

Technical Workshop on Alternative Curtailment Methodologies for the Delta Watershed

December 15, 2021
10:00 AM – 4:00 PM



State Water Resources Control Board

Workshop Logistics

- Recording will be posted on the Delta Drought webpage at: waterboards.ca.gov/drought/delta/
- Webcast is available at: video.calepa.ca.gov/
- How to participate:
 - Fill out virtual speaker card using online form provided in workshop notice
- Email us: Bay-Delta@waterboards.ca.gov

Agenda



Introduction and Background



Purpose of the Workshop



Standard Water Right Term 91 Overview



Methods to Expand Term 91 Type
Approach



Input from Stakeholders and Interested
Persons

Introduction

- Workshop notice issued November 18, 2021
- Purpose of workshop to receive public input to inform future drought response actions in the Sacramento/San Joaquin Delta (Delta) Watershed
- No specific proposals for additional actions are being brought forward by staff at this time
- If, and when, any specific proposals are developed for possible future actions, there will be additional opportunity for public input
- Written public input on issues discussed in this workshop can be provided following this workshop by emailing Bay-Delta@waterboards.ca.gov

Drought Proclamations

- April – Proclamation of State of Drought Emergency for some counties
- May – expanded Drought Emergency Proclamation to include the Delta watershed
 - Necessary to act expeditiously to mitigate effects of drought conditions in Delta watershed, to ensure protection of health, safety, and the environment and prepare for potential sustained drought conditions
 - Directs State Water Board to consider emergency regulations to curtail water diversions when water not available at right holders' priority of right or to protect releases of stored water in Delta watershed

Actions to Date to Address Water Unavailability

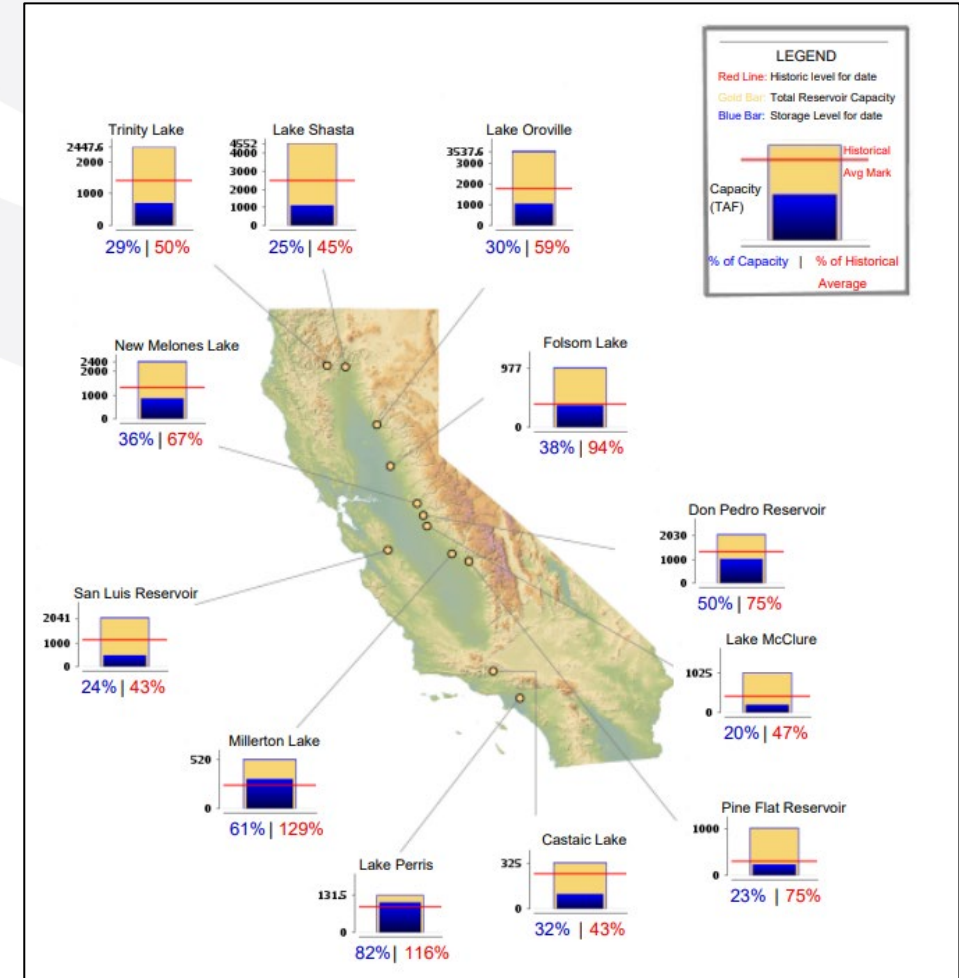
- May 2021 – Draft Water Unavailability Methodology (Methodology)
- June 2021 – Released updated Methodology and notices of water unavailability to junior water rights (post-1914 appropriative)
- July 2021 – Released updated Methodology, draft emergency regulation, and notices of water unavailability to senior water rights
- August 2021 – Adopted emergency curtailment regulation, updated Methodology, and issued curtailments to water right holders
- At least weekly – Updates to curtailments based on current data
- September 2021 – Released additional updates to Methodology
- October 20 – Workshop on updates to Methodology
- **December 2021 – Workshop to consider alternate methods for addressing water unavailability**
- 2022 – Possible additional actions if conditions are dry

Workshop Topics

- August 3 Board Resolution adopting Delta curtailment regulation directs staff to engage with stakeholders by December 31, 2021, to discuss other possible approaches to address severe water supply shortages
- Topics identified in November notice:
 - Possible development and implementation of Term 91 like curtailment method, report explaining possible methods released December 10
 - Other near-term possible curtailment methods or other actions that should be considered if conditions remain dry
 - Possible methods for determining shortages to riparian water right claimants which is not currently addressed in the Methodology

