drought Strategy) which was released as a working draft on December 12, 2014. A copy of the 2015 Drought Strategy is included with this DCP for ease of reference (See Reference 1). The 2015 Drought Strategy describes the anticipated coordination, process, planning and potential drought response actions for 2015. Not all of those actions are described specifically in this DCP, which is focused on articulating anticipated proposed modifications to SWRCB permit requirements. Other actions described in the 2015 Drought Strategy, as well as additional actions that may be proposed by stakeholders, will continue to be considered and analyzed by the Agencies for possible implementation in 2015.

I. Introduction and Purposes of the DCP

The State’s December 30, 2014, snow survey found a Sierra Nevada snowpack that is less than half of normal in terms of the amount and water content for this time of year. Furthermore, although November and December 2014 storms brought much needed precipitation, after three dry years, the State’s overall water storage levels remain far below average. Adequate storage is needed throughout the year and especially in dry times of the year in order for the Central Valley Project (CVP) and State Water Project (SWP) to supply human needs, continue repelling saltwater in the Delta, and provide for cold water needs of Chinook salmon. On January 17, 2014, California’s Governor issued a drought State of Emergency proclamation. Nearly one year later, drought conditions and the Governor’s proclamation remain in place. Over the last year and a half, Reclamation and DWR have worked closely with the fish and wildlife agencies to develop operational and contingency plans, as well as real-time coordinated operations and monitoring, in order to responsibly manage our State’s limited water supplies.

A. Purpose of the DCP

Since December 2013, State and federal agencies that supply water, protect fish and wildlife, and regulate water quality, have worked together to balance water supply, biological protections, and water quality during this drought. Following the Governor's emergency drought proclamation, on January 29, 2014, Reclamation and DWR sought a temporary modification to their water rights permits and licenses to respond to the drought conditions. On January 31, 2014, the Executive Director of the SWRCB issued an Order that granted temporary modification to Water Rights Decision 1641 (D-1641).

According to the petition and subsequent acknowledgement in the Order, Reclamation and DWR convened a Real Time Drought Operations Management Team (RTDOMT) comprised of representatives from Reclamation, DWR, State and federal fish and wildlife agencies, and the SWRCB to discuss more flexible operations of the Projects while protecting beneficial uses. Together, these agencies worked through existing statutory and regulatory obligations so that water operations could adjust quickly to changes in the weather and environment to support and improve water supply deliveries when possible while protecting water quality and fish and wildlife as required under state and federal laws and permits. The RTDOMT agencies recognize the importance of their efforts to minimize potential impacts from drought to provide food security, economic stability, and species protection in California.

It is difficult under these very dry conditions, and low reservoir storages, to balance the multiple critical uses of the limited water supplies. The purpose of this DCP is to provide an overview of current conditions in the CVP and SWP operated reservoirs and the Delta related to salinity and threatened fisheries, as well as an overview of available supplies for multiple beneficial uses as they relate to projected flow and storage conditions using 50%, 90%, and 99% exceedence probabilities for assumed hydrology. This DCP addresses projected water operations based on various hydrologic scenarios and potential adjustments to regulatory requirements through September 30, 2015.

The primary goals of this DCP are to:

1. Operate the CVP and SWP during this extreme drought to provide for, at a minimum, essential human health and safety needs throughout the CVP and SWP service areas, and preferably to minimize water supply shortages that harm the State's economy.
2. Control saltwater intrusion in the Sacramento-San Joaquin Delta by providing enough fresh water flow out of the Delta throughout dry months to repel saltwater that pushes inland on ocean-driven tides from San Francisco Bay.
3. Preserve enough cold water deep in Shasta Lake and other reservoirs to maintain cool river temperatures for various runs of Chinook salmon.
4. Maintain protections for State and federally endangered and threatened species and other fish and wildlife resources that are suffering from unavoidable impacts due to a drought of this magnitude and necessary drought-related actions.

B. Critical Operational Considerations

The operational forecasts developed for this DCP are designed to make the most efficient use of the limited water resources in 2015 for multiple beneficial uses while managing the potential risks of continued drought conditions into next year. There are three main objectives of this DCP. First, to continue operation of the Delta pumping facilities, taking advantage of opportunities to export natural or abandoned flow while maintaining Delta water quality and providing adequate protections for listed fish. Second, to conserve reservoir storage for use later in the water year. Third, to manage reservoir releases from June through September to concurrently benefit in-stream temperature objectives, meet Sacramento Valley in-basin needs and other water supplies, and preserve carry-over storage. This DCP includes considerations on how the Projects propose to generally operate under different hydrologic conditions, but the actual operation is still uncertain at this time because of changing hydrology. The hydrologic scenarios used in this DCP are discussed in the Projected Hydrology and Runoff section later in the document.

A key consideration is that even if the overall hydrology significantly improves this year, the water supply system, particularly in regions south of the Delta, is in a severely depleted state. The ability to deliver water south of the Delta is important to support health and safety, municipal and industrial, and refuge needs as well as to help communities and the State economy to recover from the severe dry conditions from the past several years.

The following are the Projects' critical operational considerations and objectives under on-going drought conditions.

i. Health and Safety

During this continuing drought, operations of the CVP and SWP must provide for, at a minimum, essential human health and safety needs throughout the CVP and SWP service areas, and retain the capability to provide for such minimum needs throughout water year (WY) 2015 and WY2016 if drought conditions continue. For clarity, Reclamation and DWR's consideration of these essential human health and safety needs includes adequate water supplies and water quality for drinking water, sanitation, and fire suppression, but does not extend to other urban water demands such as outdoor landscape irrigation. While most Californian communities may have reserve water supplies, some communities will require continued delivery of limited amounts of water through the CVP and SWP systems to meet these basic needs.

At DWR's request, the 29 public water agencies that contract for water from the SWP quantified their needs to meet demands for drinking, hygiene, and sanitation (collectively 55 gallons per capita per day (gpcd)), plus fire protection. Most SWP contractors have alternative sources of water, including groundwater and local reservoirs. The combined initial estimated need that DWR received from its contractors this past October was approximately 330 thousand acre-feet

(TAF) for calendar year 2015. Those needs are expected to fluctuate based on changes in availability from other sources.

