Tauriainen, Andrew@Waterboards

From: lyris@swrcb18.waterboards.ca.gov
Sent: Friday, September 02, 2016 2:57 PM
To: Tauriainen, Andrew@Waterboards
Subject: Informational Order Emergency Regulation
Attachments: Regulatory Notice August 2016.pdf

This is a message from the State Water Resources Control Board

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At its August 16, 2016, meeting, the State Water Resources Control Board adopted Resolution No. 2016-0045 to re-adopt a proposed drought emergency regulation regarding Informational Orders.

The Regulation, resolution, regulation and information materials, emergency regulation digest, and appendices are found at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/emergency_regulations.shtml The Notice of Proposed Emergency Regulation is also attached.

If you have questions regarding this matter, please contact Kathy Mrowka at Kathy.Mrowka@waterboards.ca.gov or (916) 341-5363.

Informational Order
Emergency Regulations Digest

August 16, 2016

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Title 23, Division 3, Chapter 2, Article 24, re-adopt Section 879, subdivision (c) to read:

§ 879. Reporting

(c)(1) The Deputy Director may issue an informational order, as provided in paragraph (2), in any of the following circumstances:

(A) Upon receipt of a complaint that staff determines to merit investigation alleging interference with a water right by a water right holder, diverter or user;

(B) Where a water right holder, diverter or user asserts a right to divert under a pre-1914 or riparian right in response to an investigation, curtailment order or any notice of curtailment, and no Statement of Water Diversion and Use for such right was on file with the Board as of January 17, 2014;

(C) Where a water right holder, diverter or user fails to respond to an investigation, curtailment order or any notice of curtailment, or responds by asserting a right to divert under a contract or water transfer for which the Board has not approved a change petition and for which no record has been filed with the Board; or

(D) Upon receipt of information that indicates actual or threatened waste, unreasonable use, unreasonable method of diversion, or unlawful diversions of water by any water right holder, diverter or user.

(2) The Deputy Director may issue an order under this article requiring a water right holder, diverter or user to provide additional information related to a diversion or use described in (c)(1), including the claim of right; property patent date; the date of initial appropriation; diversions made or anticipated during the current drought year; basis or right and amount of water transfer not subject to approval of the Board or Department of Water Resources; or any other information relevant to authenticating the right or forecasting use and supplies in the current drought year.

(3) Any party receiving an order under this subdivision shall provide the requested information within thirty (30) days. The Deputy Director may grant additional time for submission of information supporting the claim of right upon substantial compliance with the 30-day deadline and a showing of good cause.

(4) The failure to provide the information requested within 30 days or any additional time extension granted is a violation subject to civil liability of up to $500 per day for each day the violation continues pursuant to Water Code section 1846.

(5) Orders issued under previous versions of this subdivision shall remain in effect and shall be enforceable as if adopted under this version. The provisions of Article 12 of this Chapter (commencing with section 768) shall govern petitions for reconsideration of orders issued under this subdivision.

(6) The Deputy Director may delegate the authorities under this subdivision to an Assistant Deputy Director for the Division of Water Rights.

Authority: Sections 1058 and 1058.5, Water Code.
Reference: Sections 100, 183, 186, 187, 275, 348, 1050, 1051, 1058.5 and 1846 Water Code.

FINDING OF EMERGENCY

The State Water Resources Control Board (State Water Board or Board) finds that an emergency exists due to severe drought conditions and that adoption of the proposed emergency regulation is necessary to address the emergency. Specifically, immediate action is needed to effectively and efficiently administer and enforce the state's water rights system in light of significant reductions in water availability due to the current drought.

On January 17, 2014, Governor Brown declared a drought state of emergency. On March 1, 2014, Governor Brown signed a drought relief package, Senate Bill 104 (Statutes 2014; Chapter 3; Committee on Budget and Fiscal Review), to, among other things: provide funding to improve conservation and emergency supplies; reduce fire risk and increase fire-fighting capabilities; and expand the State Water Resources Control Board's (State Water Board or Board) authority under Water Code section 1058.5 and increase penalties for unauthorized diversion of water. In addition, the drought declaration suspended California Environmental Quality Act (CEQA) review for many of the state's responses to the drought. On April 25, 2014, the Governor issued a Proclamation of a Continued State of Emergency to strengthen the state's ability to manage water and habitat effectively in drought conditions. The April 2014 Proclamation ordered that the provisions of the January 2014 Proclamation remain in full force and also added several new provisions. On December 22, 2014, in light of the continued lack of rain, Governor Brown issued Executive Order B-28-14, which extended the CEQA suspension for drought emergency regulations through May 31, 2016.

On April 1, 2015, the Governor issued Executive Order B-29-15 (Executive Order) to strengthen the state's ability to manage water and habitat effectively in drought conditions and called on all Californians to redouble their efforts to conserve water. The Executive Order finds that the on-going severe drought conditions present urgent challenges across the state including water shortages for municipal use and for agricultural production, increased wildfire activity, degraded habitat for fish and wildlife, threat of saltwater contamination, and additional water scarcity if drought conditions persist. The Executive Order confirms that the orders and Proclamations, April 25, 2014 Proclamation, and Executive Orders B-26-14 and B-28-14, remain in full force and effect.

On November 13, 2015, the Governor issued Executive Order B-36-15 which continues the orders and provisions contained in the January 17, 2014 and April 25, 2014 Proclamations and Executive Orders B-26-14, B-28-14, and B-29-15, with amendments.

On January 23, 2015, the State Water Board issued a Notice of Surface Water Shortage and Potential for Curtailment of Water Right Diversions. The notice advised that if dry weather conditions persist, the State Water Board will notify water right holders in critically dry watersheds of the requirement to limit or stop diversions of water under their water right, based on their relative water right seniority.

In 2014 and 2015, the State Water Board determined that water demands exceeded available water supply in specific critically dry watersheds. Water right holders, diverters and users were advised to stop diversion pursuant to certain priorities of right because information available to

the State Water Board indicated that there was insufficient natural flow to support diversions under those priorities of right. Diversion pursuant to a claim of right when there is no available water under the priority of the right is an unauthorized diversion and use and is subject to enforcement by the State Water Board.

As of November, 2015, the State Water Board mailed Notices of Surface Water Shortage and Potential for Curtailment of Water Right Diversions to over 9,000 water right holders, diverters or users. The notifications informed diverters that due to dry hydrologic conditions there was insufficient surface flow to divert under their priority of right. Continued diversions pursuant to rights covered by the notices under such conditions would be unauthorized.

Emergency Regulation Adoption

Water Code section 1058.5 grants the State Water Board the authority to adopt emergency regulations in certain drought years in order to: ”prevent the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion, of water, to promote water recycling or water conservation, to require curtailment of diversions when water is not available under the diverter’s priority of right, or in furtherance of any of the foregoing, to require reporting of diversion or use or the preparation of monitoring reports.”

Emergency regulations adopted under Water Code section 1058.5 remain in effect for up to 270 days. The finding of emergency is not subject to review by the Office of Administrative Law.

In this document, the State Water Board is providing the necessary specific facts demonstrating compliance with Government Code section 11346.1, subdivision (b)(2) and Water Code section 1058.5, subdivision (a).

Government Code section 11346.1, subdivision (a)(2) requires that, at least five working days prior to submission of the proposed emergency action to the Office of Administrative Law, the adopting agency provide a notice of the proposed emergency action to every person who has filed a request for notice of regulatory action with the agency. After submission of the proposed emergency to the Office of Administrative Law, the Office of Administrative Law shall allow interested persons five calendar days to submit comments on the proposed emergency regulations as set forth in Government Code Section 11349.6.

The information contained within this finding of emergency provides the information necessary to support the State Water Board’s emergency rulemaking under Water Code section 1058.5 and also meets the emergency regulation criteria of Government Code section 11346.1 and the applicable requirements of section 11346.5.

Evidence of Emergency

The U.S. Drought Monitor has classified almost the entire state of California as experiencing severe to exceptional drought conditions. In most years, California receives about half of its

precipitation in the months of December, January and February, with much of that precipitation falling as snow in the Sierra. Only a handful of large winter storms can make the difference between a wet year and a dry one. In normal years, the snowpack stores water during the winter months and releases it through melting in the spring and summer to replenish rivers and reservoirs. However, warm and relatively dry weather conditions this year have reduced the amount of snowpack in California's mountains. As of May 1, 2015, Sacramento Region cumulative precipitation was 56 percent of average for that date (8-Station Index). However, most of that precipitation fell as rain, and Northern Sierra snow water content remained extremely low, at 3 percent of average for that date. Similarly, Central and Southern Sierra snowpack is at 2 and 0 percent of average, respectively. The Sierra snow water content is the lowest in recorded history. Water levels in almost all of the state's key water supply reservoirs were significantly below average, and groundwater levels have fallen considerably in many basins throughout the state. Due to the dry conditions at the start of 2015, on January 23, 2015, the State Water Board issued a Notice of Surface Water Shortage and Potential for Curtailment of Water Right Diversions.

As of July, 2015, the State Water Board sent Notices of Surface Water Shortage and Potential for Curtailment of Water Right Diversions to over 9,000 water right holders, diverters or users in the Sacramento-San Joaquin Rivers watershed and Delta, and in the Scott River watershed in Siskiyou County. Some of the water rights affected by these notices included senior water rights. In 2015, the State Water Board conducted roughly 1,200 field inspections to determine compliance with the State's water rights system during this severe drought emergency. A similar program was conducted in 2014.

California is currently in the fourth year of drought. Water year 2012 was categorized as below normal, calendar year 2013 was the driest year in recorded history for many parts of California, water year 2014 was the third driest in the 119 years of record, and water year 2015 had the lowest snowpack on record. In May 2013, Governor Edmund G. Brown, Jr. issued Executive Order B-21-13, which directed the State Water Board and the Department of Water Resources (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.

Governor Brown's January 17, 2014 Drought Emergency Proclamation, among other things, recognized that changes to water supplies and diversions might be necessary to protect salmon and steelhead, to maintain water supplies, and protect water quality. The Proclamation ordered the State Water Board to "put water right holders throughout the state on notice that they may be directed to cease or reduce water diversions based on water shortages," which the State Water Board did on January 17, 2014. The notice encourages advanced conservation planning and suggests that water right holders look into the use of alternative water supplies, such as groundwater wells, purchased water under contractual arrangements and recycled wastewater. On February 18, 19 and 26, 2014, the State Water Board held public workshops to discuss the drought and responses to it. The workshops included staff presentations on potential curtailments to protect senior water right holders.

On March 1, 2014, Governor Brown signed legislation to assist drought-affected communities and provide funding to better manage local water supplies. The drought relief package, among other things, provided funding to improve water conservation, emergency supplies, reduce fire risk, and increase fire-fighting capabilities. The drought relief package also expanded the State Water Board's existing emergency regulation authority under Water Code section 1058.5 and made statutory changes to ensure existing water rights laws are followed, including streamlining authority to enforce water rights laws and increasing penalties for illegally diverting water during drought conditions. (SB 104) On April 25, 2014, Governor Brown issued a Proclamation of a Continued State of Emergency related to the drought. The Proclamation finds that California's water supplies continue to be severely depleted and, among other things, suspends environmental review under the California Environmental Quality Act (CEQA) for certain activities, including adoption of emergency regulations by the Board pursuant to Water Code section 1058.5.

On December 22, 2014, Governor Brown issued Executive Order B-28-14 based on the continued severe drought conditions, which extended the suspension of CEQA through May 31, 2016.

On April 1, 2015, the Governor issued Executive Order B-29-15 (Executive Order) to strengthen the state's ability to manage water and habitat effectively in drought conditions and called on all Californians to redouble their efforts to conserve water. The Executive Order finds that the on-going severe drought conditions present urgent challenges across the state including water shortages for municipal use and for agricultural production, increased wildfire activity, degraded habitat for fish and wildlife, threat of saltwater contamination, and additional water scarcity if drought conditions persist. The Executive Order confirms that the orders and Proclamations, April 25, 2014 Proclamation, and Executive Orders B-26-14 and B-28-14, remain in full force and effect.

In April 2014, the State Water Board began posting information regarding lack of water availability and anticipated supply shortfalls for watercourses in several watersheds. Analyses for the Sacramento-San Joaquin River watershed, the Tulare Lake Basin, the Russian River watershed and the Eel River watershed were made available in 2014. The analyses for the Sacramento-San Joaquin Rivers and Scott River watersheds continued to be updated through 2015. The State Water Board also met with stakeholder groups from the various watersheds to share data. These meetings assisted the State Water Board in quality control of its demand data and assisted in a more real-time temporary lifting of curtailments to allow diversions during storm event in November of 2014 and November of 2015.

As recognized in Water Code section 106.3, access to water for human consumption, cooking and sanitation is a basic human right. Cities, counties and water districts across the state have enacted drought emergency measures to conserve supplies. Fire risk is also greatly increased throughout the state due to the drought. Preliminary data from CAL FIRE show 6,227 fires burned 307,592 acres in California between January 1, 2015 and November 28, 2015. The five-year average for the same interval of time is 4,439 fires and 109,587 acres burned.

Need for the Regulation

Immediate action is needed to prevent the waste and unreasonable use of water and effectively and efficiently administer and enforce the State's water rights system in light of limited water availability during the ongoing drought. The State Water Board will likely need to curtail some junior water diversions in 2016 when natural flows decrease, making water only available for: (1) senior water right users; (2) minimum flows for migration of state and federally listed fish in priority water bodies; and (3) minimum health and safety needs.

In addition, the State Water Board needs an enforceable mechanism to investigate drought-related water right matters, including (1) complaints of interference with water rights by other water right holders, diverters or users; (2) claims of previously unasserted riparian or pre-1914 right in response to curtailment notices or investigations; (3) claims of a right to divert under a contract or water transfer not previously approved by or filed with the Board; and (4) receipt of information that indicates actual or threatened waste, unreasonable use, unreasonable method of diversion, or unlawful diversions.

In order to best accomplish these activities, the State Water Board needs access to better and more current information regarding water rights, water use and water needs in a process that allows the Board to use the information during the drought.

On March 17, 2015, the State Water Board amended and re-adopted emergency regulations regarding Informational Order authority during drought (regulation amending section 879, subdivision (c)). The regulation was reviewed by OAL and went into effect on March 27, 2015. The regulation establishes requirements for water right holders to provide information in specific circumstances. The 270-day period for the emergency regulations ends on December 23, 2015.

The State Water Board issued over 1,000 informational orders in 2015. The State Water Board was able to use the 2015 monthly diversion data available from these orders to refine its diversion demand which enabled an earlier release of curtailments notices, allowing diversions to begin in November 2015. The informational orders also resulted in enforcement actions initiated to prevent further unauthorized diversions.

Water Rights Framework

In order to best understand the need for the regulation and how it will be applied, a very generalized overview of water rights will be helpful.

Two main types of water rights constitute the vast majority of diversions in California: riparian rights and appropriative rights. A riparian water right generally provides a right to use the natural flow of a water body to which the land is riparian. Broadly speaking, riparian land is land that touches a lake, river, stream, or creek. Water can only be diverted under a riparian right when that water is used on the riparian parcel on land that drains back to the lake, river, stream, or creek from which the water was taken. Riparian rights remain with the property when it changes hands, although parcels severed from the adjacent water source generally lose their

right to the water, absent indicia of intent to the contrary at the time of severance. Only the natural flow of water can be diverted under a riparian right. Water that is imported into a watershed from another river, stream, or creek cannot be used under a riparian right. Water cannot be stored during a wet time for use during a drier time under a riparian right. Neither can water released from an upstream storage reservoir be used by a downstream user under a riparian right. Riparian rights generally have a senior (higher relative priority) right to natural flows as against appropriative rights, and water must be available to fulfill the needs of all riparians before an appropriator may divert. This is not always the case, however. An appropriative right predating the patent date of riparian lands has seniority relative to the riparian right. The priorities of riparian right holders are correlative vis-à-vis each other; during a drought all share the shortage among themselves. Because a riparian right only allows the use of natural flow, it is possible to have water available under a riparian right during wetter years or months and not during drier years or months when natural flows are no longer available, including cases where stream flow is being supported by releases of previously stored water. This is particularly the case in dry years such as the current drought.