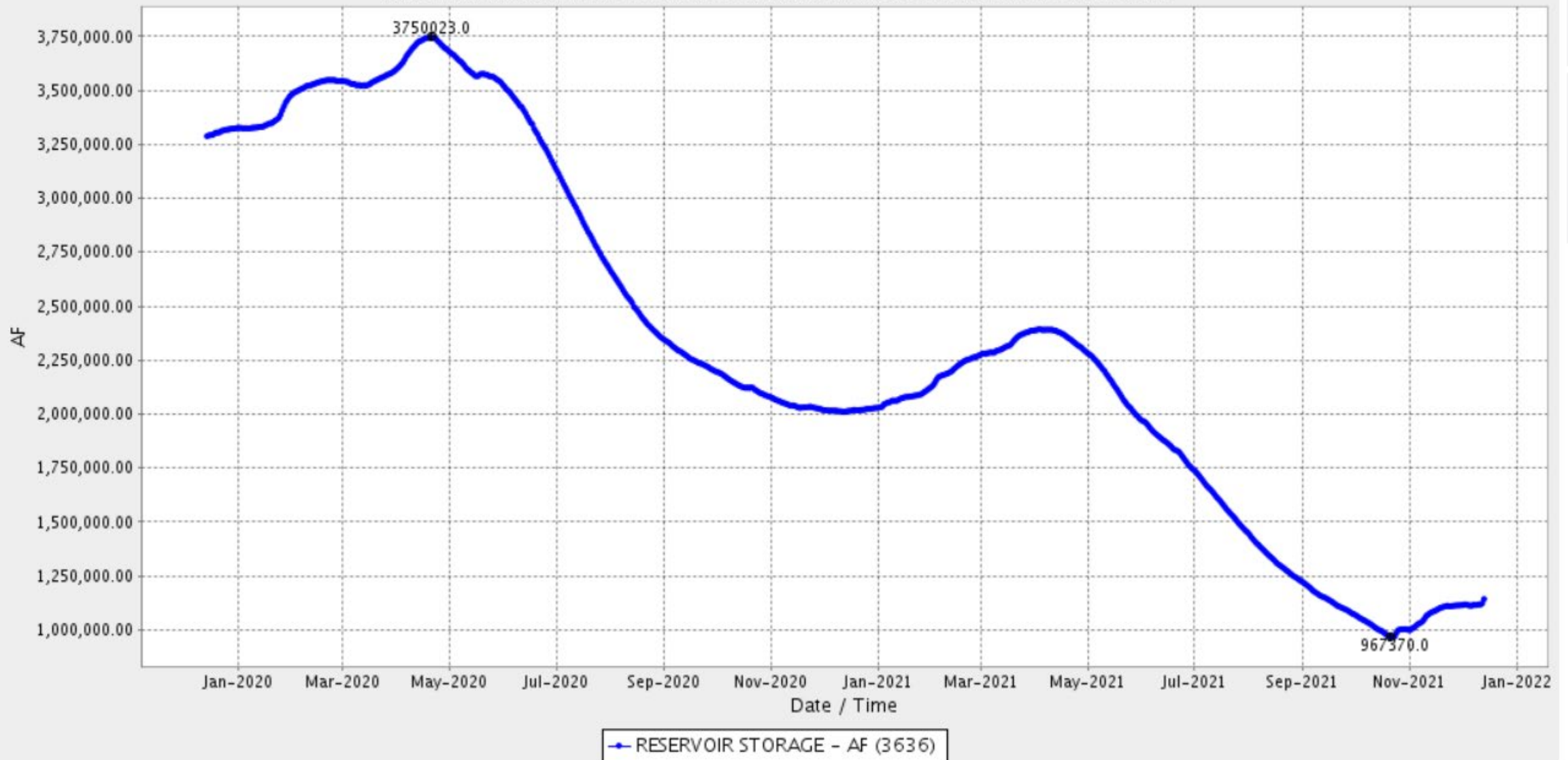
Drought Hydrologic Conditions

- Driest two years on record statewide
- Low project reservoir storage
- Substantial uncertainty regarding reservoir refill



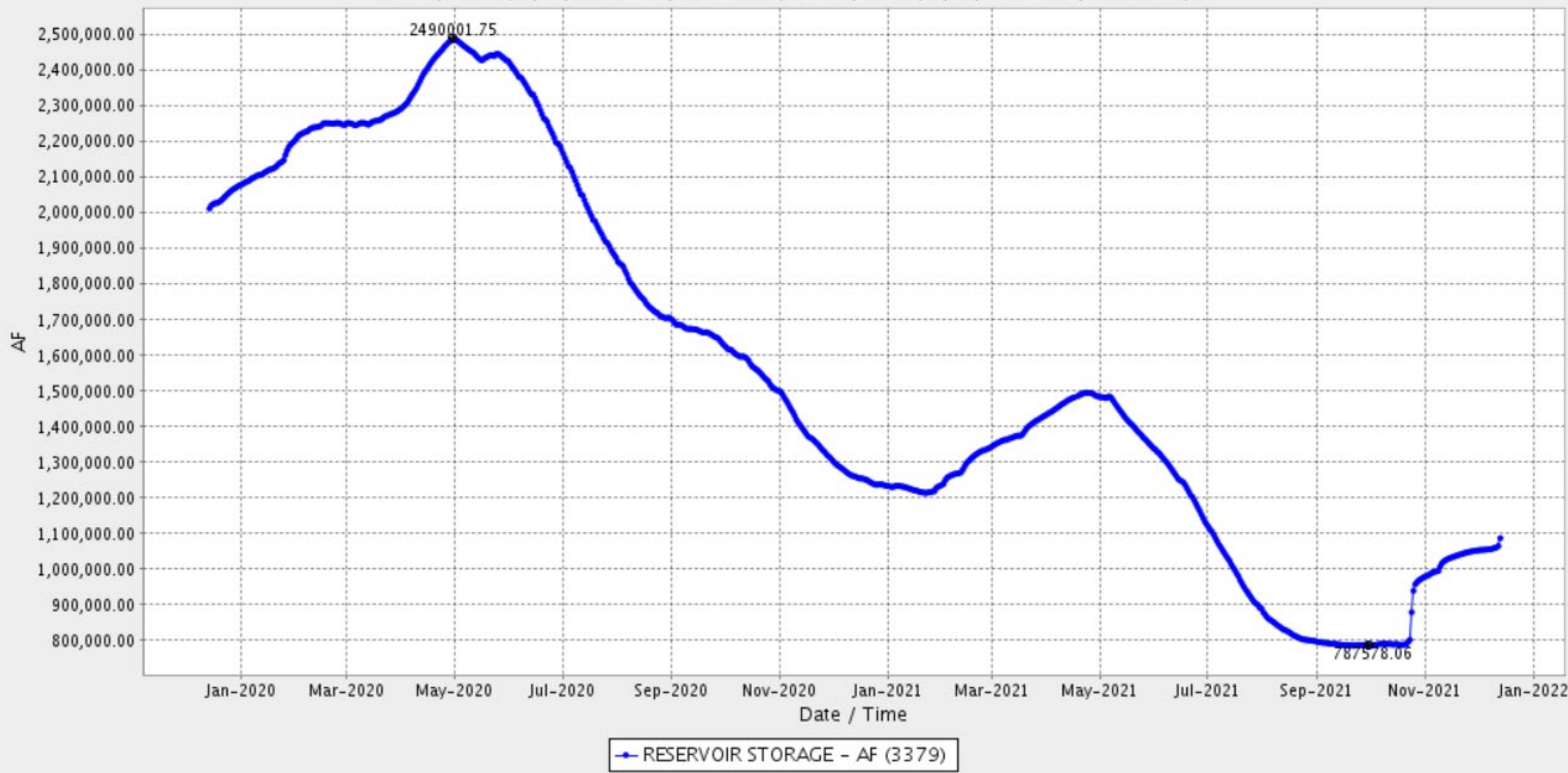
SHASTA DAM (USBR) (SHA)

