

Working Meetings on Draft Sacramento/Delta Updates to Bay-Delta Plan

Working Meeting #5: Methodology to
Determine Water Unavailability and
Implement Bay-Delta Plan



February 4, 2025

Attendees

Welcome to Today's Meeting

- Facilitator
 - Meagan Wylie, Zephyr Collaboration
- Presenters
 - Diane Riddle and Jesse Jankowski, Division of Water Rights
- Additional Board staff from the Division of Water Rights and Office of Chief Counsel providing support
- One or two Board members may attend this and other meetings to observe but are not otherwise planning to participate or provide input

Reminders

Format

- 2-hour staff-led virtual meeting
- Staff will present key questions (provided in advance) and slides relevant to today's topic to guide discussion
- Focus only on the major provisions relevant to today's topic
- Participants must raise hand by using hand icon in Zoom or dialing *6 on phone if calling in and wait to speak until you are called upon

Participation Guidelines

- Use appropriate and respectful dialogue
- Stay on topic
- Share speaking time considerately
- Be as concise and specific as possible
- Be open to listening to and understanding different perspectives
- Review relevant sections of draft plan in advance
- Designate point person to speak on group's behalf, if possible
- Provide constructive input
- Avoid general comments

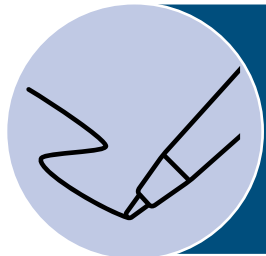
Purpose of Today's Meeting



Discuss methodology to determine water unavailability in conformance with water rights priorities program of implementation provisions in the October 2024 draft Bay-Delta Plan* updates



Hear constructive input on whether and what changes should be made to specific provisions and concepts, if any



Share input with Board to inform development of revised draft Bay-Delta Plan for additional public review and comment

**Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Watershed*

Provisions to be Discussed Today

- Methodology to determine water unavailability in conformance with water rights priorities
 - Implementation Methodology
- Development and timeline for Implementation Methodology
- Overview of past and current efforts related to the Implementation Methodology

Guiding Questions

- 1) What, if any, modifications should the Board consider to the provisions for developing, reviewing, and updating the implementation methodology to determine water unavailability in conformance with water right priorities in order to implement the Bay-Delta Plan, including in the following instances (pp. 64-65):
 - i. Water is not available at water right priorities regardless of instream flow requirements. These curtailments would apply to all water rights, including for water rights that may be part of an approved voluntary agreement, unless an approved exception to curtailment applies.
 - ii. Water is not available based on water right priorities due to responsibility for meeting the tributary inflow and the inflow-based Delta outflow objectives. These curtailments would not apply to water rights part of an approved voluntary agreement.
- 2) What, if any, modifications should the Board consider to the relevant information that will be considered in determining when water is unavailable (p. 65)?
- 3) What, if any, modifications should the Board consider to the timeline to develop the implementation methodology and associated curtailment regulations (pp. 64-65)?
- 4) Is there additional information the Board should include in the Bay-Delta Plan related to the implementation methodology and curtailment regulation?
- 5) What, if any, other specific methods should the Board consider to implement the Bay-Delta Plan, including possible regulatory and voluntary agreement (VA) provisions, consistent with water right priorities?

Water Right Curtailments

- To implement the Sacramento/Delta updates to the Bay-Delta Plan, as necessary the State Water Board will issue water right curtailments based on water right priorities for appropriative rights and pre-1914 and riparian claims of right, including adjudicated rights, when it is determined that:
 - Water is not available at water right priorities regardless of instream flow requirements. These curtailments would apply to all water rights, including for water rights that may be part of an approved voluntary agreement, unless an approved exception to curtailment applies.
 - Water is not available based on water right priorities due to responsibility for meeting the tributary inflow and the inflow-based Delta outflow objectives. These curtailments would not apply to water rights part of an approved voluntary agreement.

Implementation Methodology

- In order to inform curtailments, the State Water Board will develop an implementation methodology to determine when water is not available at water right holders' priorities of right.
- This methodology will be developed through a public process within one year of adoption of the Sacramento/Delta updates to the Bay-Delta Plan.
- The implementation methodology is intended to be integrated with the methodology to implement Lower San Joaquin River Instream Flows, to the extent possible.
- As appropriate based on improved data or methods, the implementation methodology will be subject to regular review and update, including opportunity for public review and comment.