On the other hand, an appropriative water right is generally needed for water that is diverted for use on non-riparian land or to store water for use when it would not be available under natural conditions. An appropriative right holder can use natural flow, and non-natural flows like imported water from other watersheds, or irrigation return flows. Prior to 1914, appropriative water rights were acquired by putting water to beneficial use. The exact priority date of a pre-1914 appropriation can vary depending on the circumstances, but depends on either posting notice under the then applicable procedures of the Civil Code or otherwise clearly initiating the means necessary to divert or actually diverting. An appropriative water right that was acquired before 1914 is called a pre-1914 appropriative water right and is not subject to the permitting authority of the State Water Board. Appropriative water rights obtained after 1914 require a water right permit and subsequently a license issued by the State Water Board or its predecessors. Similar to pre- 1914 water rights, the seniority of post-1914 water rights is based on a first-in-time concept with the date of seniority typically established by the date of the application for the permit. A water right permit confers the State Water Board's (or its predecessor's) authorization to develop a water diversion and use project. The right to use water is obtained through actual beneficial use of water within the limits described in the permit. A water right license is issued once full beneficial use of water has been made and other conditions of a water right permit are met and constitutes the confirmation by the State Water Board (or its predecessor) of the water right. As between appropriators, junior water right holders may only divert where there is sufficient water to completely fulfill the needs of more senior appropriators.

When the amount of water available in a water source is not sufficient to support the needs of existing water right holders, junior appropriators must cease diversion in favor of more senior rights. However, it is not always clear to a junior diverter whether there is sufficient flow in the system to support their diversion and senior water uses downstream. It can also be difficult to determine whether releases of stored water are abandoned flows that may be diverted or whether those flows are not available for diversion because they are being released for downstream purposes. Similarly, it can be difficult for a riparian to know if water is natural flow

or stored or imported water and whether, when and to what extent correlative reductions in water use are needed due to the need to share limited supplies amongst riparians. As part of administrating water rights, the State Water Board may curtail water diversions based on California's water rights priority system. The State Water Board has continuing authority under Water Code sections 100 and 275 to enforce the requirements of the California Constitution, Article X, § 2, which directs that the water resources of the state be put to beneficial use to the fullest extent, and that water not be wasted or unreasonably used. It further provides that rights to the use of water are limited to such water as is reasonably required for the beneficial use served, and does not extend to the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of the water. The reasonable use doctrine applies to the diversion and use of both surface water and groundwater, and it applies irrespective of the type of water right held by the diverter or user. (*Peabody v. Vallejo* (1935) 2 Cal.2d 351, 366-367.) What constitutes an unreasonable use, method of use, or method of diversion depends on the facts and circumstances of each case. (*People ex rel. State Water Resources Control Board v. Forni* (1976) 54 Cal.App.3d 743, 750.) Under the reasonable use doctrine, water right holders may be required to endure some inconvenience or to incur reasonable expenses. (*Id*. at pp. 751-752.)

In order to implement the water rights priority system, the State Water Board may (a) investigate all streams, stream systems, portions of stream systems, lakes, or other bodies of water; (b) take testimony in regard to the rights to water or the use of water thereon or therein; and (c) ascertain whether or not water heretofore filed upon or attempted to be appropriated is appropriated under the laws of the State. (Water Code § 1051.) This investigative authority extends to diversions under claim of pre-1914 or riparian right, for purposes of determining whether or not such diversions are authorized. (See, e.g., *Young v. SWRCB* (2013) 219 Cal.App.4th 397.)

Diverting water when it is unavailable under your priority of right constitutes an unauthorized diversion and a trespass against the state. Violations could be subject to an Administrative Civil Liability (ACL) under the Water Code, or referred to the Attorney General. Administrative cease and desist orders and court injunctions may also be issued to require that diversions stop. An ACL for an unauthorized diversion may impose liability up to $1,000 a day plus $2,500 per acre foot of water that is illegally diverted for violations during the current drought. The State Water Board may also issue administrative cease and desist orders and request court injunctions to require that diversions stop.

Need for an Information Order Regulation During the Drought Emergency

Enforceable Information Gathering

Emergency regulations are needed to protect authorized water uses from unauthorized diversions and to increase the usability and accuracy of the information the Board relies upon in determining and communicating whether water is available to certain diverters during the drought.

Due to the severity of the drought, the State Water Board in 2015 issued water shortage notices (also called curtailment notices) to the holders of more than 9,000 water rights due to lack of supply. Appendix 1 lists, and has links to, the water shortage notices issued by the Board through November, 2015, including:

- **Sacramento River and Delta – Water Shortage Notice Sent to 5,992 rights**
  - May 1, 2015: All Post-1914 rights (concurrent with term 91 curtailment of 88 rights).
  - June 12, 2015: All appropriative claims of right with a priority date between 1903 and 1914.
  - September 18, 2015: 238 claims of right with a priority date between 1903 and 1914 in the Sacramento and Feather River watersheds and the Delta received a notice that there was currently water available to meet their reported demand. Water shortage notifications stayed in effect for the remainder of the 1903-1914 claims in the Yuba, American, and San Joaquin watersheds.
  - October 27, 2015: Parties claiming a right with a priority date between 1903 and 1914 in the American River and Yuba River watersheds received a notice that there was currently water available to meet their reported demand, to remain in effect until further notice.
  - November 2, 2015: Pre-1927 appropriative water right holders were notified that water is available to meet their reported demand, to remain in effect until further notice.
  - November 2, 2015: A temporary opportunity to divert was issued to all Post-1914 water rights. This notice remains in effect until further notice.
- **San Joaquin River – Water Shortage Notice Sent to 3,026 rights**
  - April 23, 2015: All Post-1914 appropriative rights.
  - June 12, 2015: All appropriative claims of right with a priority date between 1903 and 1914.
  - Additional sub-watershed water shortage notices sent to:
    - June 26, 2015: Appropriative claims of right in the Upper San Joaquin watershed[1] with a priority date senior to 1903.
    - June 26, 2015: Appropriative claims of right in the Merced watershed with a priority date between 1858 and 1902.
    - June 26, 2015: Four appropriative claims of right in the Tuolumne River watershed.
  - October 27, 2015: Pre-1914 claim of right holders who received water shortage notices in June 2015 were notified that there was water available to meet their reported demand, and wil remain in effect until further notice.
  - November 2, 2015: A temporary opportunity to divert was issued to all Post-1914 water rights. This notice remains in effect until further notice.

[1] The Upper San Joaquin watershed includes the area upstream of Friant Dam down to the confluence with the Merced River.

- **Scott River – Water Shortage Notice Sent to 204 rights**
    - April 23, 2015: All Decreed Surplus Class Rights, Post-1914 rights, and Priority class 2 water rights in Schedule D4.

Many diverters simply ignored the 2014 curtailment notices, and did not return Curtailment Certification Forms.[2] As of January 8, 2015, out of the 9,463 curtailment notices issued in 2014, the State Water Board received 3,588 Curtailment Certification Forms. This is a response rate of 38 percent, although the responses represent approximately 84 percent of the face value of the curtailed rights. However, of those Curtailment Certification Forms returned, the supplies curtailed only totaled approximately 8.3 percent of the face value of the curtailed rights. In most cases, the diverter continued diversions, claiming underlying senior pre-1914 or riparian rights. Division of Water Rights staff conducted approximately 950 curtailment inspections from June 6, 2014, to November 11, 2014. A substantial number of these inspections revealed continued diversions under claim of senior rights. In many cases, the diverters claiming senior rights had not filed a Statement of Diversion and Use. A permit or license holder is not obligated to file a statement of water diversion and use when all of their diversions can be reported under the permit or license, but lacking this prior right claim information affects the State Water Board's analysis of availability of water. For 2015, the response rate to the compliance certification form was also 38%, and the number of inspections and findings of prior right claims were nearly the same as 2014.

For 2015, the response rate to the compliance certification form was also 38%, and the number of inspections and findings of prior right claims were nearly the same as 2014.

As the drought emergency continues, supplies in 2016 could be just as limited as 2014 and 2015. It is reasonable to project that, if curtailment notices are issued, a substantial number of diverters will again fail to respond to the curtailment notices, and, of those that do respond, a substantial number will again claim underlying senior rights.

Although the Board may investigate and inspect such diverters and claimed senior diversions under Water Code section 1051, Water Code section 1058.5 recognizes the need for a streamlined, enforceable order process to quickly receive information during drought emergencies. Accordingly, the Board first adopted section 879, subdivision (c), in 2014, and then re-adopted and amended it to extend to more circumstances in March of 2015. In 2015, the Board issued informational orders under existing section 879, subdivision (c) to diverters in multiple watersheds, including the China Creek watershed, the Sacramento River and San Joaquin River watersheds and the Delta. The Board also issued informational orders to individual diverters. (see Response rates to Order WR 2014-0030-DWR and Order WR 2015-

[2] Appendix 2 is the Curtailment Certification Form that recipients of these notices were required to submit within seven days. The Board's July 15, 2015 Partial Rescission of April, May and June 2015 Curtailment Notices and Clarification of State Water Board Position RE: Notices of Unavailability of Water for Those Diverting Water in the Sacramento River Watershed, San Joaquin River Watershed and Delta, and Scott River (Clarification Notice) clarified that diverters receiving the notices were not required to submit the Curtailment Certification Form and that any failure to do so would "not constitute a basis for the State Water Board's initiation of any enforcement action."

0002-DWR.)[3] The response rate to Orders WR 2014-0030-DWR and WR 2015-0002-DWR were significantly higher than the response rates to the 2014 and 2015 curtailment notices likely due to the potential for immediate enforcement. Order WR 2014-0030-DWR was issued to 23 diverters along a limited stretch of the San Joaquin River, of whom approximately 67% complied with the order at least in part. Notices of Cease and Desist Orders and Administrative Civil Liability Complaints have and will be issued for violations. Order WR 2015-0002-DWR was issued to 1,064 statement holders claiming pre-1914 or riparian rights in the Sacramento, San Joaquin and Delta watersheds. As of March 9, 2015, approximately 93% submitted information in response.

In January 2015, the Division of Water Rights prepared the State Water Resources Control Board Dry Year Program Report, which specifically identified the lack of compliance with information requests as a fundamental impediment to an effective curtailment and inspection process.[4] The emergency regulation addresses this issue in the current drought emergency, and remains vital for continued administration of water rights.

The State Water Board this year proposes to implement the water shortage notices and notice and inspection process generally used in 2014 and 2015, bolstered by informational order authority under the proposed section 879, subdivision (c). Specifically, the proposed section 879, subdivision (c) will provide the Board with enforceable tools to investigate:

1. Complaints alleging interference with a water right by a water right holder, diverter or user (not just pre-1914 or riparian claimants);
2. Parties claiming previously unasserted senior rights in response to an investigation, curtailment order or curtailment notice;
3. Parties claiming unverified and previously unnoticed water transfers or contract purchases; or
4. Threats of waste, unreasonable use, unreasonable method of diversion, unlawful diversion of water by any water right holder, diverter or user; or
5. Parties failing to respond to a request for information.

In any of these circumstances, the Board may issue an informational order requiring the water right holder, diverter or user to provide additional information related to a diversion or use, including:

1. The claim of right;
2. Property patent date;
3. Date of initial appropriation;

[3] The Board held a public workshop on September 24, 2014, to receive comments and discuss the process the Board should use under existing section 879, subdivision (c) to address allegations of interference with water rights and claims of unauthorized diversion of stored water within the central and southern Delta. Order WR-2015-0002-DWR addresses these complaints and allegations, although the geographic scope of the Order goes well beyond the central and southern Delta in part due to issues discussed at the public workshop.

[4] The Dry Year Program Report is available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/dryyear_report/docs/2015dypr.pdf

4. Diversions made or anticipated during the current drought year;
5. Compliance with transfer law if the transfer diversion was not subject to approval of the Board or the Department of Water Resources; or
6. Any other information relevant to authenticating the right or forecasting use and supplies in the current drought year.

The proposed emergency regulation solves the reporting compliance issues identified above by providing the Board greater assurance that it will have access to better information to, among other things, investigate complaints or other information suggesting a lack of compliance with water law, and to issue and refine water shortage notifications.

Curtailment Analysis Methodology

Because the Board proposes to continue using the curtailment notice process applied in 2014 and 2015, this section describes the methodology underlying that process. The general analysis for determining the necessity for curtailment of water rights in any watershed compares the current and projected available water supply with the total water right diversion demand. Each of these is described further below.

Projected Supply

When available, the Board relies on the technical expertise and data produced by DWR in calculating projected supplies. DWR forecasts unimpaired runoff, or full natural flows, for certain watersheds in its Bulletin 120 (DWR, 2014) via monthly updates from February through May of every year. The full natural flow, as defined by DWR, is the natural water production of the river basin, unaltered by upstream diversions, storage, or export or import of water to or from other watersheds. This forecasted runoff data is uncertain. To address the uncertainty, DWR provides the forecasted supply data in the form of "levels of exceedance" or simply "exceedance" to show the statistical probability that the forecasted supply will actually occur. The exceedance is simply the percent of the time that the actual flow is expected to exceed the projected flow. The 90 percent exceedance hydrology assumes inflows from rainfall and snowmelt at levels that are likely to be met or exceeded by actual flows with a 90 percent probability, or in other words, there is a ten percent or less chance of actual conditions turning out to be this dry or drier. The 50 percent exceedance is the 50/50 forecast-- it is equally likely to be drier or wetter than projected.

For 2015, State Water Board staff refined the supply in the Sacramento, San Joaquin and Delta by incorporating additional sources. In the Sacramento River watershed, additional unimpaired flows from the smaller tributaries were added using DWR's 2007 Unimpaired Flow Data prepared by the Bay Delta Office. A similar addition, using the same DWR publication, was made to the San Joaquin River watershed along with a monthly return flow allowance based on the return flow percentages outlined in the 1977 Drought Year Report. Lastly, after consulting with stakeholders representing Delta interests, a 40% adjustment to supply was added to the Delta diverters to account for Delta hydrology where water is pumped from the islands resulting in an estimated net 60% consumption.

The State Water Board also uses flow forecasts by the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service using information available on the California Nevada River Forecast Center webpage (http://www.cnrfc.noaa.gov/; NOAA, 2015). If forecast data from these entities are unavailable for a particular watershed or river, the Board may look to other sources of data, such as available stream gage data. The Board may also look at these other data sources as a quality control-check against projected supply. Unlike full natural flow data, stream gage data shows the flow in rivers and streams after the effects of diversions, and includes the effects of both diversions to and releases from storage.

There are five on-line data sources available that can be used to analyze stream and reservoir conditions, including the California Data Exchange Center (CDEC); the United States Geological Survey (USGS) National Water Information System (NWIS) Surface Water Data for California; the USGS California Water Science Center; Reclamation's Mid Pacific Region Central Valley Operations Office; and the US Army Corps of Engineers Water Control Data System. Appendix 3 describes each of these data sources in more detail and provided links to the respective databases. Appendix 4 shows a list of stations for which full natural flow data is reported in CDEC and Appendix 5 has an expanded discussion of CDEC full natural flow data and illustrative data for 2014-2015. Appendix 6 has a list stations (and links to data) for which of real-time flow data is available in the following watersheds. The number in parentheses below is the number of known gages in each watershed:

• Sacramento River (175)

• Mokelumne River/Eastside Streams (23)

• San Joaquin River (84)

• Tulare Basin (32)

• Klamath River (33)

• Eel River (9)

• Napa River (2)

• Russian River (12)

• Salinas River (10)11

Gages, high in a watershed in particular, can be used to calculate the water available for diversion downstream. These gages, combined with reservoir operation data, can also be used to identify streams with flows augmented by releases of stored water from reservoirs.