Date from 12/14/2019 00:00 through 12/13/2021 00:00 Duration : 730 days
Max of period : (04/21/2020 00:00, 3750023.0) Min of period : (10/21/2021 00:00, 967370.0)



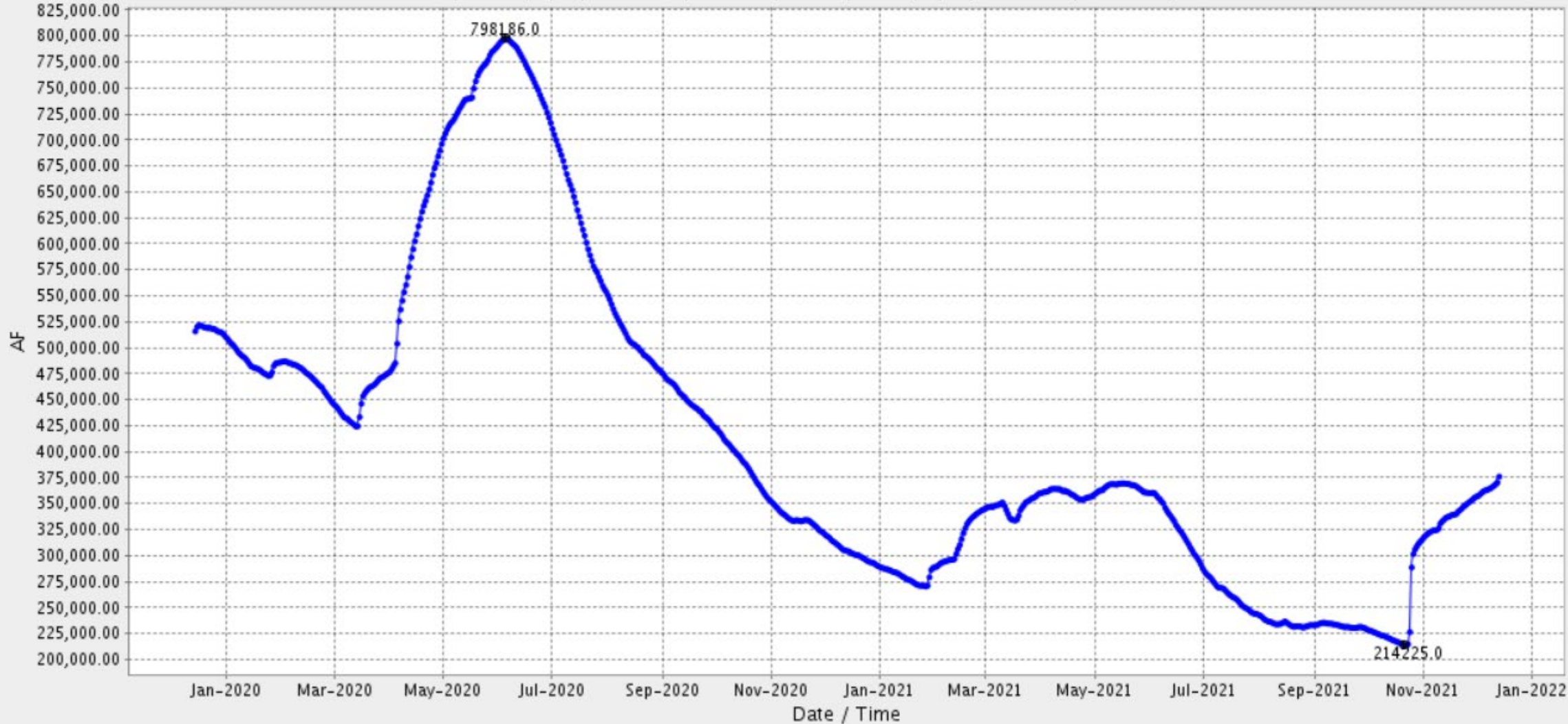
OROVILLE DAM (ORO)

Date from 12/14/2019 00:00 through 12/13/2021 00:00 Duration : 730 days
Max of period : (04/30/2020 00:00, 2490001.75) Min of period: (09/30/2021 00:00, 787578.06)