Reclamation currently uses its draft Municipal and Industrial (M&I) Water Shortage Policy (Draft Policy) to determine the amount of water to be provided to its M&I contractors in those years where human health and safety needs govern CVP allocations to these contractors. Under these conditions, M&I contractors are required to update population estimates and non-CVP water source information to determine how much water will be needed from the CVP to meet their overall human health and safety demand for that year. The vast majority of CVP contractors throughout the entire service area that receive M&I water from the CVP have other available supplies to help meet their demand. Based upon application of the Draft Policy approximately 180 TAF of CVP water was allocated in WY2014 to help meet their health and safety needs with consideration of other available supplies. For WY2015, Reclamation intends to again apply the Draft Policy to determine the amount of CVP water available to meet health and safety needs. For planning purposes the 180 TAF is a reasonable estimate of minimum CVP M&I needs for WY2015 if dry conditions continue, however it is anticipated these needs may fluctuate based on changes in availability from other sources.

ii. Economic Impacts

Throughout the continuing drought, CVP and SWP systems will be operated to lessen critical economic losses to agriculture, municipal, and industrial uses due to water shortages through project water deliveries and by facilitating voluntary water transfers and exchanges to the extent possible, while balancing the needs of upstream storage, fishery and wildlife resource protection, and operational flexibility. A key to minimizing water supply shortages for economic purposes will be to take advantage of opportunities to export natural or abandoned flow in the winter and spring while maintaining Delta water quality and minimizing adverse effects to listed fish. Release of stored water in summer and fall will be managed to concurrently benefit in-stream temperature and wildlife objectives, meet Sacramento Valley in-basin needs, convey water south-of-Delta to meet water supply needs, and preserve system reservoir carry-over storage to meet objectives in WY2016.

iii. Fishery and Wildlife Protection

The CVP and SWP operations outlined in this DCP will continue to maintain protections for endangered species and other fish and wildlife resources that are suffering from unavoidable impacts due to drought and drought-related operations. The 2015 Drought Strategy calls out some elements that could be modified in order to balance all needs, while providing protections required by law. Any changes in operations that are ultimately proposed by Reclamation and DWR either through a Temporary Urgency Change Petition (TUCP) or under the Endangered Species Act (ESA) will be submitted by Reclamation and DWR for concurrent review under applicable laws, including the Federal ESA (FESA), California ESA (CESA), and the California Water Code.

A goal of this DCP for operations this spring through fall is to identify a balanced approach to meeting river temperatures, instream flows, and Delta protective actions. A primary consideration involves the need to conserve enough cold water in Project reservoirs early in the year to maintain cool water temperatures in the Sacramento River and tributaries to support the various runs of Chinook salmon and steelhead. If conditions remain dry, these same water supplies may be needed to provide for other critical operational considerations throughout 2015. The timing, flow rate, and rate of any flow changes for instream fishery needs will also vary with storage and hydrologic conditions.

iv. Refuge Water Supplies

One of the requirements of the Central Valley Project Improvement Act (CVPIA) passed by Congress in 1992 included providing water for state, federal and private managed wetlands in order to maintain and improve wetland habitat areas. This DCP includes plans to provide water in order to keep conveyance channels charged; support seasonal, riparian, permanent and semi-permanent wetlands; and to provide critical ESA habitat for protected species, such as the Giant Garter Snake and Tri-Colored Blackbird, for both north and south of the Delta refuges. Deliveries for summer, fall, and winter water will be consistent with the schedules submitted by the refuges and adjusted as allocations are modified.

Refuge water supply contracts also allow for reallocation of Level 2 supplies between and among refuges to improve supply flexibility, coordination, and management between Reclamation and wetland managers, and to lessen impacts to other water users.

For south of Delta refuges, when total demand from direct diversions from the Delta are not feasible, water from San Luis Reservoir can be made available to meet refuge needs. The CVPIA and refuge water supply contracts allow for flexibility to transfer water from refuges both within basin as well as north of the Delta to south of the Delta. Water transfers from north of Delta refuges to south of Delta refuges would occur to support priority habitat needs of south of Delta refuges given available capacity to facilitate the transfer. This water could be directly diverted or stored in San Luis Reservoir and used when most needed by south of the Delta refuges.

Level 2 represents a baseline of water supply needed to manage refuge wetlands. To maximize the quality and extent of habitat with a limited water supply, system operators will strive to deliver refuge water in accordance with refuge manager schedules and in conjunction with any Incremental Level 4 water supplies. System operators will work with refuge managers to deliver summer water and to transfer, reallocate, or exchange refuge water supplies to meet management and biological needs. Absent summer water deliveries to south of Delta refuges, critical habitat for Giant Garter Snake remains dry or extremely restricted because of water quality constraints and wetlands cannot produce essential forage needed for fall and winter migratory birds.

CVPIA refuge managers will be involved regularly throughout the water supply reevaluation and adjustment process. Refuge deliveries are included in CVP operational scenarios and forecasts, and calculations regarding anticipated reservoir levels into the late fall and early winter. The Agencies will continue to work together with water districts and non-governmental organizations to identify opportunities for delivery flexibility to accommodate management of water quality and the needs of salmonids and smelt at different life stages while minimizing impacts to Project and refuge operations.

v. Operational Flexibility

An underlying objective of this DCP is to maximize regulatory flexibility of Project operations while still remaining within existing law and regulations. Maximizing such flexibility allows Project operators to adjust quickly to changes in the weather and environment and to maximize the beneficial use of water to the greatest extent possible within the law. This goal of improving water supply includes facilitating water transfers for municipal and industrial, refuge, and agriculture to ensure the most critical supply needs are met throughout the service areas of the CVP and SWP and ensuring flow standards are as flexible as possible in order to capture multiple storm events under the otherwise dry conditions. This flexibility allows for Reclamation and DWR to improve upstream reservoir storage and deliver maximum available water supplies.

II. Initial Status of Conditions

A. Water Quality

Overall water quality in the Delta is much improved since the October 15, 2014 Drought Contingency Plan was submitted due to the above average precipitation in northern California during December. Salinity conditions are likely to remain manageable through January regardless of precipitation patterns. Conditions will continue to be monitored and Delta pumping may be reduced if necessary to increase Delta outflow to levels sufficient to manage salinity intrusion. If Delta Cross Channel (DCC) gates are open and exports are reduced to minimum health and safety requirements and conditions continue to trend dry, then the Project operators will carefully consider augmentation of Delta inflow with additional releases from upstream reservoirs. However, increasing inflows is not particularly effective in influencing south Delta water quality when the DCC gates are not opened.

The Projects do not anticipate opening the DCC gates in January, however, Reclamation and DWR would request opening the DCC gates before proposing any modifications to D-1641 Table 1 salinity objectives for M&I beneficial uses and Table 2 objectives for beneficial uses in the export area. This is because exceedences of these existing water quality objectives would elevate risk to public health as a result of disinfection byproducts related to the treatment of degraded water quality constituents potentially increasing beyond permissible contaminant levels.