Estimated Diverter Demand

Appropriative post-1914 water rights typically include a "face value" with an authorized rate of diversion, an amount authorized to be collected to storage in any one year, if applicable, and a total amount authorized to be diverted in any one year. These amounts are further constrained by an authorized season of diversion, point of diversion, purpose of use and place of use. All

water rights are limited to the amount that can be put to beneficial use in accordance with the terms of the right. These amounts are all maximum allowable diversion amounts[5] that can be diverted only when supplies are available under the specific priority of each water right. On average, water users generally use much less water than the maximum amount included in their water rights because they don't have a consistent need for the water, because they have multiple rights for the same diversion[6], and other reasons. Because of these factors the State Water Board does not usually use these maximum amounts to estimate demand for water. Instead, the Board has historically used estimated amounts, and now uses monthly reported water diversion and use data provided by water right holders that is corrected for known errors. This data is reported to the State Water Board under penalty of perjury by each water user, and should represent the actual amounts of water diverted under each water right. The data is reported in monthly volumes and can be directly compared with the monthly supply projections. Although the data is reported for previous years' diversions, these amounts have reasonable seasonal distribution and provide a better estimate of maximum likely diverter demand under the water right than the face value of a water right.

Legislation was passed in 2009 strengthening the requirement that almost[7] all diverters claiming a riparian or pre-1914 water right file a Statement of Diversion and Use (Statement) with the State Water Board and report the amount of water they divert. (Wat. Code, § 5100 et seq.) Water Right Permit and License holders were already required to report their diversion amounts to the State Water Board. Changes to the California Code of Regulations require diversion data by all diverters to be reported to the State Water Board using the Board's online reporting system. (Cal. Code Regs., tit. 23, § 910 et seq.) These changes also modified the reporting cycle for Licensees from every three years to annually. However, those reporting diversions on Statements were still only required to report every three years. The year 2010 is the first year diversion data was reported to the Division in the online system. Due to the tri-annual reporting cycle of Statement holders, reporting of 2010 water use was only completed in the 2013 reporting year. This means that the Board does not necessarily have the most up-to-date diversion information in any year.

Because the water use information reported to the Board is self-reported, staff reviews the data for obvious errors before using the information in any curtailment analysis. Adjustments to the reported use data are made where necessary, and as staffing permits, to develop the best available estimation of demand in the watershed. Adjustments include: 1) removal of water use reported under water rights authorizing direct diversion for power, when that water is returned to the stream in full; 2) incorrect units reported which often result in reporting diversion amounts far

[5] Many permitted and licensed irrigation and municipal uses express a maximum rate of diversion as a 30-day average. Often, the equivalent 30-day amount can be taken at a higher rate in a shorter time period, provided there is no injury.

[6] Some diversions require more than one water right: for example, a mixed use reservoir diversion will require separate rights for non-consumptive hydropower use and consumptive irrigation or municipal use.(See Cal. Code Regs. tit. 23, sec. 686,) Other times, a diverter claiming a riparian or pre-1914 water right may file an application with the State Water Board out of uncertainty whether the right has been maintained or confusion over the extent to which the right applies,

[7] The requirements include minor exceptions for certain small diversions, and for waters otherwise being reported. (Wat. Code § 5101.)

in excess of right; and 3) correcting obvious reporting errors such as reporting the same quantity of water as having been diverted under multiple rights. Demand data can then be organized into watersheds, geographic location and priority and compared to available estimated supplies. The Board generally uses its electronic water rights information management system (EWRIMS) database of water rights to determine water right priority dates (EWRIMS, 2014), but may also use other information as appropriate. This information is used to identify and prioritize demand estimates to determine which water users require curtailment given existing supplies.

In 2015, State Water Board staff improved the demand numbers used in the supply and demand analysis by either using an average reported demand or actual 2014 demand data provided in advance of the July 1 reporting deadline through an informational order. Select riparian and pre-1914 claims of right who represent the top 90% of demand in the Sacramento and San Joaquin watersheds were required, through Order WR 2015-0002-DWR, to provide their 2014 and projected 2015 demand by early March 2015 and provide monthly updates during 2015. With the actual 2014 and projected 2015 demand data provided as the result of the informational order, staff was able to compare the forecasted supply with the demand data for the top 90% of diverters to better gage when water shortage notices should be issued. In addition, with the monthly reported use updates provided in response to WR 2015-0002-DWR, staff was able to forecast future demand reductions based on past month's use trends which resulted in earlier release dates for diverters than 2014.

Other Information

The Board can also rely upon other sources of information to refine a curtailment, but for the reasons explained below in the curtailment projection analysis section, much of this information may be of limited value without first curtailing diversions. Some other types of information the Board may rely upon include:

• Releases of stored water - any water released from storage for downstream beneficial uses, including meeting water quality or flow requirements, is not available for diversion by other water right holders, regardless of priority, unless the diverter has a contract for that water, or the released water has been abandoned, and the diversion is appropriative.

• Water supply contracts - terms of water supply contracts define the amounts of water that can be diverted.

• Wastewater discharges are not available for diversion by other water right holders, regardless of priority, unless the diverter has a contract for the discharges, or the discharges have been abandoned and the diversion is appropriative.

• Return flows – unless the return flows are from natural flow, which, as described below, is less likely in drought years, such flows are unavailable for riparian right holders.

• Projected 2015 use estimates by water right holders for field fallowing or conservation.

• Observations of Board staff in conducting inspections of water rights that have been curtailed. Inspections provide important information on tributary stream flow conditions, especially on ungaged streams that may lose continuity to lower, gaged, water bodies.

• Historic water use reports, for water right holders that failed to report diversions in recent years.

• Water transfers and Section 1707 petitions for instream beneficial uses.

• Permit terms and conditions that provide storage releases for instream beneficial uses.

• Adjudications and State Water Board Decisions and Orders that may provide information regarding some riparian and pre-1914 right holders.

The Delta watershed has more unimpaired flow and real time stream and reservoir gage information than much of the rest of the State, and it provides a good illustration of how such information can be used to assess water supply in large and complicated watersheds. Schematics of some of the data that can be used to determine water supply in the Sacramento and San Joaquin River watershed are shown in appendices 7 and 8, respectively. This information can be used to determine streamflows along specific river reaches in a larger watershed, and thereby allow the Board to adjust the timing of initial curtailment notices. The detailed real-time information, based on flow changes that result from reduced diversions in response to curtailments, can also be used to either increase or decrease the extent of curtailment limits. Other, generally less complex, watersheds throughout the state have less detailed information, but many have similar interrelationships between reservoirs, storage releases from reservoirs, and instream flow measurements. All of this information could, of course, be improved.

Curtailment Projections Analysis

Supply and demand data may be compared to determine when, and to what priority level, curtailments should occur. Demand data is first sorted by priority date to create a running list of demand data that starts with the most senior water right holders. Demand groupings for riparian, pre-1914, and post-1914 water rights are tallied to create different levels of demand to compare against projected, or observed, available supply. The groupings are developed based on the available supply and the need to refine what priorities of water rights require curtailment. These demand levels include the quantity of water needed to satisfy the demand under each priority level for each month. These demand levels may then be plotted against the monthly quantities of forecasted supply to create a graphical representation of supply and demand. The point at which the supply curve and demand curves intersect indicates the initial determination of what water right priority levels need to be curtailed at that time. Appendix 9 is an example of a supply and demand curve for the Sacramento River watershed. Other supply/demand curves are located on the Division of Water Rights webpage at:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/analysis/

This initial determination may be refined to take into account return flows of water diverted from the watercourse. This additional quantity of water could change the priority level at which curtailments should occur. Specifically, the addition of return flows could mean that the priority under which a water right holder may divert may be lower (more junior) than the initial estimate and fewer water right holders may need to be curtailed than under the initial estimate. Other potential modifications to the initial curtailment numbers could show that the initial curtailment does not curtail enough water rights. In many parts of the state, groundwater elevations have been sufficiently lowered so that rivers and streams receive little or no groundwater accretions. In fact, instead of being a gaining stream with groundwater accretions, streams flowing over areas with lowered groundwater tables can lose surface water to groundwater. Rather than rely upon imperfect estimates of water supply, water demand, return flows from diverted water, and other system complexities, curtailments will be adjusted based on real time monitoring of hydrologic conditions as described in the next section.

In no case, however, is a riparian water right holder entitled to divert water other than natural flow. Unlike appropriators, riparian water right holders are not entitled to abandoned flow unless the source of the return flow itself was from natural flow. In many stream systems under the current severe drought conditions it is unlikely that there will be natural return flows as there already is no natural flow in the stream. Similarly, flow releases may be required at certain locations as a condition of a water right permit or license or a water quality certification for a hydroelectric project, or as an agreement to satisfy senior water rights. This water too, may be available to appropriative water right holders downstream of this flow but not available to riparian right holders.

In a watershed that has not undergone any type of hydro-modification, such as: 1) installation of dams; 2) diversions from surface water; or 3) groundwater pumping in adjacent aquifers, any water that remains in rivers and streams after the end of the rainfall season comes from either melting snow or groundwater accretions. However, most watersheds in California have undergone at least some type of hydro-modification. Given increased losses to groundwater in an extended period of dry years such as this one there remains little or no natural flow in surface water shortly after rains have stopped and snow has melted. This means that when supply information shows that there is no longer any natural flow in the stream, there is no water available for riparian use. This also means that riparian water rights can and should be fully curtailed in tributaries and watersheds when there is no longer any natural flow in the system. The need for curtailment, however, may not be apparent to many riparian water rights holders in many streams because water is still being released from storage, and there are return flows from water released from storage.

In consideration of the above, regular enforceable access to more up-to-date and reliable information is needed so that the Board can most promptly and finely make appropriate adjustments to curtailments, if needed. Timely responses by water right holders and timely adjustment to Board curtailments ensure that no water right holder is prematurely curtailed, and that no senior water right holder is injured due to lack of available water because of diversions by a more junior water right.

The goal of curtailments is principally to ensure that water to which senior water right holders are entitled is actually available to them. To ensure that this occurs generally requires that some water remain in most streams to satisfy senior demands at the furthest downstream point of diversion of these senior water rights. This in turn means there must also be some additional water, on top of the senior water right holder demand, to get that quantity of water to the senior water rights holder. This additional quantity of water, or "carriage" water, is defined here as the variable quantity of water needed to make up for losses to evaporation and groundwater, maintain water levels needed to facilitate pumping from a stream, and any other reasonable losses or factors that should be considered to ensure that a certain quantity of water to which a senior water right holder is entitled reaches that water right holder. Maintenance of this carriage water has the ancillary benefit of preventing normally wetted stream channels from running completely dry and may provide some additional benefit to fish and wildlife and to the riparian corridor.

Adjustment of Curtailments

At present, refinements can be made to curtailment analyses based on: 1) real-time information regarding water availability; and 2) information obtained from reports submitted to the Board in response to curtailment notices or in response to an order under the existing or proposed emergency regulation section 879, subdivision (c).

Real-time information regarding water availability includes gage data and field measurements and observations by field staff of stream flows, return flows, and any other such information in the curtailed watersheds, as described in more detail above.

This information will be used to issue, lift or refine curtailments. Refinement could result either in: 1) releasing some water right holders from curtailment because the additional information demonstrates that there is sufficient water in the system to support the demand of additional water right holders; or 2) adding additional water right holders to the curtailment because the initial curtailment does not result in protection of senior water rights. Although adjustments could also be made to curtailments issued under the Board's current authorities, any such adjustment, absent the proposed regulation, will be less accurate and take longer to implement because stale or inaccurate information on current diversions means that curtailments may not be promptly fine-tuned to provide diverters with the best information regarding whether water is available for diversion under their priority of right at any given time. Therefore, in the absence of the proposed regulation, senior water right holders are likely to be injured.

Summary

The proposed informational order regulation is necessary in this extended drought period to provide the State Water Board with enforceable authority to rapidly investigate water right complaints and claims of senior rights or transfers, and threatened or actual waste, unreasonable use, unreasonable method of diversion, or unlawful diversions by any water right holder or diverter. The State Water Board uses this information to investigate complaints and to issue, lift and refine curtailments, bring non-reporting entities into compliance, and to undertake other activities related to the effective administration of the water rights system and to

implement the requirements in Article X, section 2 of the California Constitution that the waters of the state be put to the greatest use possible, and that such use be reasonable.

Informative Digest

Summary of Existing Laws and Regulations

A general description of existing law governing water rights, the water right priority system, the State Water Board's information-gathering authorities, and the constitutional prohibition against the waste, unreasonable diversion, unreasonable method or diversion, or unreasonable use of water is set forth above.

Mandate on Local Agencies or School Districts

The State Water Board has determined that amendment and re-adoption of section 879 does not impose a new mandate on local agencies or school districts. The regulation is generally applicable law.

Cost Estimate

This cost estimate considers the fiscal effect of the proposed regulation, as defined in Government Code section 11346.5, subdivision (a)(6), which requires analysis of a proposed regulation's anticipated costs and savings to state agencies, local governments and agencies, school districts, including the effect of costs of savings of federal funding to the State.

Fiscal Effect of Section 879, Subdivision (c)

Using the definitions in Government Code section 11346.5, subdivision (a)(6), the only fiscal effect of the proposed regulation is the cost that would be incurred by state and local government agencies to complete and submit the information requested in any Informational Order issued under section 879, subdivision (c).

Based on information prepared by economists at the University of California, Davis, and using assumptions that show a higher projection of the potential range of costs, the State Water Board estimates that the cost to state and local agencies and governments to complete and submit the online Informational Order form and provide the supporting documentation will be approximately $504,530. The proposed regulation is not anticipated to have a fiscal impact on school districts or to result in costs or savings in federal funding to the State.

Appendix 10 provides more background information on the proposed estimate.

Consistency Determination

As the State Water Board is the agency charged with implementing the water right system, it is the only agency that can implement this emergency regulation. As required by Government Code Section 11346.5, subdivision (a)(3)(D), the State Water Board has conducted an evaluation of this regulation and has determined that it is not inconsistent or incompatible with existing state regulations. State Water Board authority includes broad investigatory authority, and Water Code Section 1058.5 explicitly recognizes the need for regulations to provide the Board with increased information to appropriately implement the water rights system during the drought emergency.

Authority and Reference Citations

Authority: Sections 1058 and 1058.5, Water Code.
Reference: Sections 100, 183, 186, 187, 275, 348, 1050, 1051 and 1058.5, Water Code.