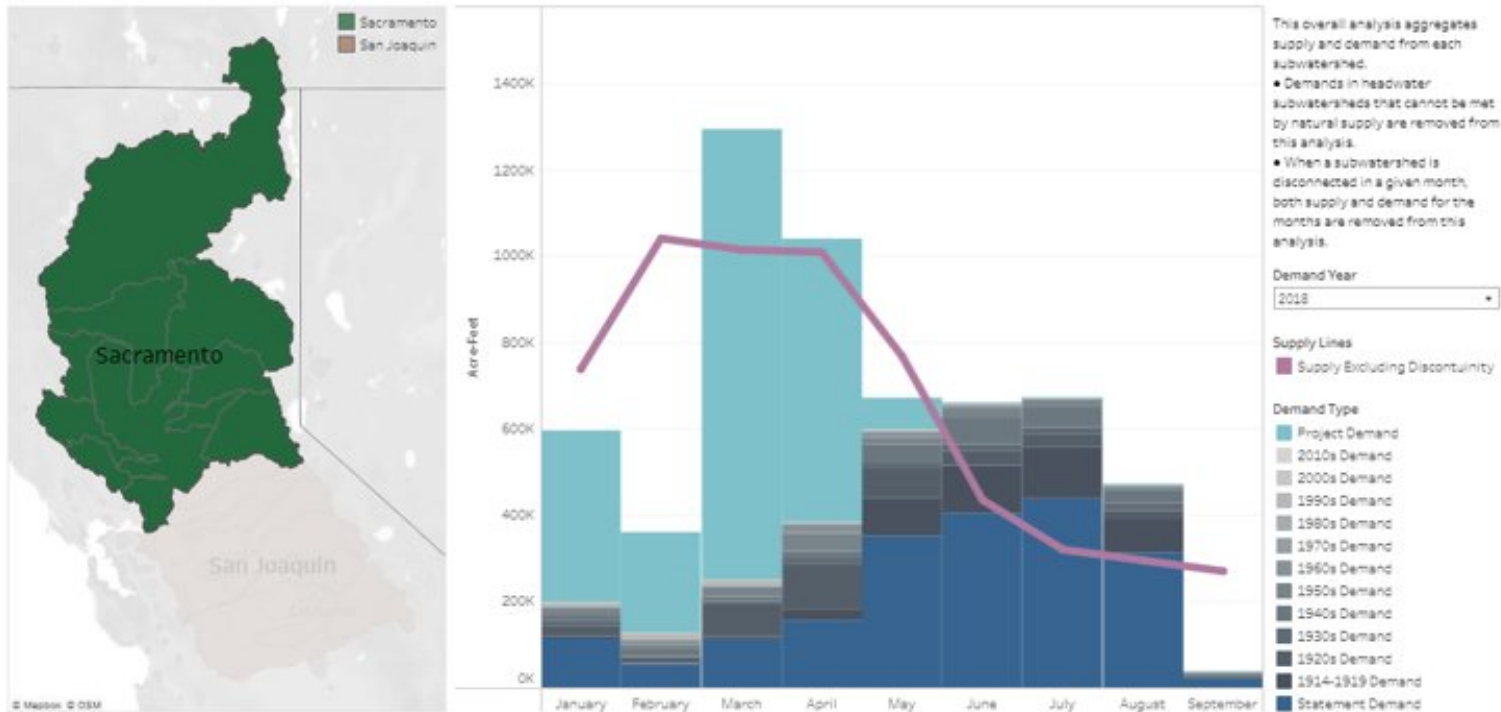
FOLSOM LAKE (FOL)

Date from 12/14/2019 00:00 through 12/13/2021 00:00 Duration : 730 days
Max of period : (06/05/2020 00:00, 798186.0) Min of period : (10/21/2021 00:00, 214225.0)



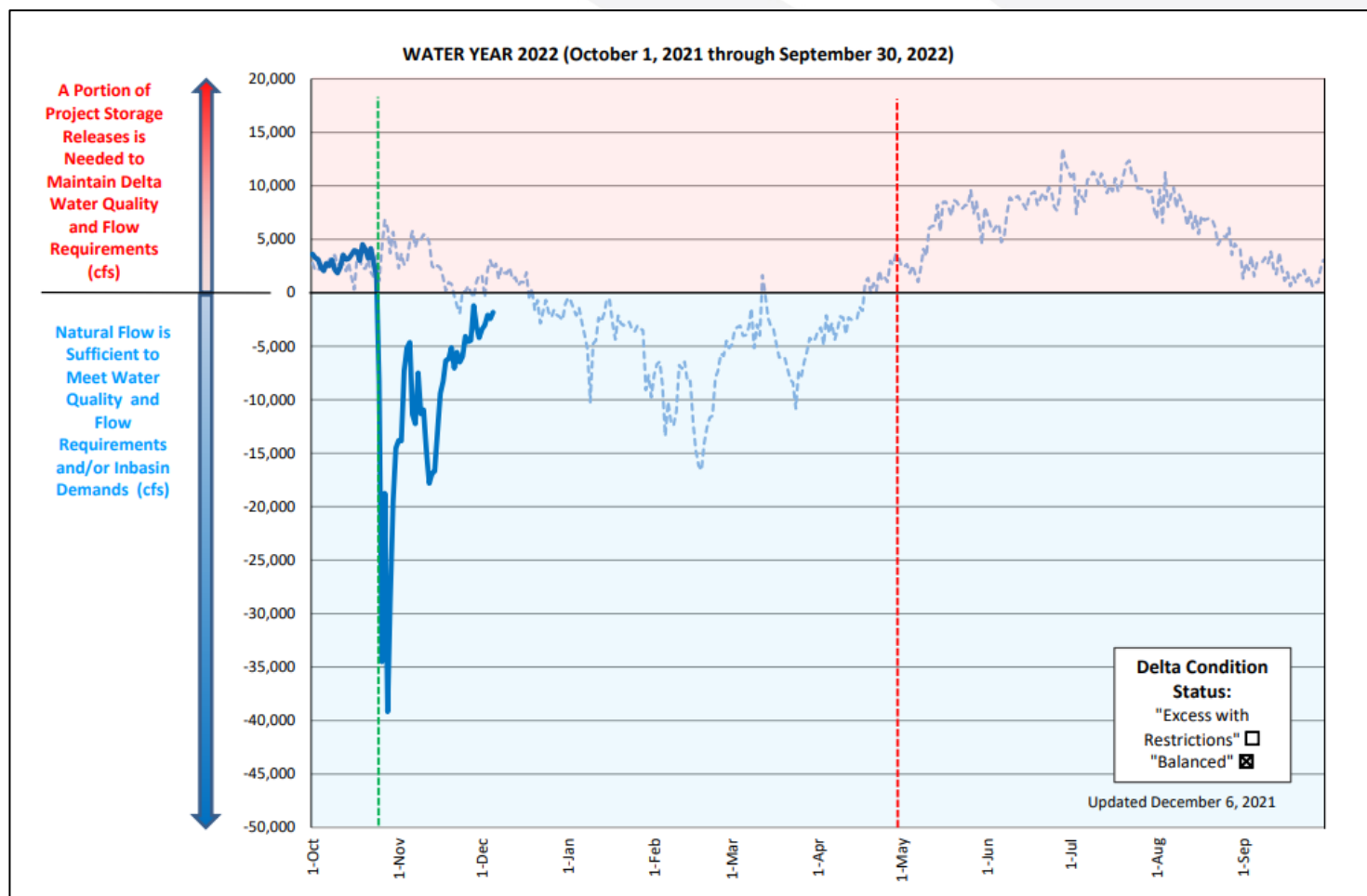
RESERVOIR STORAGE - AF (2726)