B. SWP and CVP Upstream Reservoir Storage

In the Sacramento River watershed, storage in upstream reservoirs still remains well below average for this time of year. Lake Oroville as of January 14, 2015 storage was about 1.40 million acre-feet (MAF) (39% of capacity and 62% of historical average). Lake Shasta as of January 14, 2015 storage was about 1.93 MAF (42% of capacity and 66% of historical average), and Lake Folsom as of January 14, 2015 storage was approximately 444 TAF (45% of capacity and 91% of historical average).

In the San Joaquin watershed, storage in New Melones Reservoir was 552 TAF, which is just 23% of capacity and 39% of historical average and about half the storage at that time last year.

C. Biology

i. Salmonids

DWR and Reclamation operate to the 2009 NMFS Biological Opinion. DWR also operates under a consistency determination from CDFW on the Biological Opinion. As of January 14, 2015, the preliminary estimate of natural juvenile winter-run Chinook salmon emigration past the Red Bluff Diversion Dam is 402,529 based on USFWS rotary screw trap monitoring. To put this in perspective, this is less than half of the juveniles that resulted from broodyear 2011 when only approximately 824 adult winter-run returned to spawn. In addition, in anticipation of considerable water temperature impacts to incubating winter-run eggs and alevin, the Livingston Stone National Fish Hatchery (LSNFH) increased its winter-run broodstock collection to 388 adults, over triple the typical limit of 120. There are currently approximately 650,000 juvenile hatchery winter-run rearing at LSNFH and awaiting release in January or February.

As of January 13, 2015, the Delta Operations for Salmon and Sturgeon (DOSS) Team estimated the following distribution of winter-run and spring-run Chinook salmon:

Location	Yet to Enter Delta (Upstream of Knights Landing)	In the Delta	Exited the Delta (Past Chipps Island)
<i>Young-of-year (YOY) winter-run Chinook salmon</i>	< 5% (last week: same)	> 95% (last week: same)	< 5% (last week: same)
<i>YOY spring-run Chinook salmon</i>	50% - 75% (last week: ~50%)	25% - 50% (last week: ~50%)	< 5% (last week: same)
<i>Yearling spring-run Chinook salmon*</i>	< 5% (last week: same)	80% - 90% (last week: same)	< 15% (last week: same)

* No yearling spring-run Chinook salmon have been caught in 2014 monitoring. In general, very few yearling spring-run Chinook salmon are observed because of their relatively large size and strong swimming (and associated gear avoidance) abilities.

As of January 13, 2015, the WY2015 total for combined wild winter-run loss is 70, and the combined wild steelhead loss is 17.

ii. Delta Smelt

DWR and Reclamation operate to the 2008 USFWS Delta Smelt Biological Opinion. DWR also operates under a consistency determination from CDFW on the Biological Opinion. The Smelt Working Group (SWG) began meeting in late November to discuss current-year conditions. The 2014 Fall Midwater Trawl was completed in December; the computed index was 9, a new historic low. A special Spring Kodiak Trawl survey was completed in the third week of December 2014 to more precisely identify distribution of adult Delta Smelt. It revealed that most of the fish are likely in the Sacramento River portions of the estuary, especially the confluence region. In addition, two Delta Smelt were observed at Survey Station 815 (Prisoners Point) on the lower San Joaquin River. Early warning Delta Smelt monitoring at Jersey Point and Prisoners Point in the lower San Joaquin River began on December 1, 2014 and was conducted daily (to the extent conditions permitted) through January 5, 2015. Early warning Delta Smelt monitoring revealed an increase in Delta Smelt density at both locations in the latter half of December, indicating that storms in December had stimulated movement of Delta Smelt into the fresher water portions of the estuary. The special December Spring Kodiak Trawl was conducted during the series of storms that occurred, and likely partially reflects a post-storm distribution of fish. As of January 13, 2015 an expanded total of 56 adult Delta Smelt have been observed in salvage.

iii. Longfin Smelt

DWR operates to the 2009 Longfin Smelt Incidental Take Permit (ITP) issued by CDFW. In WY2014 juvenile Longfin Smelt were only observed at the salvage facilities between February and April. Salvage data from WY1994 through WY2014 indicate that salvage of adult Longfin Smelt is rare, and typically occurs between the months of December and February. Additionally, the majority of Longfin Smelt salvage typically occurs after February when juvenile fish rearing in the south and central Delta have grown large enough to be effectively screened by the fish collection facilities. As of January 13, 2015 no Longfin Smelt have been salvaged in WY2015 and none were detected in the central or south Delta during the December Fall Midwater Trawl or supplemental Spring Kodiak Trawl. Late December 2014 catches by the Chipps Island trawl suggested that spawning movement into the western Delta is currently ongoing, which was further confirmed through the “Early Warning Sampling” at Prisoner’s Point catching 2 ripe Longfin Smelt adults on January 4, 2015. The first Smelt Larvae Survey of January 2015 detected one larvae on the Lower San Joaquin River and two larvae in the Cache Slough complex (with 18 of 32 stations results processed). The CDFW through the SWG tracks distribution and salvage to assess risk and make appropriate operational recommendations consistent with the Longfin Smelt ITP.

iv. Refuge Water Supply

The CVPIA Refuge Water Supply Program supports 19 managed wetland areas. These areas are strategically located across the Central Valley to provide the core critical wetland habitat for migratory birds and wetland dependent wildlife, including threatened and endangered species such as the Giant Garter Snake and Tri-Colored Blackbird. The amount of flooded acreage in

most refuges is currently near average. This increase in flooded acres was due to the recent rain events and storm water flows associated with the December rainstorms. However, the dry January is leading to rapidly decreasing flooded acreages. January is within the peak season where as many as 5,000,000 waterfowl might be in the Central Valley. The decision to forgo summer irrigations during WY2014 has resulted in decreased forage availability and its expected food resources will be depleted in the near future. Monitoring is ongoing to track body condition and bird distribution.

Wetland habitats in the Central Valley are critical to different life stages of resident and migratory birds and resident wildlife, including threatened and endangered. Fall and winter wetlands are critical for waterfowl and other migratory birds. Summer wetlands are critical for Giant Garter Snake, Tri-Colored Blackbirds, breeding waterfowl, etc. Summer conditions continue to decline with the ongoing drought as evidenced by the continued decline of breeding waterfowl and tri-colored blackbirds in the Central Valley. While fall and winter conditions ended up well above expectation given private wetland acreages and flooded agriculture in the Sacramento Valley, not all regions of the Central Valley fared as well. Wetland conditions on private land mirrored the refuges as described above, whereas further south there is less habitat available, resulting in less habitat value and bird production.