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U.S. Drought Monitor http://droughtmonitor.unl.edu/

Appendix 1: State Water Board Curtailment Notices and Informational Orders

As of December 3, 2015, the State Water Board has announced the following water shortage notices, informational orders, and temporary water shortage releases for calendar years 2015 and 2014:

2015 Water Shortage Notices, Curtailment Orders and Temporary Releases Issued:

- Sacramento, San Joaquin & Delta Water Shortage Release Notice - Post-1914 Water Rights (11/2/15)
- Sacramento River & Delta Water Shortage Release Notice - Pre-1927 Water Rights (10/30/15)
- Yuba, American and San Joaquin River Water Shortage Release - Post-1914 Water Rights (10/27/15)
- Term 91 Notice - Additional Parties to the April 30, 2015 Notice (10/2/15)
- Sacramento, Feather River & Delta - Pre-1914 Water Shortage Release Notice (09/18/15)
- Upper San Joaquin River and Merced River water shortage notices (06/26/15)
- Sacramento, San Joaquin and Delta - Water Shortage Notice - Pre-1914 Water Rights (06/12/15)
- Notice of Suspension - Deer Creek Watershed (06/2/15)
- Notice of Suspension - Antelope Creek Watershed (05/29/15)
- Sacramento River & Sacramento-San Joaquin Delta Water Shortage Notice - Post-1914 Water Rights (05/1/15)
- Term 91 Notice - Sacramento-San Joaquin Delta Watershed (04/30/15)
- San Joaquin River Watershed - Post-1914 Water Shortage Notice (04/23/15)
- Scott River Watershed - Water Shortage Notice (04/23/15)
- Deer Creek Watershed Order - WR 2015-0019-DWR: (04/17/15)
- Notice of Probable Curtailment of Water Diversion During 2015, Term 91 (02/13/15)
- Statewide Notice of Potential Future Curtailment (01/23/15)

2014 Water Shortage Notices, Curtailment Orders and Temporary Releases Issued:

- Temporary Curtailment Release for post-1953 water rights within the Sacramento & San Joaquin River Watersheds (11/19/14)
- Notice of Curtailment Lifting for pre-1954 water rights within the Sacramento & San Joaquin River Watersheds (11/12/14)
- Temporary Curtailment Release for the Sacramento and San Joaquin River Watersheds (10/31/14)
- Sacramento & San Joaquin River Watershed Curtailment Letter (5/27/14)
- Russian River Watershed Curtailment Letter (5/27/14)
- Scott River Watershed Curtailment Letter (5/16/14)
- Curtailment Certification Form (5/16/14)

Drought Informational Orders Issued for 2014 and 2015

APPENDIX 2: CURTAILMENT CERTIFICATION FORM

Please return within 7 days of receipt of the Notice of Curtailment of Water Diversion to:

State Water Resources Control Board
Division of Water Rights
P.O. Box 2000
Sacramento, CA 95814-2000

Email completed Curtailment Certification form to:
SWRCB-curtailment-certification@waterboards.ca.gov

Fax: 916-341-5400

WATER RIGHT SUBJECT TO THE 2014 WATER DIVERSION CURTAILMENT:

Please update Water Right Owner Information (if different from addressed):

Water Right Application or Statement No(s):_____
Owner:_____
Address:_____
City:_____ **State:**_____ **Zip:**_____

CURTAILMENT CERTIFICATION

Please check the applicable boxes below:

☐ **NO DIVERSION** – *I hereby certify that I will not be diverting any water under the above specified water right during the 2014 water diversion curtailment period.*

☐ **ALTERNATE SOURCE** – *I hereby certify that I will not be diverting any water under the specified water right during the 2014 curtailment period. However, I will be serving all or a portion of its place of use with my alternate source(s) of water, as specified below:*

- ☐ Ground (well) water
- ☐ Senior Post-1914 Appropriative Water Right (specify Permit/License No.):_____
- ☐ Riparian water right(s) and/or pre-1914 appropriative water right(s)*
  - ☐ Water use is reported under Statement of Water Diversion and Use No(s).: _____.
  - ☐ My use is excluded from filing a Statement of Water Diversion and Use under California Water Code section 5101 (generally, because the use included in other sufficient reports, or is from a spring that does not flow off your property).
  - ☐ None of the above.
- ☐ Contract (purchased) water from _____
- ☐ Will serve the place of use by withdrawing water stored under Permit/License No. ____ prior to start of this curtailment period.
- ☐ Other source (specify) _____

☐ **SOLE SOURCE OF WATER FOR HUMAN HEALTH & SAFETY –**

- ☐ *I hereby certify that the water right being curtailed is the only source of water available for human health & safety needs.*
- ☐ *I also certify that I have looked into alternative water supplies from the following:*
  - ☐ *Groundwater Well*
  - ☐ *Bottled Water*
  - ☐ *Purchase Supply*
  - ☐ *Other* _____

☐ **HYDROELECTRIC POWER GENERATION** – *I hereby certify that I am directly diverting water for hydroelectric power generation or other non-consumptive use and all water diverted is returned to the stream.*

☐ **OTHER** – *I have attached an additional sheet explaining how much water I am diverting, the use of that water, the measures being undertaken to reduce use, and the basis on which I contend that the diversion and use is legally authorized notwithstanding the very limited amounts of water available during this drought emergency.*_____

* Please note that only limited natural or abandoned water is available during a curtailment period. Water released from upstream storage projects is not available to divert under a riparian or pre-1914 right.

I declare that the information in this certification is true to the best of my knowledge.

Name: _____	Phone No.: _____
	Email: _____
Signature: _____	Date: _____

Appendix 3: Real-Time Stream Flow Gage Information Sources

Five on-line data sources used by staff to analyze stream and reservoir conditions include the California Data Exchange Center (CDEC), the U.S. Geological Survey (USGS) National Water Information System (NWIS) Surface Water Data for California, the USGS California Water Science Center, the U.S. Bureau of Reclamation (USBR) Mid Pacific Region Central Valley Operations Office, and the U.S. Army Corps of Engineers (USACE) Water Control Data System (WCDS).

While some stream gage data are reported by multiple agencies such as CDEC, USGS, and USBR in slightly different formats, each agency also publishes gage data typically found only on its site. For example, CDEC includes some gages that are not USGS gages. The USACE publishes daily reservoir data not found on CDEC or USGS. USBR publishes data that can be found nowhere else, and so on.

CDEC
The CDEC installs, maintains, and operates an extensive hydrologic data collection network, including automatic snow reporting gages for the California Cooperative Snow Surveys Program and precipitation and river stage sensors for the flood forecasting program.

In addition, CDEC provides a centralized location to store and process real-time hydrologic information gathered by various cooperators throughout the State; and then disseminates this information to support forecasting and flood operation activities and to meet the data reporting needs of various cooperators, public and private agencies, the news media, and the public.

CDEC Database
The CDEC collects, stores, disseminates, and exchanges hydrometeorological data and related information. The data collection began as a small system designed to obtain data urgently needed to provide river stage forecasts and flood warnings for the North Coastal area and for the Central Valley. In the beginning, data was obtained from less than 100 telemetered precipitation and stream gage stations.

Since then, real-time hydrometeorological data needs have continuously grown. Currently, numerous federal, State, and local agencies collect data from hundreds of rain, snow, temperature, wind, atmospheric pressure, humidity, and stream stage sensors. The data enable forecasters to prepare flood forecasts and water supply forecasts; reservoir and hydroelectric operators to schedule reservoir releases; and water suppliers to anticipate water availability.

Currently, over one hundred and forty (140) agencies provide data to CDEC and also obtain data through CDEC's cooperative hydrologic database. The CDEC cooperative database contains information collected by:

1. Eighty-nine (89) remote data stations that have six hundred and forty-nine (649) sensors transmitting over the State microwave system. Real-time data include river stages, precipitation amounts, snow water content, temperature, and water quality.
2. Eight hundred and three (803) remote data stations that have 6,591 sensors transmitting via the GOES satellite.
3. There are two hundred and eleven stations (211) that have 1,270 sensors which are transmitted via network from federal, State, and other agencies via an automated data exchange program.

Data Exchange Program
CDEC operates a data exchange program with various federal and State agencies and other public agencies. This data exchange program involves the automated transfer and receipt of data and information via network connections. Following are the major agencies involved in data exchange:

- National Weather Service (NWS): weather forecasts, river bulletins, full weather data
- U.S. Bureau of Reclamation (USBR): reservoir operations, reservoir summary reports
- U.S. Army Corps of Engineers (USACE): precipitation, snow water content, reservoir operations, reservoir summary reports
- Pacific Gas & Electric (PG&E): precipitation, snow water content
- Sacramento Municipal Utility District (SMUD): precipitation, reservoir operations
- U.S. Geological Survey (USGS): river gage data, river flow rating tables and shifts

USGS Surface Water Data for California
The USGS NWIS is a comprehensive and distributed application that supports the acquisition, processing, and long-term storage of water data. NWISWeb serves as the publicly available portal to a geographically seamless set of much of the water data maintained within NWIS. The Surface-Water Data set for California includes comprehensive historical daily data information for 2,460 gaged sites in California, 492 of which are "real-time" gages.

USGS California Water Science Center
The California Water Science Center is the repository for the Water Resources Data for California, Vols. 1 – 4, annual report series of USGS stream gage data in California. Among other functions, the reports themselves are an index to all historical and currently active gaged streams operated or cooperatively operated by the USGS. These reports also include helpful stream and gage schematics that are indispensable. The California Water Science Center also has useful links to USGS NWIS real time data.

USBR Mid Pacific Region Central Valley Operations Office (CVO)
USBR-CVO maintains real time (or one-day lagged) stream and Central Valley Project reservoir data as well as various water accounting reports required by the State Water Project-Central Valley Project Coordinated Operating Agreement and other agencies including the State Water Resources Control Board and U.S. Fish and Wildlife Service. Some of the USBR's accounting reports include pumping and or depletion data not obtainable elsewhere, including CDEC and USGS

USACE WCDS
The Sacramento District's WCDS collects data necessary for the management of USACE reservoirs and flood control space in Non-USACE Reservoirs (i.e., Section 7 projects). The following information is available on the USGS WCDS:

- Midnight Reservoir Status for USACE and Section 7 projects.
- Monthly Reservoir Reports for USACE projects.
- California plots and Tabulations of Storage, Inflow, and Outflow for USACE and Section 7 Reservoirs.
- Great Basin/Upper Colorado River Basin plots and Tabulations of Storage, Inflow, and Outflow for Section 7 Reservoirs.
- Hourly Time Series Reports with the latest 48 hourly reservoir and flow values.
- Release Change Notifications for USACE and a select number of Section 7 projects.

- Average Reservoir Status for USACE and Section 7 projects.
- Special Reports
- Archived Reports and Plots

Appendix 4: CDEC Gages: Full Natural / Unimpaired Flow Data

Name	Gauge ID	Type
SAN JOAQUIN RIVER AT FRIANT DAM (MILLERTON)	MIL	FNF
STANISLAUS RIVER AT GOODWIN DAM	GDW	FNF
STANISLAUS RIVER AT NEW MELONES RESERVOIR	NML	FNF
TUOLUMNE R-LA GRANGE DAM	TLG	FNF
MERCED R NR MERCED FALLS	MRC	FNF
SACRAMENTO RIVER AT BEND BRIDGE	BND	FNF
SACRAMENTO RIVER AT SHASTA DAM	SHA	FNF
AMERICAN RIVER AT FOLSOM	AMF	FNF
AMERICAN RIVER AT FOLSOM DAM	FOL	FNF
INDIAN CREEK AT ANTELOPE LAKE	ANT	FNF
MF FEATHER RIVER AT LAKE DAVIS (DWR)	DAV	FNF
LITTLE LAST CHANCE CREEK AT FRENCHMAN DAM	FRD	FNF
FEATHER RIVER AT OROVILLE	FTO	FNF
FEATHER RIVER AT OROVILLE DAM	ORO	FNF
ARROYO SECO (SALINAS RIVER) NEAR SOLEDAD	ASS	FNF
KINGS NF NR CLIFF CAMP	KGC	FNF
KINGS R-PINE FLAT DAM	KGF	FNF
KINGS PRE-PROJECT PIEDRA	KGP	FNF
SAN JOAQUIN RIVER AT PINE FLAT DAM	PNF	FNF
KAWEAH R-TERMINUS DM	KWT	FNF
TERMINUS DAM	TRM	FNF
KERN RIVER AT ISABELLA DAM	ISB	FNF
KERN RIVER-BAKERSFIELD	KRB	FNF
KERN RIVER-BLW ISABELLA	KRI	FNF
KERN RIVER NEAR KERNVILLE	KRK	FNF
TULE RIVER AT SUCCESS DAM	SCC	FNF
COSUMNES RIVER AT MICHIGAN BAR	CSN	FNF
COSUMNES RIVER AT MICHIGAN BAR	MHB	FNF
MOKELUMNE RIVER-MOKELUMNE HILL	MKM	FNF
MOKELUMNE RIVER AT WEST POINT	MKW	FNF
CALAVERAS RIVER AT NEW HOGAN LAKE	NHG	FNF
KLAMATH RIVER AT ORLEANS	KLO	FNF
SCOTT RIVER NEAR FORT JONES	SFJ	FNF
TRINITY RIVER AT TRINITY LAKE	CLE	FNF
TRINITY RIVER AT LEWISTON	TNL	FNF
YUBA RIVER NEAR SMARTVILLE	YRS	FNF
EEL RIVER AT SCOTIA	ERS	FNF
RUSSIAN RIVER NEAR HEALDSBURG	RRH	FNF

Appendix 5: Unimpaired Flows from the California Data Exchange Center

Unimpaired flow estimates (also described as the "full natural flow" estimate by the Department of Water Resources (DWR)) can be compared to reported water diversion values to determine if water is available to divert under a post-1914, pre-1914 and riparian water rights or claims of water right.

"Full Natural Flow" or "Unimpaired Runoff" represents the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds. Gauged flows at the given measurement points are increased or decreased to account for these upstream operations. Where no diversion, storage, or consumptive use exists in the watershed, the historical gage data is often assumed to represent unimpaired flow.

DWR provides access to the state's operational hydrological data at its California Data Exchange Center1 (CDEC) at: http://www.cdec.water.ca.gov/. CDEC provides a centralized database to store, process, and exchange real-time hydrologic information gather by various cooperators throughout the State. Currently, over 140 agencies provide data to CDEC and also obtain data through CDEC's cooperative hydrologic database. The data collected by CDEC enables forecasters to prepare water supply forecasts. DWR's Bulletin 120 is a publication issued four times a year, in the second week of February, March, April, and May by DWR. It contains forecasts of the volume of seasonal runoff from the state's major watersheds, and summaries of precipitation, snowpack, reservoir storage, and runoff in various regions of the State.

DWR's March 1, 2015 forecast of monthly unimpaired runoff (in thousands of acre-feet) for 26 California locations is shown at: http://www.cdec.water.ca.gov/cgi-progs/iodir/B120.

DWR also estimates the daily Full Natural Flow (FNF) for 16 locations. The daily FNF calculations are based on less data than is available at the completion of each month. The sum of daily FNF reported here will not exactly match the calculated monthly FNF reported on the seasonal and water year reports. Due to the lag between the effect of upstream operations and downstream flow measurements, calculated daily FNF will fluctuate from day to day. DWR reports the daily FNF based on calculations done by project operators on the respective rivers, the U.S. Army Corps of Engineers and/or Snow Surveys at: http://cdec.water.ca.gov/cgi-progs/stages/FNF.

DWR provides tables comparing the monthly and seasonal measured flow to the 50-year average and seasonal total unimpaired runoff at: http://cdec.water.ca.gov/cgi-progs/stages/FLOWOUT and shown below. The table was updated on March 11, 2015. The next update will be issued about April 12, 2014, unless there are significant hydrologic changes.