Existing Water Unavailability Methodology



- Based on comparison of historical reported diversions and forecast supply
- Operates at watershed and subwatershed scales
- Does not explicitly consider previously stored water

Term 91 – Supplemental Project Water



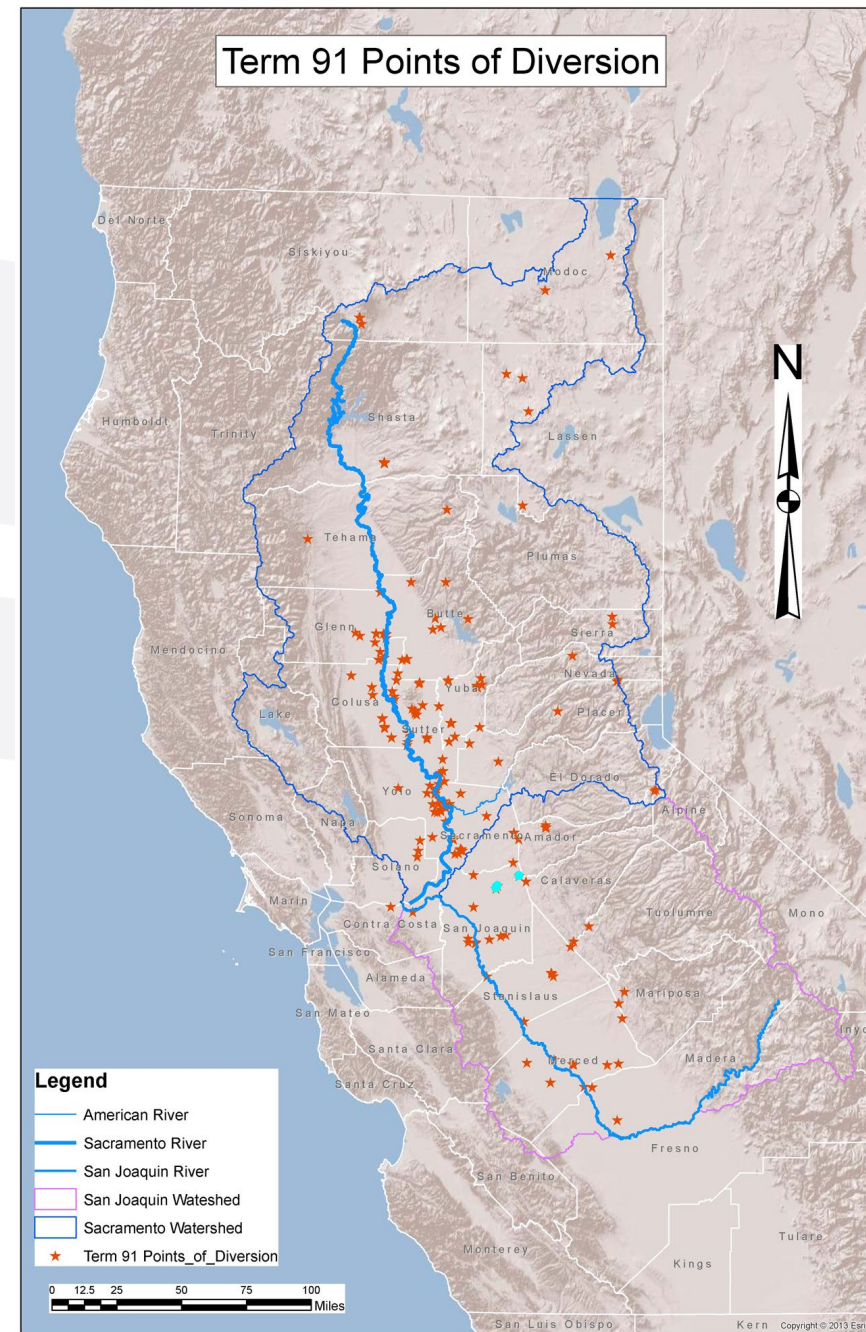
- Based on real-time data on Project storage releases and satisfaction of water quality standards in Delta
- Applies to small number of rights
- Operates at watershed scale

Differences of Term 91 Type Approach with Existing Methodology

- Focused on overall water unavailability at the Delta watershed scale and does not address water unavailability at the sub-watershed scale
- Designed to protect natural flow and abandoned flows from diversions that are needed to meet water quality and flow requirements
- Based on real time calculations from measured data
 - Not as reliant on reported water user demand data, projections of natural flows, or estimates of abandoned and return flows.