III. Projected Hydrology and Runoff

The DWR's Hydrology and Flood Operations Office within the Division of Flood Management produces estimates of water year runoff for the major watersheds of the Sacramento and San Joaquin River basins beginning in January and updates these as part of the Department's Bulletin 120 update process from February through May of each year. The runoff forecasts utilized for this DCP are informed by precipitation, snowpack, runoff and other antecedent hydrologic conditions as they existed on January 1, 2015. These forecasts combine runoff associated with antecedent conditions with anticipated runoff resulting from precipitation predicted to occur for the remainder of the year under the 50%, 90%, and 99% hydrologic exceedence scenarios. For example the 90% exceedence hydrology assumes inflows from rainfall and snowmelt at levels that are likely to be exceeded with a 90% probability, or in other words, there is a 10% or less chance of actual conditions turning out to be this dry or drier from this point forward. The 50% probability is the 50/50 assumption - it is just as likely to be drier or wetter.

Operations forecasts utilize the hydrologic forecasts as inputs to simulate Project operations under various regulatory constraints and produce forecasted reservoir storages, releases, flows, and deliveries under the same set of hydrologic exceedences. These operations forecasts give general guidance for annual water delivery, storage management, and power planning purposes for each exceedence assumption. Actual hydrologic events act in time steps shorter than a month and are often unpredictable more than a few days to a week out. Day-to-day operations are also influenced by operating criteria such as those found in U.S. Army Corps of Engineers flood control manuals, D-1641, and the Biological Opinions. Output from forecast models as provided in this DCP represent system responses to the overlay of very specific operating

criteria on a generic set of hydrologic scenarios. These operations forecast updates are generally completed by the third week of the month.

IV. Operations Forecasts - Projected Supplies, Releases and Storage

The operational forecasts are based on a model using the January 1, 2015 50%, 90% and 99% hydrology. The base assumptions utilize existing storage conditions, actual precipitation and runoff occurred to date, forecasted precipitation based on the hydrology, projected water supply deliveries, and meeting existing water quality standards and fish and wildlife protections. The 99% hydrology scenario assumes the installation of emergency drought barriers will be necessary.

Under all the hydrologic scenarios, the model assumes fulfilling the contractual obligations between DWR and North Delta Water Agency. For the Feather River Settlement Contractors, no shortage provision is assumed under the 50% and 90% hydrology scenario, while the contractual 50% shortage provision is assumed to be triggered under the 99% hydrology. A final determination of the delivery to the Feather River Settlement contractors would be made based on the April forecasts. Deliveries to Sacramento River contractors and San Joaquin River Exchange contractors are not explicitly identified in these forecasts. Reclamation will be evaluating available supplies to these contractors based on February forecast projections.

The storage and flows under the January 1, 2015 50%, 90%, and 99% hydrologic scenarios are included in Attachment 1. The January 1, 2015 50%, 90%, and 99% exceedance scenarios were selected to show the likely ranges of hydrology for potential future conditions.

V. Projected D-1641 TUCP Requests

A. Summary Table

The Summary Table, included in Attachment 2, outlines the D-1641 Bay-Delta Standards with likely 2015 TUCP Requests by month for the 50%, 90%, and 99% hydrologic scenarios.

Near-Term Considerations

The January 1, 2015 50%, 90%, and 99% exceedance forecasts are included in Attachment 1. Each of these forecasts project monthly storage levels, reservoir releases, Delta pumping rates, and Delta outflow through the end of September 30, 2015. Much is still unknown about the hydrology for this year, and the hydrology will not follow these exact forecasts. For example, despite above normal rainfall in December in the Sacramento Basin, the hydrology has been dry since December 21, 2014. The following near-term actions are proposed as dry forecasts remain. The hydrology will likely continue to fluctuate between the scenarios making requests for modifications difficult to predict. Therefore, DWR and Reclamation will be seeking initial

modifications based on the current dry trend and the significant unknowns on the year's hydrology.

B. Near-Term Actions

Near-Term (1a): The minimum monthly Net Delta Outflow Index (NDOI) described in Figure 3 of D-1641 during the months of February and March could be requested to be modified to be no less than 4,000 cubic feet per second (cfs).

Near-Term (1b): The maximum Export Limits included in Table 3 of D-1641 could be requested to be modified as follows:

During February and March when footnote 10 of D-1641 is not being met, or the DCC gates are open during a period inconsistent with footnote 23 of D-1641, 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 will be no greater than 1,500 cfs on a 3-day running average. When precipitation and runoff events occur that allow the DCC to be closed and footnote 10 of D-1641 is being met [3-day average Delta Outflow of 7,100 cfs or electrical conductivity of 2.64 milliohms per centimeter on a daily or 14-day running average at the confluence of the Sacramento and the San Joaquin rivers (Collinsville station C2) if applicable¹], but any additional Delta Outflow requirements contained in Table 4 of D-1641 are not being met, then exports of natural and abandoned flows are permitted up to D-1641 Export Limits contained in Table 3 and, in compliance with applicable laws and regulations including ESA and CESA.

Near-Term (2): The DCC Gate Closure requirements included in Table 3 could be requested to be modified as follows:

The DCC gates may be opened during February and March as necessary to preserve limited storage in upstream reservoirs and reduce intrusion of high salinity water into the Delta while reducing impacts on migrating Chinook salmon. Any requests for opening DCC gates will utilize the DCC Matrix and shall be determined through the Real-Time Drought Operations Management Team Process.

Near-Term (3): Table 3 San Joaquin River flow requirements at Airport Way Bridge, Vernalis, for February and March could be requested to be modified as follows:

Base flow period averages shall be no less than 500 cfs.

C. Detailed Description of Anticipated D-1641 Modification Requests

Differences in snowpack distribution, variation among basin and sub-basin hydrologic circumstances, disparity among month to month hydrologic conditions, and other meteorological uncertainties can also effect real-time reservoir and Delta operations and the available water supply at any given time. The 50%, 90% and 99% probability exceedence levels presented

¹ The Standard does not apply in May and June if the best available estimate of the Sacramento River Index for the water year is less than 8.1 MAF at the 90% exceedence level.

here, as used in this document, are very general and are not the only drivers of what modifications may be needed in the future. The purpose of this document is to set forth generally foreseeable modifications in a 50%, 90% and 99% exceedence scenario.

Consequently, it may be necessary to request modifications earlier than the timeframes outlined in this document, or before the broader hydrology has reached the next described exceedence level, or as additional modifications in response to unforeseen future conditions present themselves.