Runoff Data for Water Year 2015

Report generated: 03/11/2015 10:58

Runoff Data for Water Year 2015

NORTH COAST

Area, Stream, and Station (1)	FEBRUARY Unimpaired Runoff				OCTOBER - FEBRUARY Unimpaired Runoff			
	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Monthly Total 1000 AF	% Ave	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Seasonal Total 1000 AF	% Ave
KLAMATH R. COPCO TO ORLEANS (4)	957.4	669.1	927.3	139	2346.2	2355.4	2084.6	89
* SALMON R AT SOMES BAR	254.1	166.6	254.1	153	639.4	607.1	639.4	105
TRINITY R AT LEWISTON LK	17.2	160.1	293.1	183	97.4	505.8	711.6	141
EEL R AT SCOTIA	979.1	1104.1	982.5	89	2779.7	3861.7	2804.2	73
RUSSIAN R AT HEALDSBURG	150.2	206.4	158.9	77	447.4	628.7	480.3	76
SUBTOTAL	2103.8	2139.6	2361.9	110	5670.6	7351.6	6080.6	83

SAN FRANCISCO BAY

Area, Stream, and Station (1)	FEBRUARY Unimpaired Runoff				OCTOBER - FEBRUARY Unimpaired Runoff			
	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Monthly Total 1000 AF	% Ave	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Seasonal Total 1000 AF	% Ave
NAPA R NEAR ST HELENA	9.0	17.4	9.0	52	39.6	52.0	39.6	76
SUBTOTAL	9.0	17.4	9.0	52	39.6	52.0	39.6	76

CENTRAL COAST

Area, Stream, and Station (1)	FEBRUARY Unimpaired Runoff				OCTOBER - FEBRUARY Unimpaired Runoff			
	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Monthly Total 1000 AF	% Ave	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Seasonal Total 1000 AF	% Ave
ARROYO SECO NEAR SOLEDAD	11.6	31.3	11.6	37	25.9	72.2	25.9	36
NACIMIENTO BELOW NACIMENTO DAM	1.6	57.2	24.1	42	8.8	141.0	55.1	39
SUBTOTAL	13.3	88.4	35.7	40	34.7	213.1	81.0	38

SOUTH COAST								
	FEBRUARY				OCTOBER - FEBRUARY			
	Unimpaired Runoff				Unimpaired Runoff			
Area, Stream, and Station (1)	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Monthly Total 1000 AF	% Ave	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Seasonal Total 1000 AF	% Ave
ARROYO SECO NEAR PASADENA	0.2	2.0	0.2	11	0.7	4.5	0.7	16
SANTA ANA R NEAR MENTONE	1.1	8.7	1.4	16	5.8	23.3	8.1	35
SUBTOTAL	1.3	10.8	1.6	15	6.5	27.8	8.9	32

SACRAMENTO RIVER								
	FEBRUARY				OCTOBER - FEBRUARY			
	Unimpaired Runoff				Unimpaired Runoff			
Area, Stream, and Station (1)	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Monthly Total 1000 AF	% Ave	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Seasonal Total 1000 AF	% Ave
* SACRAMENTO R AT DELTA	167.8	129.7	167.8	129	469.2	397.2	469.2	118
* MCCLOUD R ABOVE SHASTA LAKE	92.8	140.3	143.8	102	267.8	527.3	472.1	90
* PIT R NR MONTGOMERY & SQUAW CR	251.6	363.9	246.0	68	1015.0	1333.1	934.7	70
* SHASTA LAKE TOTAL INFLOW	720.6	822.7	719.7	87	2338.7	2825.5	2340.8	83
SACRAMENTO R ABOVE BEND BRIDGE	445.6	1294.0	1067.7	83	2306.2	4319.9	3719.8	86
FEATHER R AT OROVILLE	52.8	568.3	442.1	78	324.2	1858.8	1357.9	73
YUBA R NR SMARTVILLE & DEER CR	48.6	296.5	204.0	69	248.8	946.7	601.6	64
AMERICAN R BLW FOLSOM LAKE	49.5	337.1	242.2	72	290.8	1021.9	574.3	56
SUBTOTAL	596.4	2495.9	1956.1	78	3169.9	8147.3	6253.6	77

SAN JOAQUIN RIVER

Area, Stream, and Station (1)	FEBRUARY Unimpaired Runoff Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Monthly Total 1000 AF	% Ave	OCTOBER - FEBRUARY Unimpaired Runoff Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Seasonal Total 1000 AF	% Ave
COSUMNES R AT MICHIGAN BAR	34.3	67.2	38.1	57	53.3	175.8	60.4	34
MOKELUMNE R. INFL TO PARDEE RES	27.8	65.6	65.3	99	135.5	192.4	107.9	56
STANISLAUS R BELOW GOODWIN RES	17.2	106.7	91.3	86	93.0	304.6	155.5	51
TUOLUMNE R BELOW LA GRANGE RES	---	153.5	113.9	74	---	464.5	219.6	47
MERCED R BELOW MERCED FALLS	2.1	87.8	24.6	28	76.1	238.2	46.8	20
SAN JOAQUIN R BELOW MILLERTON L	18.1	109.9	42.4	39	66.8	327.2	89.9	27
SUBTOTAL	99.5	590.7	375.5	64	424.7	1702.7	680.1	40

TULARE LAKE

Area, Stream, and Station (1)	FEBRUARY Unimpaired Runoff Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Monthly Total 1000 AF	% Ave	OCTOBER - FEBRUARY Unimpaired Runoff Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Seasonal Total 1000 AF	% Ave
KINGS R BELOW PINE FLAT RES	37.7	89.0	45.4	51	72.8	279.3	94.6	34
KAWEAH R BLW TERMINUS RES	0.6	35.1	17.0	48	5.6	102.1	31.9	31
TULE R BLW LAKE SUCCESS	0.7	20.1	2.7	13	2.9	54.9	6.5	12
* KERN R BLW LAKE ISABELLA	10.1	43.9	13.4	31	49.1	151.5	49.8	33
KERN R NEAR BAKERSFIELD	10.1	48.0	13.4	28	49.3	162.3	49.9	31
SUBTOTAL	49.1	192.1	78.5	41	130.6	598.7	183.0	31

NORTH LAHONTAN

Area, Stream, and Station (1)	FEBRUARY Unimpaired Runoff Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Monthly Total 1000 AF	% Ave	OCTOBER - FEBRUARY Unimpaired Runoff Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Seasonal Total 1000 AF	% Ave
TRUCKEE R FROM TAHOE TO FARAD (4)	24.0	27.0	33.2	123	69.8	95.7	69.4	72
WEST FK CARSON AT WOODFORDS	3.2	2.9	3.2	112	7.2	12.0	7.2	60
EAST FK CARSON NR GARDNERVILLE	10.6	11.9	10.6	89	23.3	44.5	23.3	52
WEST WALKER BLW LITTLE WALKER	4.6	4.4	4.6	105	10.4	20.4	10.4	51
EAST WALKER NEAR BRIDGEPORT	1.2	7.0	3.1	44	6.4	30.0	11.1	37
SUBTOTAL	43.6	53.3	54.7	103	117.1	202.6	121.4	60

SOUTH LAHONTAN								
	FEBRUARY				OCTOBER - FEBRUARY			
	Unimpaired Runoff				Unimpaired Runoff			
Area, Stream, and Station (1)	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Monthly Total 1000 AF	% Ave	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Seasonal Total 1000 AF	% Ave
OWENS R BELOW LONG VALLEY DAM	0.1	10.7	5.4	51	17.2	53.7	35.1	65
SUBTOTAL	0.1	10.7	5.4	51	17.2	53.7	35.1	65
COLORADO RIVER								
	FEBRUARY				OCTOBER - FEBRUARY			
	Unimpaired Runoff				Unimpaired Runoff			
Area, Stream, and Station (1)	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Monthly Total 1000 AF	% Ave	Measured Flow (2) 1000 AF	50-Year Ave (3) 1000 AF	Seasonal Total 1000 AF	% Ave
* COLORADO R INFL TO LAKE POWELL	464.1	387.7	424.0	109	1983.7	2138.5	1971.0	92
SUBTOTAL	---	---	---	---	---	---	---	---
SUBTOTAL	---	---	---	---	---	---	---	---
STATEWIDE								
TOTAL	2916.2	5599	4878.3	87	9611.09999999999	18349.5	13483.2	73

* THESE STATIONS ARE NOT INCLUDED IN AREA OR STATEWIDE TOTALS.
(1) AREA AND STATEWIDE TOTALS DO NOT INCLUDE MISSING DATA DENOTED BY '---'. IF THE MONTHLY UNIMPAIRED RUNOFF IS MISSING, THE SUBTOTAL'S PERCENT AVERAGE UNDERESTIMATES THE TRUE PERCENT AVERAGE. THE 50-YEAR AVERAGE CONSIDERS ALL SITES WHETHER OR NOT AN UNIMPAIRED RUNOFF VALUE EXISTS FOR A RIVER IN THE BASIN.
(2) MEASURED FLOW IS THE OBSERVED FLOW AT THE SITE.
(3) UNIMPAIRED RUNOFF AVERAGE BASED ON DATA YEARS 1961-2010.
(4) ACCRETIONS BETWEEN STATIONS.

Appendix 6: California Real-Time Gage Data

The U.S.Geological Survey (USGS) National Water Information System Surface Water Data for California web page lists approximately 770 active stream and reservoir gages in California shown on the following map: http://ca.water.usgs.gov/data/waterconditionsmap.html. In addition, there are about 130 additional cooperating agency gages published on California Data Exchange Center (CDEC) that are not USGS stream gages, for a total of approximately 900 active stream and reservoir discharge gages throughout the State.

The table below lists 380 stream and reservoir discharge gages compiled from USGS, CDEC, and cooperating agency websites for the following key watersheds:

- Sacramento River (175)
- Mokelumne River/Eastside Streams (23)
- San Joaquin River (84)
- Tulare Basin (32)
- Klamath River (33)
- Eel River (9)
- Napa River (2)
- Russian River (12)
- Salinas River (10)

The remaining 520 (900 minus 380) stream gages are located in watersheds such as the Truckee River, Santa Ana River, Pescadaro River, Owens River, Carmel River, and many other streams.

Sacramento River Watershed

Sacramento River

Gage Name	Gage ID CDEC	Gage ID USGS	Type
Sacramento River at Freeport	FPT	11447650	Flow
Sacramento R ab Bend Bridge	BND	11377100	Flow
Sacramento River at Butte City	BTC		Flow
Sacramento R at Colusa Weir	CLW		Flow
Sacramento River at Colusa	COL	11389500	Flow
Sacramento River at Delta	DLT	11342000	Flow
Sacramento Deep Water Shipping Channel	DWS		Flow
Sacramento River at Fremont Weir	FRE		Flow
Sacramento River below Georgiana Slough	GES		Flow
Sacramento R at Hamilton City - Main Ch	HMC		Flow
Sacramento River at I Street Bridge	IST		Flow
Keswick Reservoir	KES		Inflow
Keswick Reservoir	KES		Outflow
Keswick	KWK		Flow
Sacramento R at Keswick		11370500	Flow
Sacramento R at Moulton Wier	MLW		Flow

Sacramento R at Ord Ferry - Main Channel	ORD	_	Flow
Sacramento R at Red Bluff Diversion Dam	RDB	_	Flow
Sacramento River at Butte Slough	SBS	_	Flow
Sacramento R above Delta Cross Channel	SDC	_	Flow
Shasta Dam	SHA	_	Inflow
Shasta Dam	SHA	_	Outflow
Spring Creek Debris Dam	SPC	_	Inflow
Spring Creek Debris Dam	SPC	_	Outflow
Sac Regional Wastewater Treatment Plant	SPE	_	Flow
Sacramento River at Hood	SRD	_	Flow
Sacramento River at Rio Vista	SRV	_	Flow
Sacramento River at Tisdale Weir	TIS	_	Flow
Sacramento River at Vina Bridge-Main ch	VIN	_	Flow
Sacramento River at Vina East Bank	VNO	_	Flow
Sacramento River at Verona	VON	11425500	Flow
Whiskeytown Dam (USBR)	WHI	_	Inflow
Whiskeytown Dam (USBR)	WHI	_	Outflow
Sacramento River below Wilkins Slough	WLK	11390500	Flow
Sutter Bypass at Rd 1500 Pump	SBP	_	Flow
Willow Slough at sb West Burrow Pit	WSL	_	Flow
Yolo Bypass at Lisbon	LIS	_	Flow
Yolo Bypass near Woodland	YBY	11453000	Flow

Creeks Tributary to the Sacramento River

Big Chico Creek near Chico	BIC	_	Flow
Black Butte Generator	BBG	_	Flow
Butte Slough near Meridan	BSL	_	Flow
Clear Creek nr Igo	IGO	11372000	Flow
Colusa Drain nr Hwy 20	CDR	_	Flow
Cow Creek near Millville	COW	11374000	Flow
Elder Creek near Paskenta	ECP	11379500	Flow
Kelsey Ck Blw Kelseyville	KCK	_	Flow
Laguna C nr Elk Grove	_	11336585	Flow
Lindo Channel Nr Chico	LCH	_	Flow
Meridan Pumps	MPS	_	Flow
Middle Creek Nr Upper Lake	MCU	_	Flow
Morrison Creek at Florin Road	MRF	11336580	Flow
Mud Creek near Chico	MUC	_	Flow
Ridge Cut at Knights Landing	RCS	_	Flow
Thomes Creek at Paskenta	THO	_	Flow
Battle Creek near Manton	BAS	_	Flow

Battle Creek	BAT	11376550	Flow
North Fork Battle Creek near Manton	BNF	_	Flow
Deer Creek below Stanford Vina Dam	DVD	11383500	Flow
Deer Creek nr Vina	DCV	_	Flow
Mill Creek Below HWY 99	MCH	_	Flow
Mill Creek Nr Los Molinos	MLM	11381500	Flow
Cottonwood Creek Auxiliary Gage	CWA	11376000	Flow
N Fk Cottonwood Ck abv Lk at Brdg nr Ono	NCO	_	Flow
Cherokee Canal Nr Richvale	CHC	_	Flow
BW-12 Import to Butte Creek	BBW	_	Flow
Butte Creek nr Durham	BCD	_	Flow
Butte Creek near Chico	BCK	11390000	Flow
Parrot Div from Butte Creek	BPD	_	Flow

Cache Creek & Tributary Creeks

Cache Creek at Yolo	CCY	11452500	Flow
Indian Valley	INV	_	Flow
NF Cache Creek at Hough Springs	NFC	11451100	Flow
Cache Creek at Rumsey Bridge	RUM	_	Flow
Cache C nr Lower Lake	_	11451000	Flow
Bear Ck at Holsten Cyn nr Rumsey	BRK	11451715	Flow
Kelsey C nr Kelseyville	_	11449500	Flow

Putah Creek

Putah Creek near Guenoc	PCG	11453500	Flow
Putah Creek near Winters	PUT	11454000	Flow
Berryessa	BER	_	Inflow
Berryessa	BER	_	Outflow

Pit River & Tributary Creeks

Pit River near Canby	PCN	11348500	Flow
SF Pit R nr Likely	PLK	11345500	Flow
Pit R Bl Pit No 1 PH nr Fall River Mills	PP1	11355010	Flow
Hat Creek Blw Hat Creek	HCB	_	Flow
Hat Creek nr Hat Creek	HCN	_	Flow

McCloud River

McCloud River below McCloud Dam	MC7	_	Flow
McCloud R at Ah-di-Na	MCA	_	Flow
McCloud River near McCloud	MCD	_	Flow
McCloud River above Shasta Lake	MSS	_	Flow

Delta

Delta Cross Channel	DLC		Flow
Georgiana Slough at Sacramento River	GSS		Flow
Miner Slough at Hwy 44 Bridge	HWB		Flow
Liberty Island @ Approx Cntr S end	LIB		Flow
National Steel	NSL		Flow
Cache Slough at Ryder Island	RYI		Flow
Steamboat Slough btw Sac R and Sutter Sl	SSS		Flow
Sutter Slough at Courtland	SUT		Flow
Three Mile Slough at San Joaquin River	TSL		Flow
False River	FAL		Flow
Jones Tract	JTR		Flow
Middle River at Middle River	MDM		Flow
Old River at Bacon Island (USGS)	OBI		Flow
Old River at Delta Mendota Canal	ODM		Flow
Old River at Highway 4	OH4		Flow
Old River Near Tracy	OLD		Flow
Old & Middle Rvrs, tidally Filtered est	OMR		Flow
Old River at Franks Tract near Terminous	OSJ		Flow
Victoria Canal near Byron	VCU		Flow
DUTCH SLOUGH AT JERSEY ISLAND	DSJ		Flow
GRANTLINE CANAL (USGS)	GLC		Flow
GRANT LINE CANAL EAST	GLE		Flow
MIDDLE RIVER NEAR HOLT	HLT		Flow
HOLLAND CUT NEAR BETHEL ISLAND	HOL		Flow
LITTLE POTATO SLOUGH AT TERMINOUS	LPS		Flow
MIDDLE RIVER ABOVE BARRIER	MAB		Flow
MIDDLE RIVER AT UNDINE ROAD	MRU		Flow
OLD RIVER AT HEAD	OH1		Flow
OLD RIVER AT CLIFTON COURT INTAKE	ORI		Flow
OLD RIVER @ QUIMBLY IS NEAR BETHEL IS	ORQ		Flow
OLD RIVER ABOVE DOUGHTY CUT	ORX		Flow
PARADISE CUT	PDC		Flow
SUGAR CUT	SGA		Flow
TURNER CUT NEAR HOLT	TRN		Flow
WEST CANAL AT CLIFTON COURT INTAKE	WCI		Flow

Feather, Yuba, Bear & American River Watersheds

Feather River & Tributary Creeks

N Fork Feather River below Grizzly Creek	F56		Flow
N Fork Feather River below Rock Cr Div Dam	F57		Flow
Feather River at Boyd's Landing	FBL		Flow
Feather River above Star Bend	FSB		Flow
Feather River near Gridley	GRL		Flow
Hendricks Canal Diversion	HDC		Flow
Indian Creek below Indian Falls	ICR		Flow
Kelly Ridge Powerplant	KLL		Flow
Feather River at Merrimac	MER		Flow
Middle Fork Feather River near Portola	MFP		Flow
Miocene Canal Diversion	MIC		Flow
North Fork Feather River at Pulga	NFP		Flow
Oroville Dam	ORO		Inflow
Oroville Dam	ORO		Outflow
South Honcut Creek near Bangor	SFH		Flow
Spanish Ck above Blackhawk Ck at Keddie	SPK	11402000	Flow
Spanish C at Quincy		11401920	Flow
Total Release-Feather R blw Thermalito	THA		Flow
West Branch Feather R near Magalia	WFR		Flow