Standard Water Right Term 91

- Curtailment mechanism included in 115 junior water rights in the Delta watershed with ~1965 priority or later
- Implemented to ensure junior users do not divert when State Water Project (SWP)/Central Valley Project (CVP) (Projects) water is being released from storage to meet inbasin uses
- Invoked when water is being released by Projects to maintain Delta outflow/water quality requirements and other inbasin uses
 - This water is called **Supplemental Project Water** or **SPW**



Standard Term 91 (continued): Calculating SPW

Supplemental Project Water (SPW) is calculated with the following equation:

Stored Water Releases

- Exports
- Carriage Water

= Supplemental Project Water

Stored Water Releases

- Withdrawals from Shasta, Oroville and Folsom reservoirs, plus imports from the Trinity River

Exports

- Diversions into the California Aqueduct, the Delta-Mendota Canal, the Contra Costa Canal, and the North Bay Aqueduct

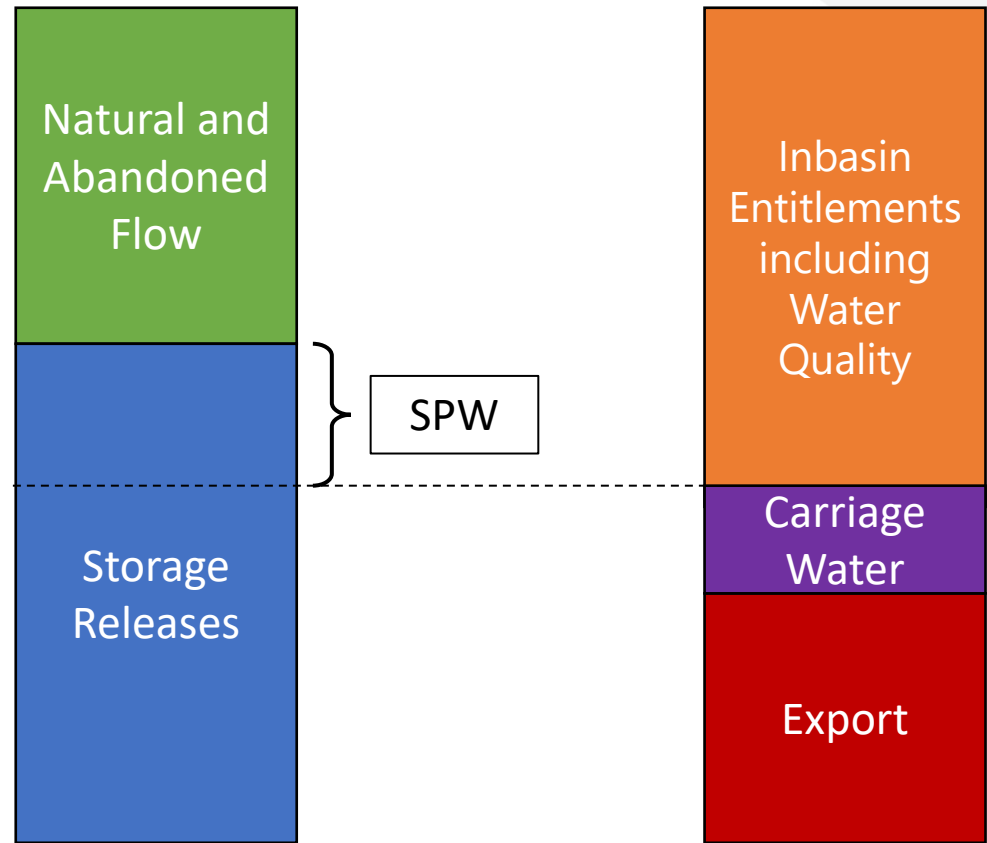
Carriage Water

- Flows that are required to repel seawater due to export pump operations

Standard Term 91 (continued): Delta Conditions

- When calculating SPW, Project staff also make a determination on the “condition” of the Delta
- Condition can be either
 - Balanced
 - Excess
- **Balanced**
 - Upstream releases (including SPW) and natural flows **equal** the water needed to meet inbasin uses, Delta water quality objectives, and exports
- **Excess**
 - Upstream releases and natural flows **exceed** the water needed to meet inbasin uses, Delta water quality objectives, and exports

Standard Term 91 (continued): Calculating SPW



Supplemental Project Water (SPW) is calculated with the following equation:

Stored Water Releases

- Exports
- Carriage Water

= Supplemental Project Water

Development of Term 91 Like Method

- The Term 91 method provides a framework for a curtailment methodology that could apply to a broader range of priorities, but would need to be modified to account for inbasin Project deliveries
- To account for the Projects' obligation to serve their inbasin contracts with stored water, another term needs to be added to the existing Term 91 equation to deduct inbasin obligations (IO) from the SPW calculation

Alternative Method New SPW Calculation

Stored Water Releases

- Exports
- Carriage Water
- **Inbasin Obligations**

= Supplemental Project Water

Inbasin Obligations

- Delivery water diverted under Project water rights to settlement and service contractors.