It is anticipated that all D-1641 Delta requirements would be met if hydrologic conditions in the Sacramento Basins are at the 50% exceedence level or wetter; conditions in the San Joaquin River Basin will likely require wetter conditions before D-1641 requirements related to the San Joaquin River can reliably be met. However, because of the uncertainty of actual hydrologic conditions for the remainder of the winter/early spring period, the Projects will, at a minimum, request the D-1641 modifications identified under the 50% Probability section prior to the end of January 2015. This will help meet the primary goals of the DCP in the event that hydrologic conditions remain drier than normal.

Additional TUCP requests identified under the 90% Probability and 99% Probability sections would likely follow in subsequent months if those respective scenarios play out over the course of water year 2015.

January 1, 2015 50% Probability

If conditions which produced above average conditions for the Sacramento River basin through the end of December 2014 were to continue through the remainder of the water year, Reclamation and DWR forecast that all D-1641 requirements related to that basin could be met without major adverse impacts to other beneficial uses.

However, because conditions in the San Joaquin River basin have been much drier and storages are severely depleted on that system, modifications to the Vernalis flow standard are likely to be requested even under median hydrologic conditions as follows:

50% (1): Table 3 San Joaquin River flow requirements at Airport Way Bridge, Vernalis, for April through June could be requested to be modified as follows:

Base flow period averages shall be no less than 710 cfs. The 31-day pulse flow period shall consist of an overall pulse flow volume equivalent to 31-days at a flow rate to be determined based on subsequent forecasts and operations of the other San Joaquin River tributaries. The start date and flow schedule for the overall pulse flow volume of water shall be determined through consultation with CDFW, NMFS and USFWS (fisheries agencies).

January 1, 2015 90% Probability

In addition to near-term provisions, some or all of the following additional provisions would likely be requested in March if a 90% scenario were to play out in either the Sacramento or San Joaquin River basins

90% (1a): The minimum NDOI described in Figure 3 of D-1641 during the months of April, May, and June could be requested to be no less than 7,100 cfs (or electrical conductivity of 2.64 millimhos per centimeter on a daily or 14-day running average at the confluence of the Sacramento and the San Joaquin rivers (Collinsville station C2)).

90% (1b): The maximum Export Limits during March in conjunction with revised NDOI requirement:

When precipitation and runoff events occur that allow footnote 10 of D-1641 to be met [3-day average Delta Outflow of 7,100 cfs or electrical conductivity of 2.64 millimhos per centimeter on a daily or 14-day running average at the confluence of the Sacramento and the San Joaquin rivers (Collinsville station C2)], but any additional Delta Outflow requirements contained in Table 4 of D-1641 are not being met, then exports of natural and abandoned flows are permitted up to D-1641 Export Limits contained in Table 3 and in compliance with applicable laws and regulations including ESA and CESA.

90% (2): Table 3 San Joaquin River flow requirements at Airport Way Bridge, Vernalis, for April through June could be requested to be modified as follows:

Base flow period averages shall be no less than 500 cfs. The 31-day pulse flow period shall consist of an overall pulse flow volume equivalent to 31-days at a flow rate to be determined based on subsequent forecasts and operations of the other San Joaquin River tributaries. The start date and flow schedule for the overall pulse flow volume of water shall be determined through consultation with CDFW, NMFS and USFWS (fisheries agencies).

90% (3): Table 2 Western Delta Sacramento River could be requested to be modified follows:
Move the compliance location from Emmaton on the Sacramento River to Threemile Slough on the Sacramento River.

90% (4): The Table 3 Sacramento River at Rio Vista flow requirements from September 30, 2015 could be requested to be modified as follows:

Flows shall be no less than 2,500 cfs on a monthly average. The 7-day running average shall not be less than 2,000 cfs.

January 1, 2015 99% Probability

In addition to near-term provisions, some or all of the following additional provisions would likely be requested in March if a 99% scenario were to play out in either the Sacramento or San Joaquin River basins:

99% (1a): The minimum monthly NDOI described in Figure 3 of D-1641 during the months of April, May, and June could be requested to be no less than 4,000 cfs.

99% (1b): The maximum Export Limits included in Table 3 of D-1641 could be requested to be modified as follows:

During April, May, and June when footnote 10 of D-1641 is not being met, or the DCC gates are open during a period inconsistent with footnote 23 of D-1641, 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 will be no greater than 1,500 cfs on a 3-day running average. When precipitation and runoff events occur that allow the DCC to be closed and footnote 10 of D-1641 is being met [3-day average Delta Outflow of 7,100 cfs or electrical conductivity of 2.64 millimhos per centimeter on a daily or 14-day running average at the confluence of the Sacramento and the San Joaquin rivers (Collinsville station C2) if applicable], but any additional Delta Outflow requirements contained in Table 4 of D-1641 are not being met, then exports of natural and abandoned flows are permitted up to D-1641 Export Limits contained in Table 3 and, in compliance with applicable laws and regulations including ESA and CESA.

99% (2): The DCC Gate Closure requirements included in Table 3 could be requested to be modified as follows:

The DCC gates may be opened during April, May, and June as necessary to preserve limited storage in upstream reservoirs and reduce intrusion of high salinity water into the Delta while reducing impacts on migrating Chinook salmon. Requirements for closure of the DCC gates from February 15 through May 20 shall be determined through the Real-Time Drought Operations Management Process.

99% (3): Table 3 San Joaquin River flow requirements at Airport Way Bridge, Vernalis, for April through June could be requested to be modified as follows:

Both the base flow and pulse flow period averages will be determined based on subsequent forecasts and operations of the other San Joaquin River tributaries. The start date and flow schedule for any pulse flow volume of water shall be determined through consultation with the CDFW, NMFS and USFWS (fisheries agencies).

Emergency Drought Barriers

In addition to any TUCP provisions requested in the 99% scenario, at any time when the installation of Emergency Drought Barriers (EDB) is deemed to be necessary for human health and safety needs, the following modification provisions would likely be requested:

EDB (1): Table 2 Western Delta Sacramento River requirement at Emmaton would be requested to be suspended.

EDB (2): The minimum NDOI described in Figure 3 of D-1641 during the months of June, July, August, and September would be requested to be suspended.

EDB (3): The Table 3 Sacramento River at Rio Vista flow requirements for September would be requested to be suspended.

Installation of the EDB does not preclude DWR from fulfilling its North Delta Water Agency contractual obligations.