Yuba River

North Yuba - blw Goodyears Bar	GYB	11413000	Flow
Oregon Creek - blw Log Cabin	LCB		Flow
Middle Yuba - blw Our House Dam	ORH		Flow
South Yuba - at Jones Bar	JBR		Flow
Yuba River - abv New Bullards Bar	BUL		Flow
Yuba River - blw New Bullards Bar	BUL		Flow
Yuba River - nr Smartville	YRS		Flow
Deer Creek - nr Smartville	DCS	11418500	Flow
Yuba River - nr Marysville	MRY	11421000	Flow

Bear River & Tributary Creeks

South Canal from Bear River	BEV		Flow
Bear River at Pleasant Cove Rd	BPG		Flow
Bear River at Rollins Reservoir	BRE		Flow
Bear River at Wheatland	BRW	11424000	Flow
Bear River at Camp Far West	CFW		Flow
Dry Creek near Wheatland	DCW		Flow

American River & Tributary Creeks

American River at Fair Oaks	AFO	11446500	Flow
American R at Folsom	AMF		Flow
American SF nr Kyburz	AMK		Flow
American River at Chili Bar	CBR		Flow
Echo Lake Conduit	ECH		Flow
Folsom Dam	FOL		Inflow
Folsom Dam	FOL		Outflow
Folsom South Canal	FSC		Flow
Lake Valley Canal	LVC		Flow
Lake Natoma	NAT		Inflow
Lake Natoma	NAT		Outflow
Loon Lake (SMUD)	LON		Flow
NF American R at North Fork Dam	NFD	11427000	Flow
Middle Fk American R nr Oxbow PH	OXB		Flow
Arcade Ck nr Del Paso Hts	ACK	11447360	Flow
Silver Cr blw Camino Dam	SVC		Flow
Rainbow Diversion Dam	RBW		Flow
Black Butte	BLB		Inflow
Black Butte	BLB		Outflow

Mokelumne River/Eastside Streams Watersheds

Cosumnes River

COSUMNES R, NO. FK. NR EL DORADO	CNF		Flow
COSUMNES R AT MICHIGAN BAR	CSN		Flow
DRY CREEK NEAR GALT	DCG		Flow
COSUMNES RIVER AT MICHIGAN BAR	MHB		Flow
COSUMNES R, MID FK. NR SOMERSET	CMF		Flow
COSUMNES RIVER AT MICHIGAN BAR	MHB	11335000	Flow

Mokelumne River

CAMANCHE RESERVOIR	CMN		Inflow
CAMANCHE RESERVOIR	CMN		Outflow
NF MOKELUMNE R BL SALT SPRINGS DAM	M11		Flow
NF MOKELUMNE R AB TIGER CREEK	M38		Flow
NF MOKELUMNE R BL ELECTRA DIVERSION	M46		Flow
NF MOKELUMNE R BL TIGER CREEK AFTERBAY	MBT		Flow
MOKELUMNE R @ SAN JOAQUIN RIVER	MOK		Flow
NORTH MOKELUNME R @ W WALNUT GROVE RD	NMR		Flow
PARDEE	PAR		Inflow
PARDEE	PAR		Outflow

SOUTH MOKELUMNE R @ W WALNUT GROVE RD	SMR		Flow
MOKELUMNE RIVER AT WOODBRIDGE	WBR		Flow
USGS 11336930 MOKELUMNE R A ANDRUS ISLAND NR TERMINOUS CA		11336930	Flow

Calaveras River

MORMON SLOUGH AT BELLOTA (USACE)	MRS		Flow
NEW HOGAN LAKE	NHG		Inflow
NEW HOGAN LAKE	NHG		Outflow
SOUTH SAN JOAQUIN CANAL	SSJ		Outflow

San Joaquin River Watersheds

San Joaquin River	**CDEC**	**USGS**	
SAN JOAQUIN RIVER NEAR VERNALIS	VNS	11303500	Flow
SAN JOAQUIN R AT MAZE RD BRIDGE	MRB		Flow
SAN JOAQUIN RIVER NEAR PATTERSON	SJP		Flow
ORESTIMBA CREEK NR NEWMAN	ORE	11274500	Flow
SAN JOAQUIN R NR CROWS LANDING	SCL	11274550	Flow
ORESTIMBA CK AT RIVER RD NR CROWS LNDG	OCL	11274538	Flow
SAN JOAQUIN RIVER NEAR NEWMAN	NEW	11274000	Flow
SAN JOAQUIN R ABV MERCED R NR NEWMAN	SMN	11273400	Flow
SAN JOAQUIN R AT FREMONT FORD BRIDGE	FFB	11261500	Flow
SAN JOAQUIN RIVER NEAR STEVINSON	SJS		Flow
SAN JOAQUIN RIVER NEAR MENDOTA	MEN	11254000	Flow
SAN JOAQUIN R AT SAN MATEO RD NR MENDOTA	SJN	11253130	Flow
SAN JOAQUIN RIVER BELOW BIFURCATION	SJB		Flow
SAN JOAQUIN RIVER AT GRAVELLY FORD	GRF		Flow
SAN JOAQUIN R BLW HWY 145 (SKAGGS BR)	SKB		Flow
SAN JOAQUIN R AT DONNY BRIDGE	DNB		Flow
SAN JOAQUIN R AT HWY 41	H41		Flow
SAN JOAQUIN RIVER BELOW FRIANT	SJF	11251000	Flow
FRIANT DAM (MILLERTON)	MIL		Inflow
FRIANT DAM (MILLERTON)	MIL		Outflow
SAN JOAQUIN RIVER NEAR AUBERRY	SJA		Flow
SAN JOAQUIN R AT BRANDT BRIDGE	BDT		Flow
CHOWCHILLA BYPASS	CBP		Flow
COTTONWOOD CREEK NEAR FRIANT	CTK		Flow
EASTSIDE BYPASS BLW MARIPOSA BYPASS	EBM		Flow
EASTSIDE BYPASS NEAR EL NIDO	ELN		Flow
JAMES BYPASS	JBP		Flow
LITTLE DRY CREEK (USBR)	LDC		Flow

BEAR CREEK AT MC KEE ROAD	MCK	_	Flow
SAN JOAQUIN RIVER AT MOSSDALE BRIDGE	MSD	_	Flow
MUD SLOUGH NR GUSTINE	MSG	_	Flow
N FK WILLOW CK NR SUGAR PINE	NFW	_	Flow
SAN JOAQUIN RIVER ABOVE DOS REIS	SJD	_	Flow
SAN JOAQUIN RIVER AT GARWOOD BRIDGE	SJG	_	Flow
SAN JOAQUIN RIVER AT JERSEY POINT (USGS)	SJJ	_	Flow
SALT SLOUGH AT HWY 165 NR STEVINSON	SSH	_	Flow

Stanislaus River

STANISLAUS RIVER AT RIPON	RIP	11303000	Flow
STANISLAUS R AT ORANGE BLOSSOM BRIDGE	OBB	_	Flow
BLACK CREEK NR COPPEROPOLIS	BCC	11299600	Flow
NEW MELONES RESERVOIR	NML	_	Inflow
NEW MELONES RESERVOIR	NML	_	Outflow
SF STANISLAUS R NR STRAWBERRY DIV DAM	S83	_	Flow
MF STANISLAUS R BEARDSLEY LAKE	BRD	_	Outflow
MF STANISLAUS R BL SANDBAR DIV DAM	S12	_	Flow
MF STANISLAUS R AT KENNEDY MEADOWS	S52	_	Flow
NORTH FORK STANISLAUS RIVER NEAR AVERY	NSA	_	Flow
SF STANISLAUS R AT STRAWBERRY	S61	_	Flow
SF STANISLAUS R NR STRAWBERRY DIV DAM	S83	_	Flow

Tuolumne River

TUOLUMNE RIVER AT MODESTO	MOD	11290000	Flow
TUOLUMNE R AT WATERFORD	TRW	_	Flow
TUOLUMNE R BLW LA GRANGE DAM NR LA GRANG	LGN	11289650	Flow
TUOLUMNE R ABV EARLY INTAKE NEAR MATHER	TAI	11276600	Flow
TUOLUMNE R BL EARLY INTAKE NEAR MATHER	TBI	11276900	Flow
CHERRY CK BL DION R PH NR MATHER	CBD	11278400	Flow
CHERRY CREEK NEAR EARLY INTAKE	CEI	11278300	Flow
TUOLUMNE R AT THE GRAND CYN OF TUOLUMNE	TGC	11274790	Flow
TUOLUMNE RIVER NEAR HETCH HETCHY	TRH	11276500	Flow
CHERRY CK BL VALLEY DAM NR HETCH HETCHY	CBV	11277300	Flow
ELEANOR CK NR HETCH HETCHY	ECK	11278000	Flow
CHERRY CK BL VALLEY DAM NR HETCH HETCHY	CBV	11277300	Flow
ELEANOR CK NR HETCH HETCHY	ECK	11278000	Flow
DRY CREEK AT MODESTO AT CLAUS ROAD	DCM	_	Flow
LAKE ELEANOR DIV TUNNEL	EDT	_	Flow
FALLS CK NR HETCH HETCHY	FHH	_	Flow
MID CANAL AT LA GRANGE	MID	_	Flow

MF TUOLUMNE R NR OAKLAND REC CAMP	MTO		Flow
SF TUOLUMNE R NR OAKLAND REC CAMP	STO		Flow
TID CANAL AT LA GRANGE	TIL		Flow
TUOLUMNE MEADOWS	TUM		Flow
UPPER CHERRY CK	UCC		Flow

Merced River

MERCED RIVER NEAR STEVINSON	MST		Flow
MERCED RIVER AT CRESSY	CRS		Flow
MERCED R AT SHAFFER BRIDGE NR CRESSY	MBN		Flow
MERCED RIVER NEAR SNELLING	MSN		Flow
MERCED R BLW CROCKER-HUFFMAN DAM	MBH		Flow
MERCED RIVER BELOW MERCED FALLS	MMF		Flow
NEW EXCHEQUER-LK MCCLURE	EXC		Inflow
NEW EXCHEQUER-LK MCCLURE	EXC		Outflow
MERCED RIVER NEAR BRICEBURG	MBB		Flow
MERCED R AT POHONO BR NR YOSEMITE	POH	11266500	Flow
MERCED R AT HAPPY ISLES BR NR YOSEMITE	HIB	11264500	Flow
BIG CK DIVERSION NR FISH CAMP	BFG		Flow
DRY CREEK NR SNELLING	DSN		Flow
SOUTH FORK MERCED RIVER AT WAWONA	SMW		Flow

Tulare Watershed

Kings River

KINGS RIVER BELOW ARMY WEIR	AMW		Flow
KINGS RIVER BELOW CRESCENT WEIR	CSW		Flow
KINGS R NR TRIMMER	KRT		Flow
KINGS RIVER AT MEADOWBROOK	MBK		Flow
NF KINGS RIVER BLW DINKEY CREEK	NKD		Flow
MILL CREEK NEAR PIEDRA	PDR		Flow
PINE FLAT DAM	PNF		Inflow
PINE FLAT DAM	PNF		Outflow

Kaweah River

DRY CREEK NEAR LEMONCOVE	LCV		Flow
TERMINUS DAM	TRM		Inflow
TERMINUS DAM	TRM		Outflow
KAWEAH RIVER AT THREE RIVERS	TRR		Flow

Kern River

BOREL CANAL SIPHON	BOS		Flow

ISABELLA DAM	ISB		Inflow
ISABELLA DAM	ISB		Outflow
KERN R AT KERNVILLE	KKV		Flow
KERN R BL KERN CYN PH DIV DAM, KE-16	KRD		Flow
SOUTH FORK KERN RIVER NEAR ONYX	SKO	11189500	Flow

Fresno River

FRESNO R ABV HENLEY LAKE	FHL		Flow
FRESNO R LEWIS FORK NR OAKHURST	FRU		Flow
HIDDEN DAM (HENSLEY)	HID		Inflow
HIDDEN DAM (HENSLEY)	HID		Outflow

Tule River

ELK BAYOU	EBY		Flow
SUCCESS DAM	SCC		Inflow
SUCCESS DAM	SCC		Outflow
USGS 11204100 SF TULE R NR RESERVATION BNDRY NR PORTERVILLE CA		11204100	Flow
USGS 11203580 SF TULE R NR CHOLOLLO CAMPGROUND NR PORTERVILLE CA		11203580	Flow

Tributary to Tulare Basin

LOS GATOS CREEK NEAR COALINGA	LGC	11224500	Flow
USGS 11253310 CANTUA C NR CANTUA CREEK CA		11253310	Flow
USGS 11255575 PANOCHE C A I-5 NR SILVER CREEK CA		11255575	Flow
USGS 11200800 DEER C NR FOUNTAIN SPRINGS CA		11200800	Flow
WHITE RIVER AT ROAD 208	WRV		Flow

Klamath River Watershed

Klamath River

Indian Crk Nr Happy Camp	IHC	11521500	Flow
Klamath R. blw Iron Gate	KIG	11516530	Flow
Klamath R at Orleans	KLO		Flow
Klamath R. nr Klamath	KNK	11530500	Flow
Klamath R. nr Seiad Valley	KSV	11520500	Flow
Klamath R. at Orleans	OLS	11523000	Flow
Salmon River at Somes Bar	SMS	11522500	Flow
Shasta River nr Montague	SRM	11517000	Flow
Shasta River nr Yreka	SRY	11517500	Flow

Trinity River

Trinity Lake	CLE		Inflow
Trinity Lake	CLE		Outflow
Trinity River at Douglas City	DGC	11525854	Flow
Trinity River at Douglas City	DGC		Flow
Grass Valley Crk nr Lewiston	GVC	11525630	Flow
Trinity River at Hoopa	HPA	11530000	Flow
Indian Crk nr Douglas City	ICD	11525670	Flow
Lewiston	LEW		Inflow
Lewiston	LEW		Outflow
Lewiston (Water Quality)	LWS	11525500	Flow
Trinity R abv NF Trinity nr Helena	NFH	11526400	Flow
NF Trinity River at Helena	NTR	11526500	Flow
Rush Creek nr Lewiston	RCL	11525530	Flow
Trinity River blw Hyampom	TBH	11528700	Flow
Trinity River nr Burnt Ranch	TBR	11527000	Flow
Trinity River at Junction City	TJC	11526250	Flow
Trinity River blw Limekiln Gulch	TLK	11525655	Flow
Trinity River at Lewiston	TNL		Flow
Trinity River abv Coffee Crk nr Trinity Ctr	TRC	11523200	Flow

Scott River

Darbee Ditch nr Callahan	DDC		Flow
Sugar Crk blw Darbee Ditch nr Callahan	SDA		Flow
Scott R. nr Fort Jones	SFJ	11519500	Flow
Scott R. nr Fort Jones	SFJ		Flow

Miscellaneous Rivers

Smith River

Smith River nr Crescent City	JED	11532500	Flow

Eel River

Van Duzen - Bridgeville		11478500	Flow
Middle Eel - Dos Rios	DOS	11473900	Flow
South Eel - Leggett	LEG	11475800	Flow
South Eel - nr Miranda	MRD	11476500	Flow
Eel River blw Lake Pillsbury	ELP		Outflow
Eel River blw Van Arsdale Dam	EVA		Flow
Eel River - at Fort Seward	FSW	11475000	Flow
Eel River - Scotia	SCO	11477000	Flow
Bull Creek - nr Weott	BCW	11476600	Flow

Napa River

Napa River near Napa	NAP	11458000	Flow
Napa River near St Helena	STH	11456000	Flow