Inbasin Obligation Term

- Deliveries of Project water under SWP and CVP water rights to their contractors
 - These deliveries are separate from water that a Settlement Contractor diverts under their own rights
- Service Contractors
 - No underlying right to divert
- Settlement Contractors
 - Have underlying water right
 - Receive supplemental Project water when water is not available under their right

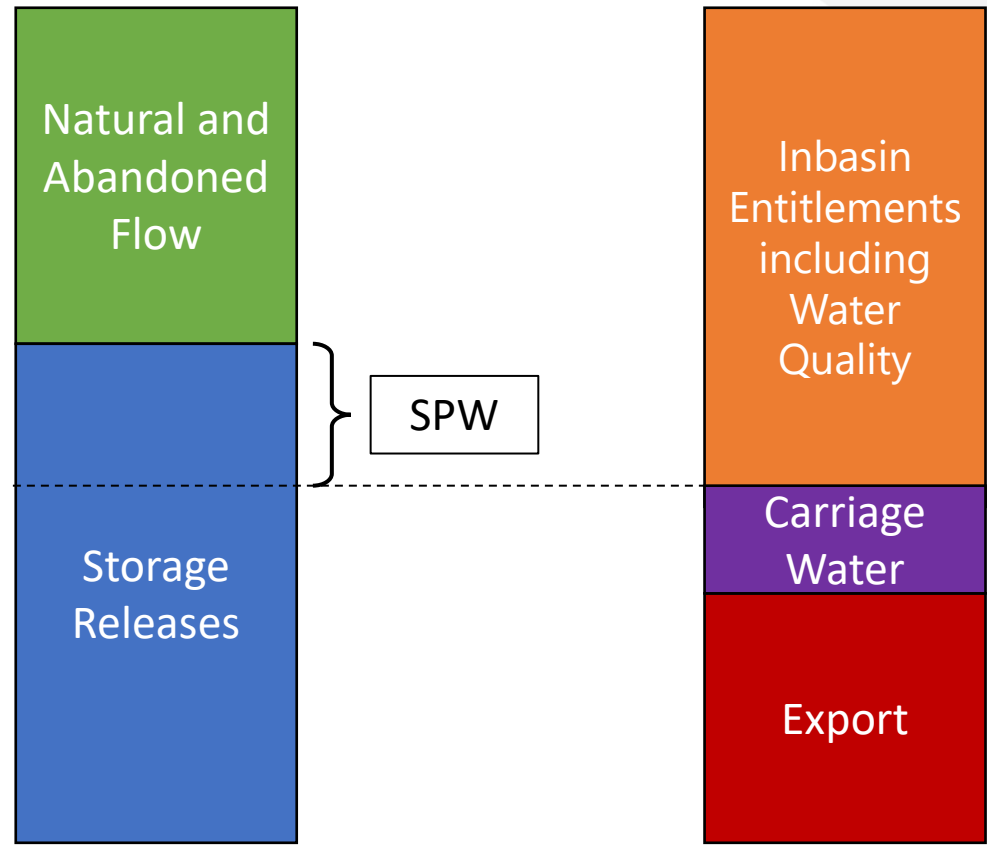
Standard Term 91 (review): Calculating SPW

Supplemental Project Water (SPW) is calculated with the following equation:

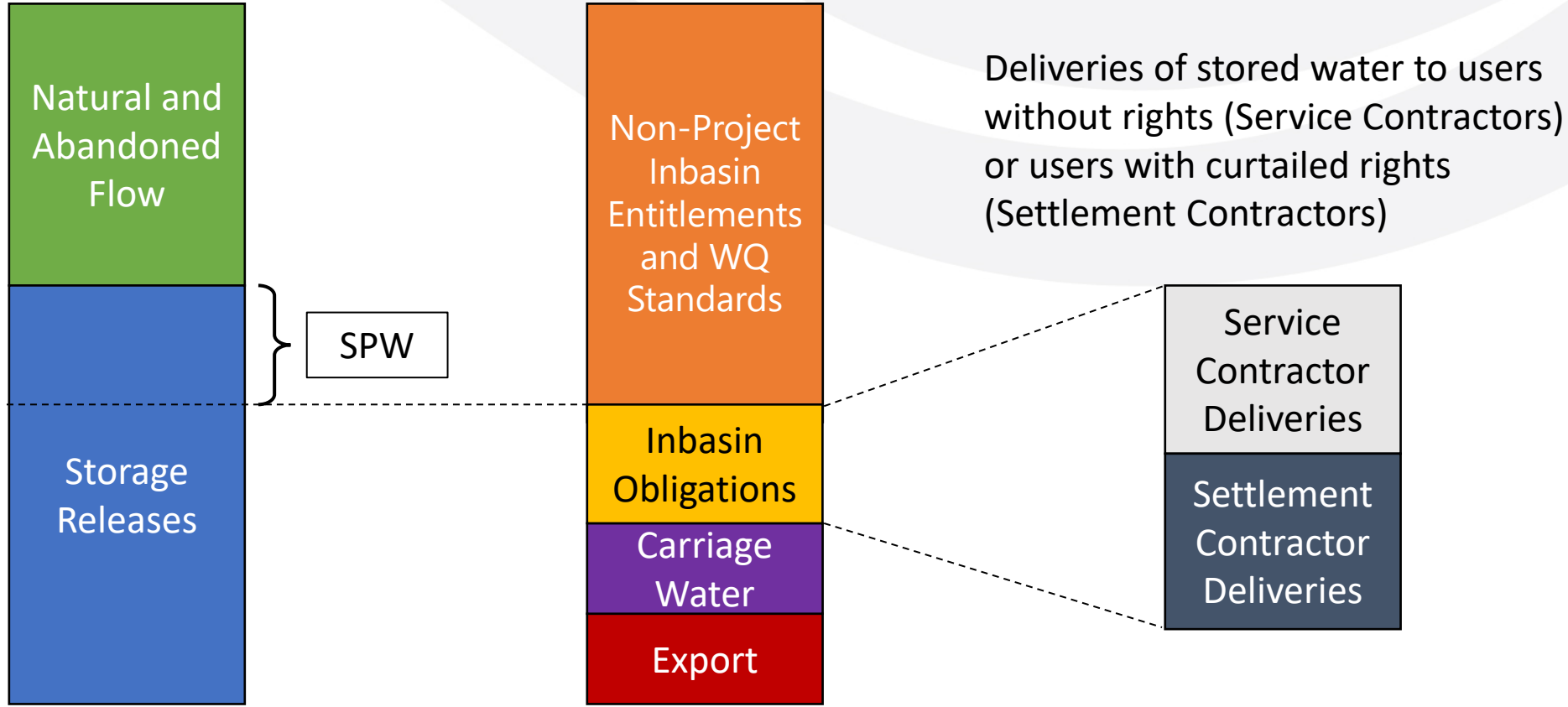
Stored Water Releases

- Exports
- Carriage Water

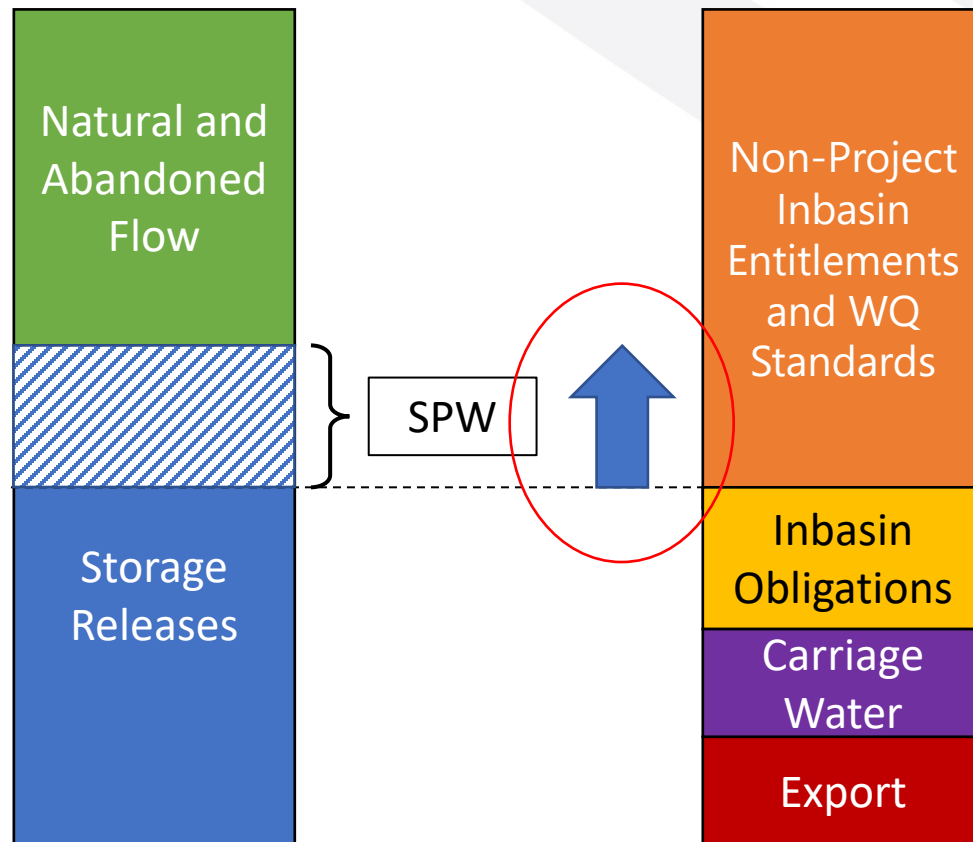
= Supplemental Project Water



Alternative Term 91: Calculating Supplemental Project Water (SPW) with Inbasin Obligations



Alternative Term 91: Calculating Supplemental Project Water (SPW) with Inbasin Obligations



For contractors **without** water rights, all deliveries are part of the IO term.

For contractors **with** water rights, only deliveries of Project Water are part of the IO term.

When direct diversions under the Projects' inbasin rights are curtailed, and as direct diversions of contractors with rights senior to the projects are curtailed, the storage release obligations of the Projects increase to serve these contractors.

Potential Alternative Approaches

- Real-time data on deliveries of Project Water
 - Including deliveries to SWP Table A, CVP Service, and SWP and CVP settlement contractors
- Estimated Project Water Deliveries based on historical data
- Inbasin obligation data derived from other curtailment status
- Delta Outflow as a proxy for Inbasin Obligation term

Data Sources

- Depletions between stream gages – Near Real Time
- Reported diversions from contractors – Time-lagged after delivery period
- Projects receive demand schedules – Monthly
- Projects complete end-of-year accounting – After end of contract year

Feasibility of Real-time Data

- Real-time data is not expected to be available in the near term for all inbasin Project deliveries
 - Some diversions to State Water Project settlement contractors would be available in near real-time
 - Real time data on Central Valley Project settlement contractors not expected to be available

Potential Alternative Approaches

- Real-time data on deliveries of Project Water
 - Including deliveries to SWP Table A, CVP Service, and SWP and CVP settlement contractors
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- Delta Outflow as a proxy for Inbasin Obligation term

Public Presentations

- **Central Delta Water Agency**
 - Brett Baker
 - Dante Nomellini, Sr.
- **South Delta Water Agency**
 - Thomas Burke
 - Dean Ruiz
 - John Herrick

Public Comments

- David Guy (Northern California Water Association) & Darren Cordova (MBK Engineers)
- Thomas Berliner – Duane Morris LLP on behalf of Merced Irrigation District
- Jeanne Zolezzi – Herum Crabtree Suntag
- Danny Merkley – California Farm Bureau
- Susan Paulsen – Exponent on behalf of Byron-Bethany Irrigation District
- Gerald Johns
- Tim Wasiewski – San Joaquin Tributaries Authority
- Paul Hutton – Tetra Tech on behalf of the State Water Contractors
- Dan Nomellini, Jr. – Central Delta Water Agency
- Will Anderson – Contra Costa Water District
- Jennifer Spaletta – Spaletta Law PC
- Chris Scheuring – California Farm Bureau
- Justin Fredrickson – California Farm Bureau
- Nick Bonsignore – Wagner & Bonsignore Consulting Civil Engineers

Contact and Resources

Email: Bay-Delta@waterboards.ca.gov

Delta Drought Phone Line:

Call (916) 319-0960 and leave a message and staff will return your call as soon as possible

Webpages:

Delta Drought Webpage:
waterboards.ca.gov/drought/delta/

Water Unavailability Methodology Webpage:
waterboards.ca.gov/drought/drought_tools_methods/delta_method.html

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