Information Considered in Determining Water Unavailability

- In determining whether water is unavailable, the State Water Board will consider relevant available information regarding:
 - unimpaired flows, including natural accretions, for determining unimpaired flow requirements and natural flows available for diversion;
 - other flows available for diversion, including return flows from agricultural and municipal water uses;
 - depletions from factors other than surface water diversions, including seepage, evaporation and transpiration from open water as well as riparian and floodplain vegetation that reduce flows available for all purposes;
 - information related to water right priority dates;
 - water right demands and diversions, including actual and projected consumptive use demands for and diversions of water and changes in the timing of flows from non-consumptive demands;
 - travel times for flows;
 - and other relevant information

Implementation Methodology Timeline

- Within two years of adoption of the Sacramento/Delta updates to the Bay-Delta Plan, the State Water Board will adopt regulations that will give force and effect to the Bay-Delta Plan, including curtailments in order of water right priority using the implementation methodology.
- The regulation may include additional monitoring and reporting of diversions and related information needed to inform curtailment decisions.

Efforts to Develop Implementation Methodology

- Staff is concurrently working on draft Implementation Methodology for public review later this year
- Draft Implementation Methodology will build on past efforts with significant refinements developed through a public process
- Ongoing public process to incorporate refinements over time with improved data and tools

Past and Current Efforts Related to Implementation Methodology

- Staff has developed several water unavailability tools to date
 - Water Unavailability Methodology Excel spreadsheet used to inform curtailments during the 2021/2022 drought
 - 2023 updates to the Water Unavailability Methodology in Python
 - Water Availability Analysis Methodology used to inform findings for water right applications, including incorporation of unimpaired flow analyses
 - Exploratory versions of the methodology under development to inform Bay-Delta Plan processes, including incorporation of unimpaired flow analyses and other possible regulatory provisions
- Work underway on further refinements using prior framework to develop Implementation Methodology for the Bay-Delta Plan