VI. Further Aspects of Potential Operations

A. Instream Flows

i. Trinity River

Spring flows on the Trinity River will be consistent with annual allocations as provided through the Trinity River Main-stem Fishery Restoration Record of Decision. Flows for the remainder of the year will make consistent with SWRCB order WR 90-5. Consistent with fish health criteria, releases to augment flows in the Lower Klamath River may be considered.

ii. Sacramento River

Flow releases at Keswick will be maintained at the minimum of 3,250 cfs this winter and spring as much as practicable to help conserve storage in Shasta Lake. Procedures consistent with the NMFS Biological Opinion will be applied through this period, and Reclamation will again work closely with the Sacramento River Settlement Contractors in scheduling their river diversions in a manner to help minimize the release of water prior to the start of the temperature management season. Likely starting in late May, flow releases will increase at Keswick to facilitate temperature management along the upper reach of the Sacramento River, and these increased flows will then be used to meet other Project purposes in the system.

iii. Clear Creek

Flows on Clear Creek will be consistent with the NMFS Biological Opinion and RPA actions. The timing of any prescribed pulse flows will be closely evaluated through technical teams to minimize effects on temperature management and/or ability to help meet other system flow needs.

iv. Feather River

Flows on the Feather River will be consistent with flow requirements on the Low Flow Channel and High Flow Channel on the Feather River and all temperature requirements at the Feather River Fish Hatchery and Robinson's Riffle for all periods as designated in the current FERC license which includes consultation by NMFS and USFWS, and the 1983 agreement between DWR and CDFW.

v. American River

Flows on the American River will be consistent with the provisions of the NMFS Biological Opinion and RPA actions. Flows in the winter and spring will generally follow the outline of the “American River Flow Management Standard”, with flows in the summer and into the fall intertwined with the temperature plan for Folsom Lake and the American River. Starting in June, flow releases will increase at Nimbus to facilitate temperature management along the American River, and these increased flows will then be used to meet other Project purposes in the system.

vi. Stanislaus River

Flows on the Stanislaus River will be consistent with the provisions of the NMFS Biological Opinion and RPA actions. Generally flows in the winter and spring will follow the “Appendix 2e” schedules (from the NMFS Opinion) as modified through the interagency Stanislaus Operations Group. Given the severely depleted storage at New Melones Lake, minimum flows will be maintained as much as possible. The requested modifications to objectives on the lower San Joaquin River at Vernalis are intended to conserve water in New Melones Lake to help balance the competing needs of the Stanislaus River and conditions on the lower San Joaquin River.

B. Additional Fishery Actions

The Agencies have described in detail other potential operations to maintain adequate protections for State and federally listed endangered and threatened species and other fish and wildlife resources in the event of continued dry hydrology in the 2015 Drought Strategy. These specific measures relate to potential flexibility in implementing Old and Middle River (OMR) flows, temperature management on the Sacramento River, LSNFH hatchery operations, DCC gate operations, and emergency drought barriers. (The 2015 Drought Strategy is included as Reference 1).

i. Initial Temperature Management Conditions – Sacramento River

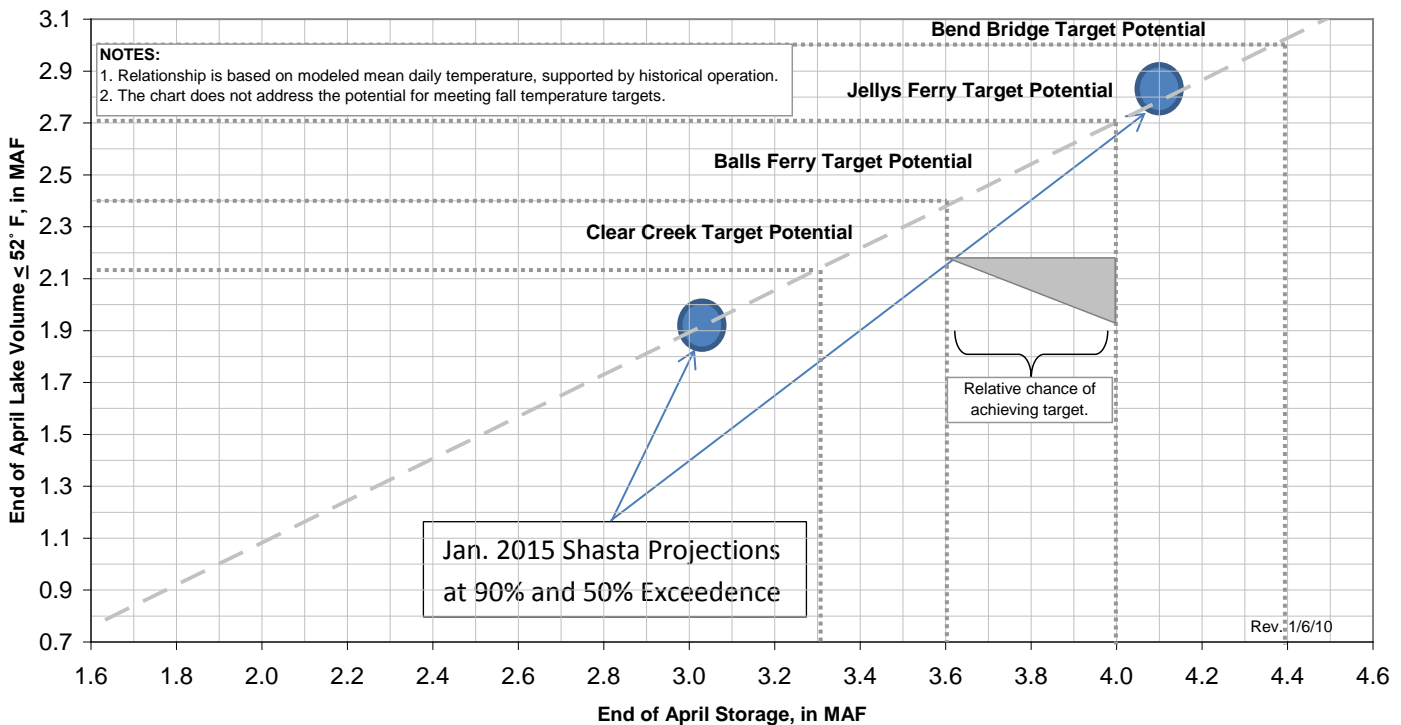
The current suite of runoff projections based on the January 1 forecasts (unadjusted based on observed conditions in January) suggests a significant range of possible temperature management outcomes for the Sacramento River. The range is more pronounced than some of the other aspects of this DCP given that the seasonal inflow to Shasta Lake is the prime driver of temperature performance on the Sacramento River, and the range of the potential inflow to Shasta Lake is sizable this early in the water year. Specifically, the January through April inflow projections currently range from 1.45 MAF in the 99% exceedence forecast, 2.00 MAF in the 90%, 3.05 MAF in the 50% exceedence forecast.

Another important consideration this year is that diversions from the Trinity River basin to the Sacramento River will be more limited than in past years given the relatively low storage projections at Trinity Lake and anticipated Trinity River operations this season.