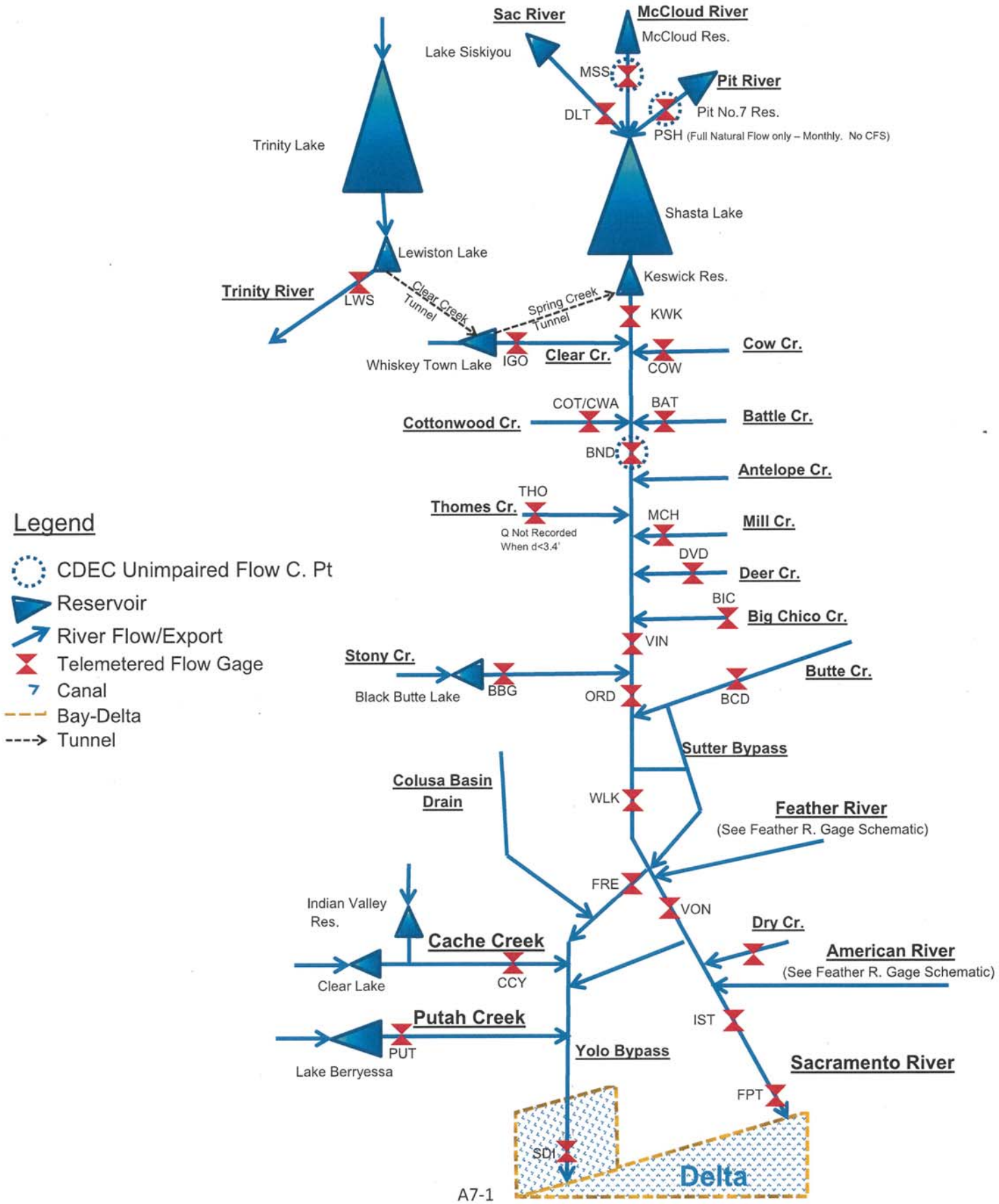
Russian River

East Russian - abv Lake Mendocino		11461500	Flow
Russian River - Below Lake Mendocino	COY		Outflow
Big Sulphur Cr - at Geysers Resort		11463170	Flow
Big Sulphur Cr - nr Cloverdale		11463200	Flow
Russian River - nr Ukiah	RRU	11461000	Flow
Russian River - at Hopland	HOP	11462500	Flow
Russian River -nr Cloverdale	CLV	11463000	Flow
Russian River - blw Warm Springs	WRS		Outflow
Russian River - nr Healdsburg		11464000	Flow
Dry Creek - nr Healdsburg	DRY		Flow
Russian River - nr Hacienda Bridge	HAC		Flow
Russian River - nr Hopland	HOP		Flow

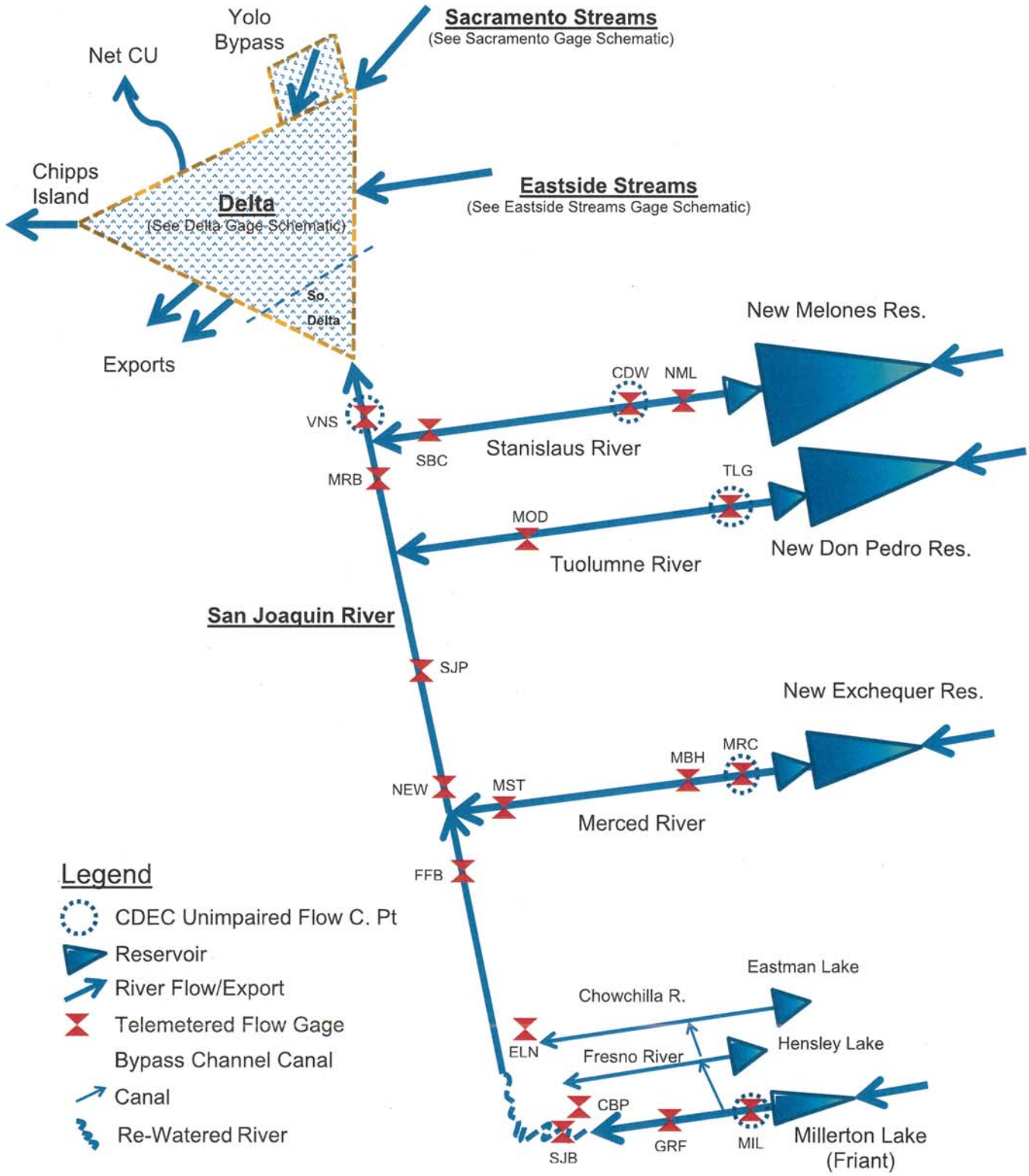
Salinas River

Arroyo Seco near Soledad	ASS	11152000	Flow
Arroyo Seco bl Reliz near Soledad		11152050	Flow
Gabilan Creek near Salinas		11152600	Flow
Reclamation Ditch near Salinas		11152650	Flow
Salinas River at Soledad		11151700	Flow
Salinas River near Bradley	BRA	11150500	Flow
Salinas River near Chualar		11152300	Flow
Estrella River near Estrella	EST		Flow
Salinas River at Paso Robles	PAS	11147500	Flow
Salinas River near Spreckels	SPR	11152500	Flow

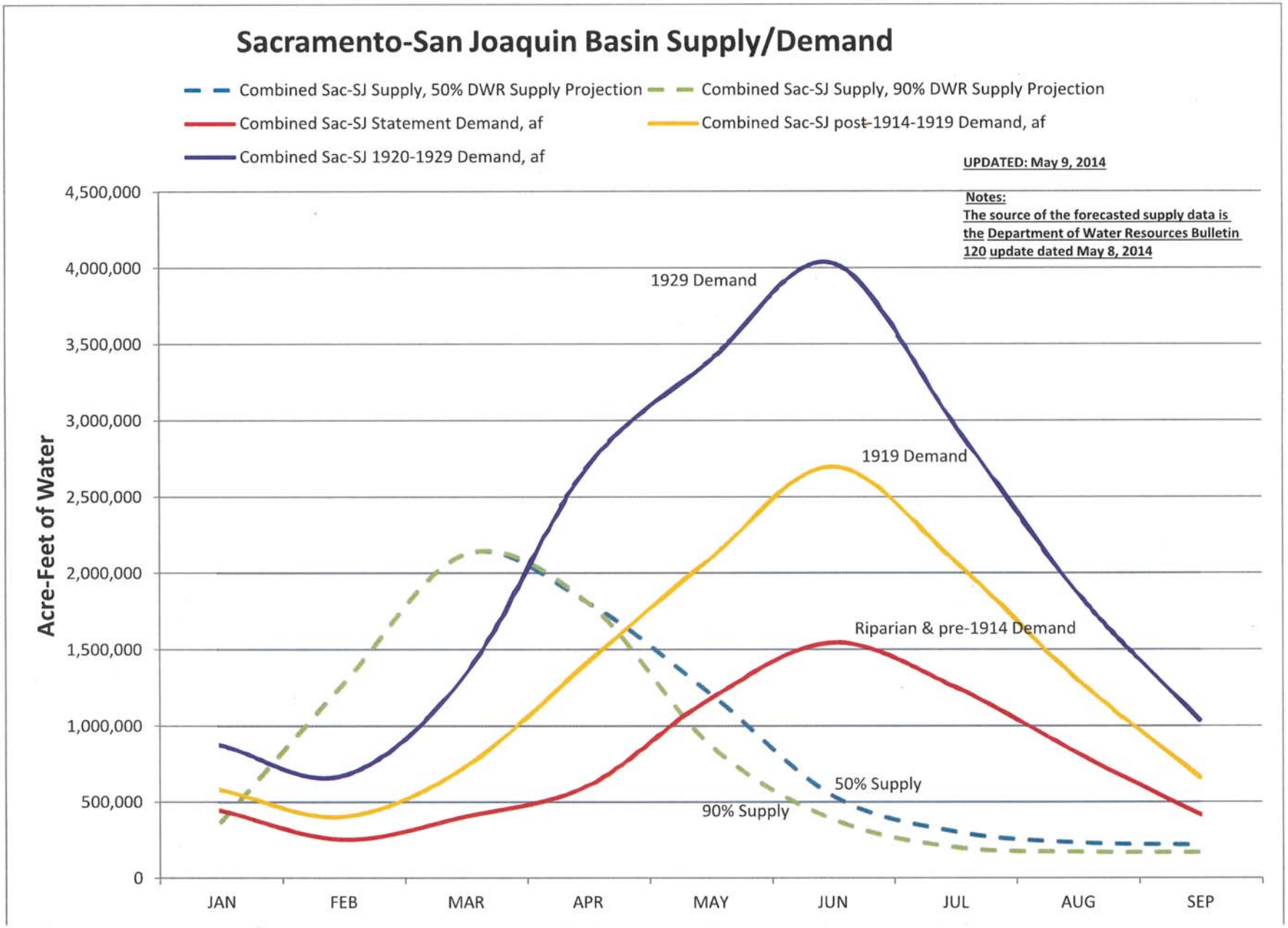
Appendix 7: Sacramento River Watershed Hydrology Schematic



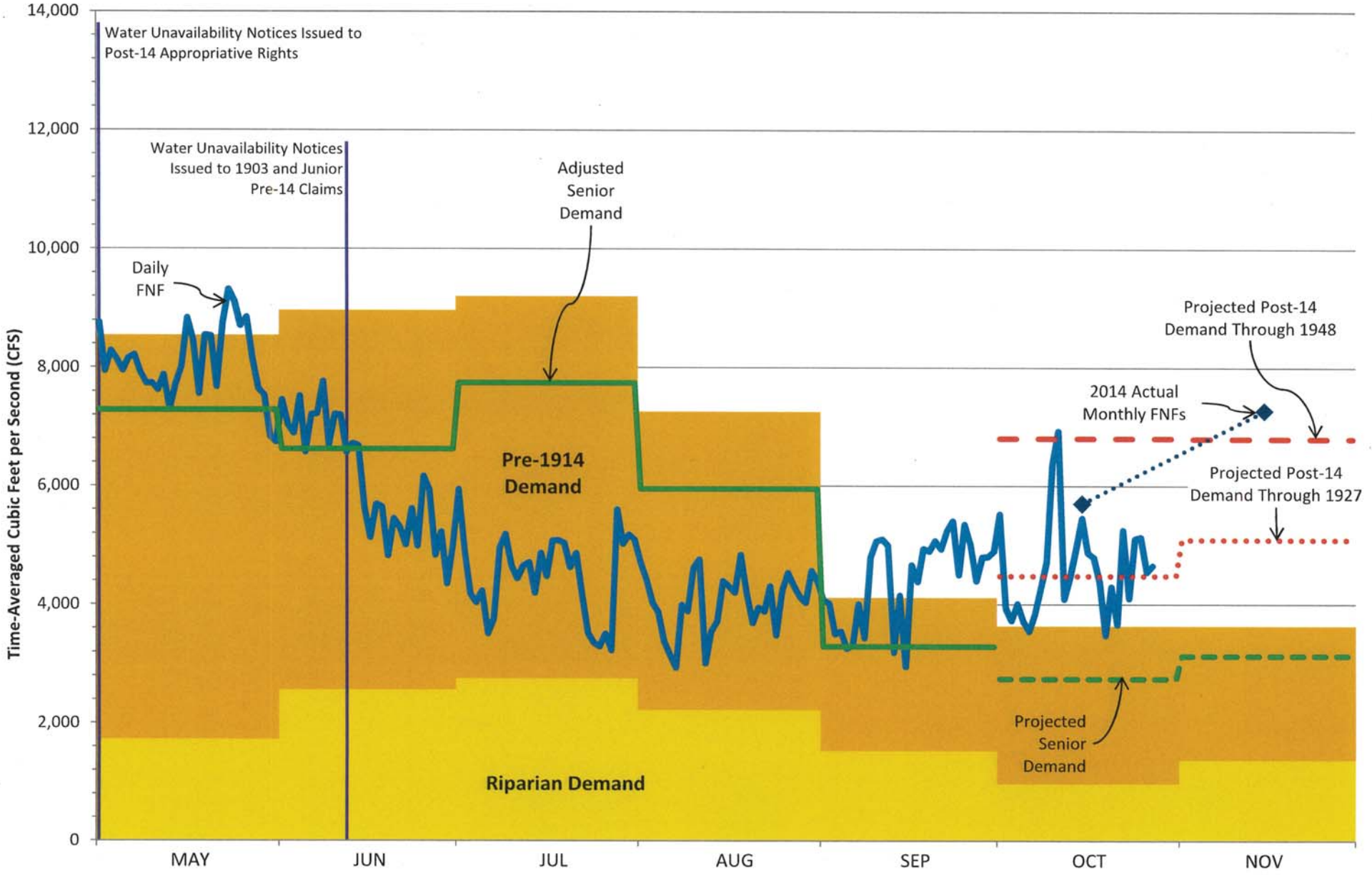
Appendix 8: Delta Watershed Hydrology Schematic



Appendix 9: Sacramento-San Joaquin Basin Supply/Demand Plot



2015 Sacramento River Basin Supply/Demand Analysis with Proportional Delta Demand



See following page for additional information.