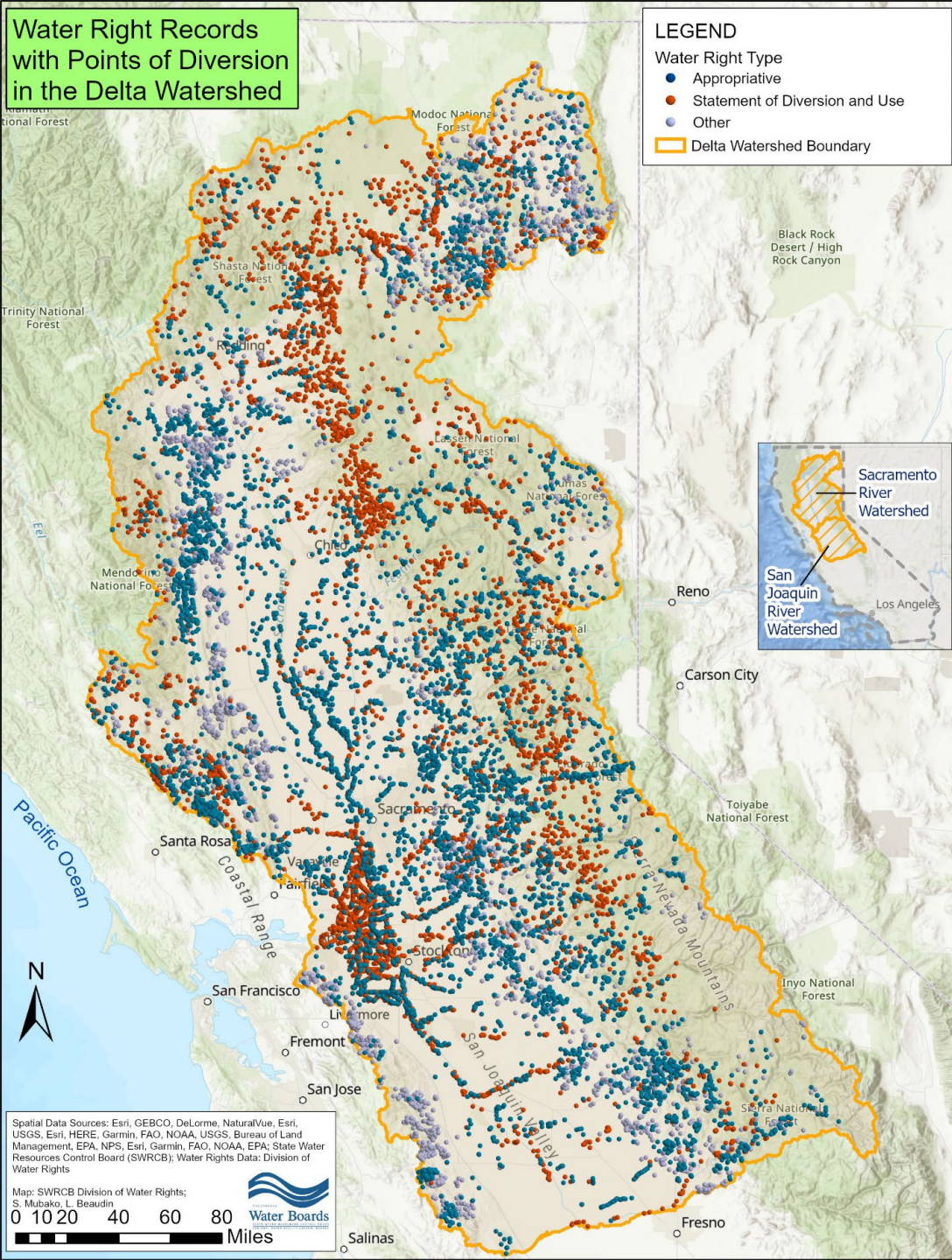
Delta Watershed Location



Water Supply

- Delineated major tributaries as subwatersheds
 - Subwatersheds will be further delineated
- Unimpaired flows (UF) represent “natural flow” available for diversion under water rights
 - Historical data and forecasts
 - Account for abandoned flows

Water Right Records with Points of Diversion in the Delta Watershed



Water Demand

- ~17,000 water rights and claims diverting from ~20,000 individual points of diversion in the watershed
 - Each has an associated priority date
 - Delta diversions treated uniquely
- Refinements to demand estimates planned as part of Implementation Methodology
 - Direct diversions
 - Water storage

Methodology Concepts

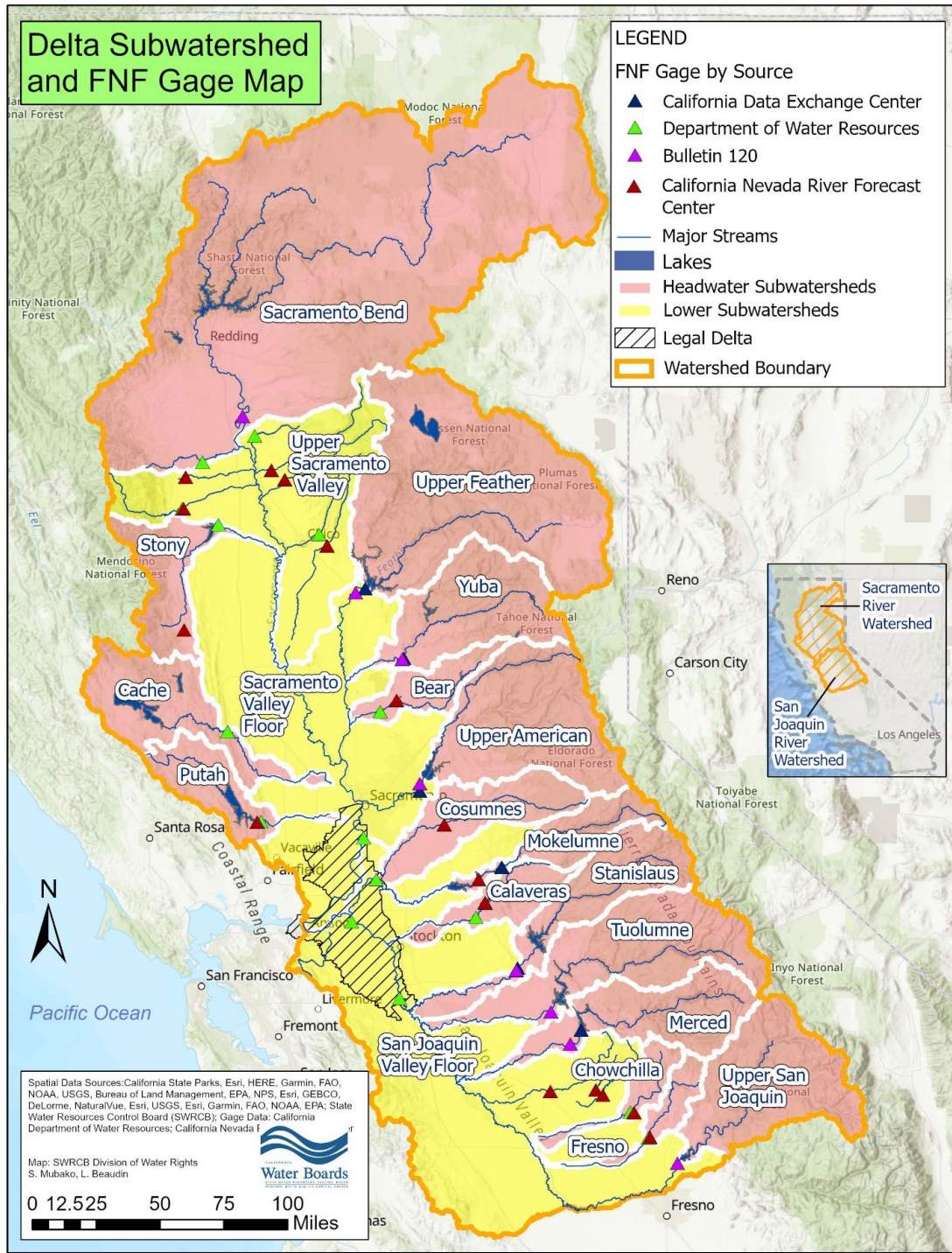
- Determine unimpaired flow levels for all locations where unimpaired flows would be required under Bay-Delta Plan
 - Extrapolate for ungaged basins and downstream locations
 - Augment tributary flows to account for valley floor accretions
- Determine demands for direct diversions and storage
- Aggregate demand and natural depletions by subwatershed and compare to supply
- Account for transit time and period of availability in the Delta
- Percent unimpaired flow requirements and VA flows would be unavailable for diversion