Based on forecasted projections, the upper Sacramento River water temperature compliance locations could range from a location upstream of the Clear Creek confluence in a 90% exceedence scenario, to the Jelly's Ferry location in a 50% exceedence scenario.

Under the 99% hydrology temperature compliance will likely utilize the procedures outlined in the NMFS Winter-run Contingency Plan (Appendix-D of the April 2014 CVP and SWP Drought Operations Plan).

**Lake Shasta End of April Storage
Potential for Meeting Compliance Point Target of 56° F (Apr-Sep)**



Shasta Lake Projections
(based on exceedence forecasts including January)

Exceedence Forecast	April 30 Storage Projection (TAF)	April 30 Elevation Projection (ft)
90%	3,030	1,009
50%	4,140	1,053

For the 90% exceedence scenario, the maximum Shasta Lake elevation is projected to be only 1009 feet. This lake level would limit the flexibility of the Shasta Temperature Control Device (TCD) to only the Middle, Lower and Side gates to manage the coldwater pool. This is similar to

conditions of Water Year 2014. The Upper gates require a lake elevation of about 1,035 feet to be functional in managing water temperatures.

By contrast, in the 50% exceedence scenario, the operation of the Shasta TCD would utilize all the gate levels, and combined with the increase in available cold water, Reclamation could potentially attain the Jelly's Ferry compliance location this year.

ii. Hatchery Winter-run

In order to protect juvenile hatchery winter-run from exposure to the hydrodynamic effects from exports, Livingston Stone National Fish Hatchery managers will coordinate with DOSS to time the hatchery release of winter-run chinook with adequate hydrologic conditions, and track their movement down the Sacramento River into and through the Delta utilizing the acoustically-tagged winter-run released at approximately the same time. Real-time acoustic receivers will be deployed along the Sacramento River and Delta at various locations. DOSS will review the real-time acoustic tag data to determine the likely timing and distribution of the hatchery winter-run in the Sacramento River and into the Delta, and advise NMFS and Water Operations Management Team of potential risk of hatchery winter-run to the influences of the hydrodynamic effects of increased exports during sporadic storm events.

iii. Delta Cross Channel Gates

Based on current and projected water quality in the Delta, and at least 3 weeks prior to any need to open the DCC gates, Reclamation and DWR will determine whether adjustments in the timing of the opening of the DCC gates should occur in order to address the prospects of elevated salinities in the Delta (Action IV.1.2). The DCC gate triggers matrix will be used to determine risk to species and DCC gate operation in the event the DCC gates are opened to address water quality or supply concerns. The triggers outlined in this matrix provide direction for when the gates may remain open and a method that balances water supply and fishery objectives in the Delta.

iv. Emergency Drought Barriers

If winter forecasts show there will not be enough water in upstream reservoirs to repel the saltwater and meet health and safety and other critical needs, then installation of Emergency Drought Barriers will be considered to lessen water quality impacts. Excessive salinity increases in the Delta could render the water undrinkable by the 25 million Californians and unusable by the farms reliant upon this source. Temporary rock (rip-rap) Emergency Drought Barriers may be installed at up to three locations in the Delta during drought conditions in 2015 or in a subsequent year if necessary to manage salinity in the Delta when there is not enough water in upstream reservoirs to release to rivers to repel the saltwater. An interagency group is evaluating barrier installation – at this time, the following timeline is considered: The temporary rock barriers may be installed on or about May 7 in West False River and no sooner than May 22 at the Sutter Slough and Steamboat Slough. Construction would require approximately 30-60 days. Barrier removal would commence on or about October 1 and would require approximately 30-60 days for Sutter and Steamboat Sloughs and approximately 45-60 days for

West False River. The Agencies continue to work together to ensure compliance with appropriate State and federal laws.

In the event barriers are installed, barrier-associated biological and physical monitoring will be initiated in a timely fashion, in some cases in advance of barrier installation. Additionally, as described in Section V B, modifications to D-1641 standards would need to be requested.

VII. Real Time Monitoring Efforts to Inform Operations

A. Delta Smelt Early Warning Surveys

The current drought has highlighted the need to improve the array of information that is collected to support management decisions pertaining to the effect of winter/spring exports on the Delta Smelt population. Reclamation and USFWS coordinated for several months to develop early warning surveys to provide information on Delta Smelt distribution that will inform water operations in WY2015. The overall intent for early warning surveys is to inform USFWS and others whether, during weather events and freshets, substantial numbers of Delta Smelt are moving, or being moved, into areas potentially subject to entrainment. This information has helped to inform export operational decisions and allowed for flexibility in maximizing export opportunities early this year. The early warning surveys were initiated in December 2014 and will continue through April 2015. Reclamation, USFWS, CDFW and DWR are collaborating to leverage available funds from all agencies and integrate Delta Smelt and salmonid trawl efforts to improve efficiency.

Now that the storm systems in December have abated, per the study design weekly sampling is now occurring and will continue until weather or other circumstances indicate a need to return to daily sampling.

B. Salmonids Near-term Drought Monitoring

In WY2015, various salmonid monitoring efforts will continue, as long as drought conditions continue. Additional trawling and beach seining in the northern Delta, more frequent sampling at rotary screw traps further upstream in the Sacramento River Basin, and implementation of a DCC gate operations trigger matrix would accompany any modifications in operations of the DCC gates from those specified in the NMFS Biological Opinion or D-1641. Temperature and dissolved oxygen probes are planned to be deployed within redds of fall-run and winter-run salmon to monitor and allow for management of water quantity (minimizing the effects of dewatering) and water quality. An additional Kodiak trawl was conducted in December to monitor distributions of Delta Smelt and salmonids, and the early warning trawling planned for Jersey Point and Prisoner's Point will monitor salmonid species as well. This early warning trawling will provide information from additional locations in the Delta about the presence of salmonids, which will help to inform management decisions about OMR reverse flows. An increase in sampling duration at the salvage facilities was considered as part of the monitoring plan to minimize inaccuracies in expanded salvage counts and loss calculations. However,

after several discussions, DOSS advised NMFS not to increase the sampling duration because the disadvantages would outweigh the potential benefits.

Other studies on migration paths and mortality will continue in 2015 for winter-run and spring-run salmon, as well as steelhead and sturgeon, to improve scientific knowledge about the population dynamics of these species. An enhanced Particle Tracking Model that includes simulation of fish migration behavior will be tested in a pilot project to verify accuracy and the ability of the model to inform real-time management decisions. Using recent data, the upstream temperature model will also be recalibrated to improve its ability to forecast temperature conditions in the Sacramento River. A feasibility study on the use of passive integrated transponders to monitor the movement and fate of salmonids will also be conducted in 2015 to determine if this technology could be usefully deployed in California to improve knowledge of salmonid populations.