10/30/2015

Appendix 10: Public Agency and Government Fiscal Impact Analysis

Summary

This cost estimate considers the fiscal effect of the proposed regulation. On July 2, 2014, the State Water Board approved Resolution No. 2014-0031, adding sections 875 and 878.3 and amending section 878.1 and 879 in title 23, division 3, chapter 2, article 24 of the California Code of Regulations (2014 emergency regulation). After approval by the Office of Administrative Law (OAL), the 2014 emergency regulation went into effect on July 16, 2014 and would expire automatically on April 14, 2015 (effective for 270 days).

On March 17, 2015, the State Water Board updated and readopted only section 879, subdivision (c). After approval by OAL on March 27, 2015, the emergency regulation went into effect and would expire automatically on December 12, 2015. On December 1, 2015, the State Water Board approved a resolution to readopt as an emergency regulation section 879, subdivision (c), with minor updates.

Fiscal Effect of Proposed Section 879. Subdivision (c)

The only fiscal effect of the proposed regulation relevant to Government Code section 11346.5, subdivision (a)(6) is the cost that would be incurred by state and local government agencies to complete and submit an online informational form and supporting documentation. The State Water Board estimates that the total cost to state and local government agencies to complete and submit the online informational form and supporting documentation will be approximately $504,530. The proposed regulation is not anticipated to have a financial impact on state agencies or school districts or to result in costs or savings in federal funding to the State.

Analysis of Fiscal Effects of Proposed Section 879. Subdivision (c)

The proposed regulation imposes two potential obligations, or costs, on a diverter that would not exist without the proposed emergency regulation. Under an Informational Order issued pursuant to the proposed regulation, the Board will direct the recipient of the order to provide sufficient supporting documents to verify the claimed right and also requires recent (2015) and projected (2016) water use. The reporting of water diversion and use is an existing requirement on almost all diverters, excepting certain de minimus diversions and diversions reported by other methods; however current reporting obligations require less information, less often. Reporting of projected water use is a new requirement for drought planning. The proposed regulation also may result in the provision of additional information regarding a diverter's basis of right; currently diverters may only be required to provide statements regarding their bases of right, without providing supporting documentation. Filling out the online informational form and providing the supporting documentation is the only additional burden-to state and local government agencies associated with the proposed emergency regulation.

To conservatively estimate the cost of the proposed regulation, the Board determined the total number of state and local government agencies in California and multiplied that number by an estimated average time to complete the online informational form and submit any supporting documentation, multiplied by an average staff cost per hour.

The estimated costs associated with the proposed regulation are based on a worst-case scenario that all state and local government agencies with active water rights within the state will ultimately be issued an Informational Order. Based on information compiled from the State Water Board's eWRIMS database, there are approximately 2,483 water right claims held by state and local government agencies (8.7% of all active riparian, and appropriative water rights) that could be affected. The amount of time required to complete the online informational form and submit supporting documentation will depend on whether each agency already has documentation regarding its basis of right or needs to obtain such information (e.g., parcel and patent information for riparian diversions). Only minimal additional time is expected to be needed to provide 2015 diversion records and projected 2016 water use. All riparian and appropriative water right diverters are already required to file Statements of Water Diversion and Use (Statements) (Wat. Code, §§ 5100 et. seq.; Cal. Code Regs., tit. 23, §§ 847, 925, 929.) and to maintain diversion records. Thus, recordation of water use is not a new requirement with a new fiscal impact. Only the projection of 2016 use is new. For most diverters, this can be expected to be similar to the 2015 diversion data, as the years are likely to be similarly dry, and will require only minimal additional time to prepare. Some diverters may have different plans for the upcoming year. For example, some diverters may plan to take fields out of or putting them back into production, or implement new conservation practices. However, the type of events that would change anticipated water needs are generally known in advance and require advance planning, and therefore reporting on the anticipated changes should not require much additional time.

Completion of the online form is expected to take less than 1 hour. The 2,483 claims consists of 2,058 post-1914 water rights and 425 riparian and pre-1914 claims of right. For the 2,058 post-1914 water rights held by state and local governments, the informational order will only require diversion reporting since proof of right is established by the Board. However, for the 425 riparian and pre-1914 rights held by state and local governments the total time for compilation of records will vary depending on whether an agency has documentation of its basis of right, or must complete patent and other research to document the right. For agencies that have the documentation, it will take minimal time to assemble the records (estimated to be 3 to 5 hours). This assumes that the agencies exercising riparian rights have their assessor's parcel information, patent, purchase deed, and, for severed riparian parcels, chain of title deeds, and that agencies exercising pre-1914 appropriative rights have information regarding the rights' priority date and use.

Agencies that lack documentation would need to identify and potentially procure the patents associated with their assessor's parcels to verify the priority date of the right and obtain chain of title deeds for severed riparian parcels, or information supporting pre-1914

rights. To provide direction and assistance in finding patent records, the Board has provided a link to the U.S. Bureau of Land Management's patent database and is posting State Lands Commission patent data on its website. The time required to find and collect the requested documentation will vary depending on expertise in records research, whether the task is contracted out to a firm with experience locating such records, etc. It is estimated to take between 8 and 24 hours and is contingent on whether the agency has partial records or no records readily accessible.

Thus, the time range to collect and provide documentation that may be requested for riparian and pre-1914 claims is estimated to be between 6 hours (5 hours to assemble records plus 1 hour to complete form) and 25 hours (24 hours to obtain and assemble records plus 1 hour to complete form). Inasmuch as agencies are required to exercise due diligence prior to using public funds to purchase property, it is estimated that at least half of the agencies will have partial or complete records. The remaining agencies will likely have incomplete records. Thus, the average time is expected to be 15.5 hours.

The estimated average total hourly staff costs of state and local government agency staff required to complete the online informational form and provide the supporting documentation is conservatively estimated using $65 per hour, or $65 per form for post-1914 rights and $1,007.50 per form for riparian and pre-1914 claims. There are a total of 2,058 post-1914 rights and 425 riparian and pre-1914 water right claims held by state and local government agencies. It is unknown whether there are additional diversions by agencies that have not been documented in accordance with the existing law. In 2015, the State Water Board issued Informational Orders on 57 of the 425 riparian and pre-1914 rights, reducing the number of potential future orders to 368. Thus, the potential cost of the regulation is $504,530 (2,058 *$65 + 368 * $1,007.50 = $504,530).

The estimated costs associated with the proposed regulation are conservative, based on the unlikely scenario that all agencies with water right claims within the state will ultimately be issued an Informational Order. In reality, the Informational Orders are likely to be focused only on some water right holders, diverters and users in watersheds with high competition for water and significant demand/supply imbalances during drought, as the Board does not have the resources to investigate each diversion in the state, and the regulation limits issuance of Information Orders depending on the filing of a complaint, the response (or lack thereof) to a curtailment order, curtailment notice or an investigation, or on the Board having information that a diversion may be unauthorized, or there is a threat of waste, unreasonable use or unreasonable method of diversion. The total number of Informational Orders will likely be a small percentage of the total number of claimed water rights held by state or local government agencies throughout California. Therefore, the total costs to state and local government agencies will likely be much less than the maximum estimated cost.

Appendix 11: Informational Order Reporting Form (Example)

Home ➔ Water Issues ➔ Programs ➔ Ewrims ➔ Curtailment

Informational Order Supporting Data (Part 1 - in development)

- Please fill out and submit the web form below for *each* Statement of Water Diversion and Use (Statement). As you move through the form, use the "Back to. . . " to return to a previous section to revise your information.
- **Preview the Complete Form** (PDF) in order to gather the necessary information.
- Attachments should be sent to the following email address: SWRCB-2014informational-order@waterboards.ca.gov with the subject title named as directed in the web form.

Questions regarding this form can be directed to: Phone: 916-341-5342

If you have previously started this form, or returned to this form from the summary (Part 4), you can **continue** by entering your Statement Number and password, and clicking "Search"
You can **clear the form** by deleting the password and clicking "Search".

Statement Number: | Password: Search

You can also **reset your password** below.
If you don't know your password, please contact:
Email: SWRCB-2014informational-order@waterboards.ca.gov
Phone: 916-341-5342

Top of Form

Enter the Statement Number associated with this report (e.g., S012345). If you are reporting for multiple water rights, please use a separate web submission for each Statement Number.	
Statement Number: *	| Location of Water Right (County):
Set/Reset Password	
Adjudication Name:	| Adjudication Diversion No.
Primary Owner:*	
Mailing Address:	
City:	, State: Zip: 0
Telephone:*	000-000-0000
Email:*	
Person Filing This Form: *	

Mailing Address:	
City:	, State: Zip: 0
Telephone: *	000-000-0000
Email:*	
(Required*)	
Save & Continue to Part 2	

Revised February 4, 2015, February 18, February 24

Part 2

Statement Number: S_____ Timestamp: 15-03-03 17:25:22
Owner:
Address: , , , 0
County:
Email:

Filer:
Address: , , , 0
Email:

Back to Part 1

Use of Water (select your primary consumptive use only. If power generation is your primary use, select "Power Generation" and do not include other incidental uses.) **Completion of this section is required.**

- Municipal — Population Served
- Domestic — Number of People Served
- Stockwatering — Number of Stock
- Irrigation — Acres Irrigated
- Power Generation — Is all water diverted for power generation returned to the source with no storage? Yes | No

If No, please describe your power operation and what months and percentage of water diverted, on average, is collected to storage:

- Other

(describe):

Basis of Right Claimed and Supporting Documentation (Completion of one or all three of the following sections below is required, if they apply to your diversion.)

Riparian Right

Riparian Patent Date:
Parcel Number(s) for Property Served under Riparian Right (list all, separated by commas, or if large entity provide a service area map identifying all property served under this right):

Has your parcel been severed from the riparian watercourse but the riparian claim preserved through title? Yes | No
If yes, you must provide copy of deed.

Patent maps may be obtained at:
http://www.glorecords.blm.gov/ (opens in a new tab/window).

The State Water Board's Delta Watermaster has received limited patents information for properties within the Delta area. If you own property in the Delta, you may research this information by opening the following link to the Delta Watermaster's website. This opens in a new page.

☐ - Check if you are providing the attachments listed below. Please note: The attachments must be filed electronically at SWRCB-2014informational-order@waterboards.ca.gov with the subject header as follows, "Subject: S012345 Riparian Claim Supporting Documents" where S012345 is replaced with your Statement Number.

- Copy of Patent
- Patent Map
- Parcel or Property Map
- Copy of Title preserving riparian claim (If Applicable)

Pre-1914 Right

Pre-1914 Right: Priority Date being claimed ▾ | Year that water was first used ▾

Parcel Number(s) for Property Served under Pre-1914 (list all, separated by commas, or if large entity provide a service area map identifying all the properties served under this right):

Has the pre-1914 right being claimed been used continuously since first use? ○ Yes | ○ No or Unknown

If No or Unknown, indicate the time periods that the pre-1914 claim was not used or that the use was unknown

☐ - Check if you are providing the attachments listed below. Please note: The attachments must be filed electronically at SWRCB-2014informational-order@waterboards.ca.gov with the subject header as follows, "Subject: S012345 Pre-1914 Claim Supporting Documents" where S012345 is replaced with your Statement Number.

- County and Parcel Number Served or Map of Service Area
- Copy of Appropriation filed with County
- Signed declaration or evidence supporting continuous use

Water Supply Contract (if applicable)

Who do you have a water supply contract with? USBR ☐ | DWR ☐

Name of other provider:

Contract No.

Amount (Acre-feet) authorized to divert under this contract:

Amount (Acre-Feet) authorized to be diverted in 2014?

Amount (Acre-Feet) projected for 2015?

Statement Number: S_____

Save & Continue to Part 3

Part 3 - Monthly Diversion Amounts and Basis for Diversions (water right claim or contract)

Statement Number: S_____ Number of Rows: 1

Statement Number: S_____
Owner:
Address: ,
Filer:
Primary Water Use: -

Back to Part 2

Instructions: For the water right Statement associated with this report, please record the amount of water you diverted under a water right claim or under a contract. In the first table, please do the following: 1) Select the basis for the diversion for each month (i.e. riparian and/or pre-1914); 2) Record the amount diverted to storage or directly diverted and the maximum rate of diversion for each month in 2014, and 3) Record your projected monthly diversion amounts for 2015. In the second table, if you also diverted water under a water supply contract, please record any amount diverted in excess of underlying water right as water diverted under a contract for each month in 2014, if any. Please note that the units for reported and projected diversion amounts are fixed as 'acre-feet', therefore, please ensure that diversion amounts that are in other units are converted to 'acre-feet' prior to submitting the data. Maximum rate of diversion must be in units of 'cubic feet per second.

1 acre-foot = 325851.43 U.S. gallons (gal)	To convert, enter a value in one box, then click in the other box to see the result. Do not use comma separators.
	100000 gal = 0.31 acre-feet

2014 MONTHLY STATEMENT DIVERSIONS AND 2015 MONTHLY PROJECTED STATEMENT DIVERSIONS

ENTER ONLY NUMERIC VALUES, DO NOT INCLUDE UNITS, AND DO NOT LEAVE ANY FIELD BLANK. IF NO DIVERSION OR PROJECTED DIVERSION FOR A GIVEN MONTH, ENTER ZERO (0). PLEASE NOTE THAN BLANK FIELDS OR ANY ENTRY WITH NON-NUMERIC CHARACTERS WILL APPEAR AS ZERO (0.000) AFTER SUBMITTAL.

Do Not use comma separators. Do Not report the same value for Riparian and Pre-1914.
For each month in 2015, record your projected montly diversion amounts under the water rights claim(s) of your Statement.

Month	Water Right Type	2014 Diversion to Storage (acre-feet)	2014 Direct Diversion acre-feet	2014 Maximum Rate of Diversion cubic feet per second	2015 Projected Diversion to Storage acre-feet	2015 Projected Direct Diversion acre-feet
January:	Riparian:	0.000	0.000			
	Pre1914:					
February:	Riparian:	0.000	0.000		0.000	0.000
	Pre1914:					
March:	Riparian:	0.000	0.000		0.000	0.000
	Pre1914:					
April:	Riparian:	0.000	0.000			
	Pre1914:					
May:	Riparian:					
	Pre1914:					
June:	Riparian:					
	Pre1914:					
July:	Riparian:					
	Pre1914:					
August:	Riparian:					
	Pre1914:					
September:	Riparian:					
	Pre1914:					
October:	Riparian:					
	Pre1914:					
	Riparian:					

November:						
	Pre1914:					
December:	Riparian:					
	Pre1914:					

Water Transfer Section:

Was any water diverted under this Statement transferred in 2014? ○ Yes ○ No

If yes, please state quantity transferred in acre-feet: (AF)

Transfer occurred from Day, Month, TO Day, Month.

This transfer was approved by: State Water Board, DWR, USBR.

2014 MONTHLY WATER SUPPLY CONTRACT DIVERSION AMOUNTS (ACRE-FEET)

ENTER ONLY NUMERIC VALUES, DO NOT INCLUDE UNITS, AND DO NOT LEAVE ANY FIELD BLANK. IF NO CONTRACT WATER DIVERSION FOR A GIVEN MONTH, ENTER ZERO (0). PLEASE NOTE THAT BLANK FIELDS OR ANY ENTRY WITH NON-NUMERIC CHARACTERS WIL APPEAR AS ZERO (0) AFTER SUBMITTAL.

January	February	March	April	May	June
July	**August**	**September**	**October**	**November**	**December**

Please enter any comments or explanations below. Do not copy and paste text.

Bottom of Form

When ready to submit, click the button below.

Save & Submit Form