This monitoring in 2015 and beyond was developed to improve our understanding of timing and distribution of species in the Delta, as well as inform targeted research and fill data gaps that further detail risks resulting from water operations.

DROUGHT CONTINGENCY PLAN
(January 15, 2015 - September 30, 2015)

January 1 - 50% HYDROLOGIC EXCEEDENCE

END OF MONTH STORAGES (TAF)

RESERVOIRS	2015								
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Trinity	917	1019	1172	1287	1199	1080	958	867	783
Shasta	2188	2843	3498	3835	3898	3611	3195	2856	2733
Folsom	491	486	587	646	878	935	825	694	642
Oroville	1463	1933	2431	2742	2900	2910	2374	1883	1523
New Melones	583	635	684	675	655	597	502	397	322

MONTHLY AVERAGE RELEASES (CFS)

RESERVOIRS	2015								
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Trinity	300	300	300	550	4200	2100	1100	450	450
Sacramento	3250	3250	3250	5000	7000	10700	11050	9500	6200
American	900	5000	4700	4550	2100	2300	3400	3700	2250
Feather	950	950	800	1800	1050	1050	8600	8050	6950
Stanislaus	200	200	200	650	750	500	350	350	250

DELTA SUMMARY (CFS)

	2015								
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Rio Vista Flows	11150	27100	22300	13950	8200	6250	10600	10100	8850
Sac River at Freeport	13250	31750	26350	17250	11450	11700	19800	18950	16600
SJ River at Vernalis	1450	3150	3000	2650	3100	1400	1100	1050	950
Computed Outflow	13000	31900	27150	17950	11400	7500	6500	5450	4450
Combined Project Pumping	3550	5100	3300	1550	1600	2400	10500	11250	11200

January 1 - 90% HYDROLOGIC EXCEEDENCE

END OF MONTH STORAGES (TAF)

RESERVOIRS	2015								
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Trinity	888	926	1007	1075	967	862	761	658	599
Shasta	2036	2389	2751	2889	2815	2566	2261	1994	1875
Folsom	465	537	640	642	646	488	316	229	210
Oroville	1403	1641	1926	2067	2037	1874	1682	1523	1485
New Melones	543	544	537	492	411	333	255	180	123

MONTHLY AVERAGE RELEASES (CFS)

RESERVOIRS	2015								
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Trinity	300	300	300	550	2900	800	450	450	450
Sacramento	3250	3250	3250	4500	6400	8750	8500	7750	4900
American	900	1700	1900	3150	2500	4000	3800	2550	1350
Feather	950	950	800	1050	1300	1950	1400	1300	1200
Stanislaus	200	200	300	550	500	550	400	350	250

DELTA SUMMARY (CFS)

	2015								
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Rio Vista Flows	9450	12200	9800	7400	5800	5300	2650	2600	2600
Sac River at Freeport	11300	14550	12000	9700	8600	10450	8550	8350	7800
SJ River at Vernalis	1050	1400	1600	1450	1450	1050	900	750	750
Computed Outflow	9650	12750	12250	9250	7100	7100	4250	4350	4200
Combined Project Pumping	3550	4350	1800	1150	1150	1200	1250	1400	2300

Footnote: These forecast numbers include adjustments to January inflows based upon observed conditions through mid-January.

DROUGHT CONTINGENCY PLAN

(January 15, 2015 - September 30, 2015)

January 1 - 99% HYDROLOGIC EXCEEDENCE

END OF MONTH STORAGES (TAF)

RESERVOIRS	2015								
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Trinity	860	894	920	929	843	769	704	637	576
Shasta	1966	2173	2393	2424	2242	1843	1397	1070	936
Folsom	440	499	523	520	484	347	251	217	182
Oroville	1374	1516	1704	1762	1681	1468	1250	1027	1023
New Melones	543	544	537	491	409	331	254	178	122

MONTHLY AVERAGE RELEASES (CFS)

RESERVOIRS	2015								
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Trinity	300	300	300	600	1500	800	450	450	450
Sacramento	3250	3250	3250	4500	7000	10000	9850	7800	4900
American	900	800	1950	2000	1750	3050	2200	1200	1100
Feather	950	950	800	1650	1700	2700	2400	3100	950
Stanislaus	200	200	300	550	550	550	400	350	250

DELTA SUMMARY (CFS)

	2015								
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Rio Vista Flows	7800	7550	7050	6100	5750	5850	2900	2600	2000
Sac River at Freeport	9350	9200	8800	8200	8550	11200	8950	8400	6950
SJ River at Vernalis	1050	850	850	1750	1550	300	250	350	350
Computed Outflow	7050	7100	8050	7800	7100	7100	4200	4300	4050
Combined Project Pumping	3550	3350	1300	900	850	900	900	900	900

Footnote: These forecast numbers include adjustments to January inflows based upon observed conditions through mid-January.

D-1641 Bay-Delta Standards

With Likely 2015 TUCP Requests

CRITERIA	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015
Jan 1 - 50% Hydrology								
• Outflow Spring X2 Minimum Outflow - mon.	Near-Term TUCP							
• River Flows @ Rio Vista - min. mon. avg. @ Vernalis: Base -min. mon. avg. Pulse objective	Near-Term TUCP		710 cfs	T.B.D.	710 cfs	710 cfs	710 cfs	
• Delta Cross Channel Gates	N-T TUCP							
• Salinity EC - Emmaton								

Jan 1 - 90% Hydrology									
• Outflow Spring X2 Minimum Outflow - mon.	Near-Term TUCP		7100 cfs	7100 cfs	7100 cfs				
• River Flows @ Rio Vista - min. mon. avg. @ Vernalis: Base -min. mon. avg. Pulse objective	Near-Term TUCP		500 cfs	T.B.D.	500 cfs			2500 cfs	
• Delta Cross Channel Gates	N-T TUCP								
• Salinity EC - Emmaton			Requirement Moved to Three Mile Slough						

Jan 1 - 99% Hydrology									
• Outflow Spring X2 Minimum Outflow - mon.	Near-Term TUCP		4000 cfs	4000 cfs	Suspended				
						Suspended			
• River Flows @ Rio Vista - min. mon. avg. @ Vernalis: Base -min. mon. avg. Pulse objective	Near-Term TUCP		T.B.D.	T.B.D.	T.B.D.			Suspended	
• Delta Cross Channel Gates	N-T TUCP		Conditional DCC Opening						
• Emergency Drought Barriers				Construction	Operational				
• Salinity EC - Emmaton			Suspended						