Delta Subwatershed and FNF Gage Map

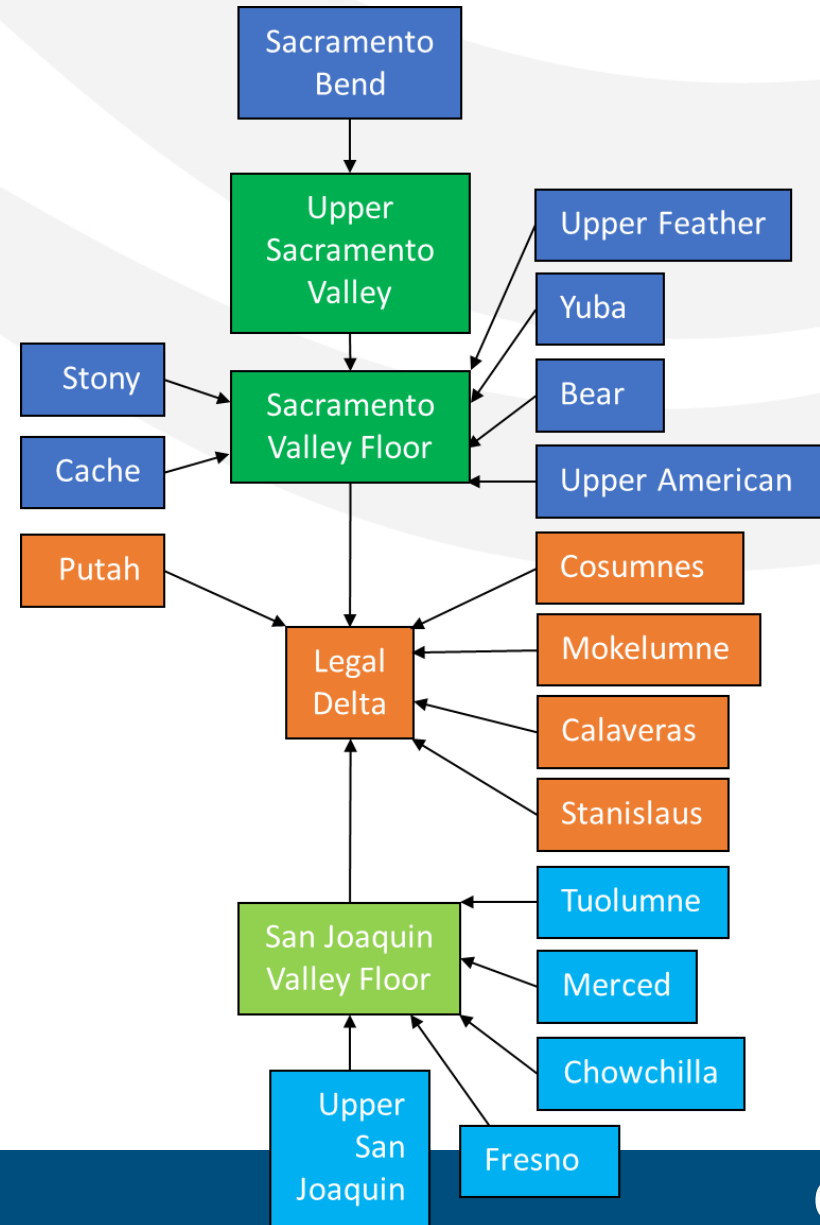
LEGEND

FNF Gage by Source

- ▲ California Data Exchange Center
- ▲ Department of Water Resources
- ▲ Bulletin 120
- ▲ California Nevada River Forecast Center
- Major Streams
- Lakes
- Headwater Subwatersheds
- Lower Subwatersheds
- ▨ Legal Delta
- ▭ Watershed Boundary

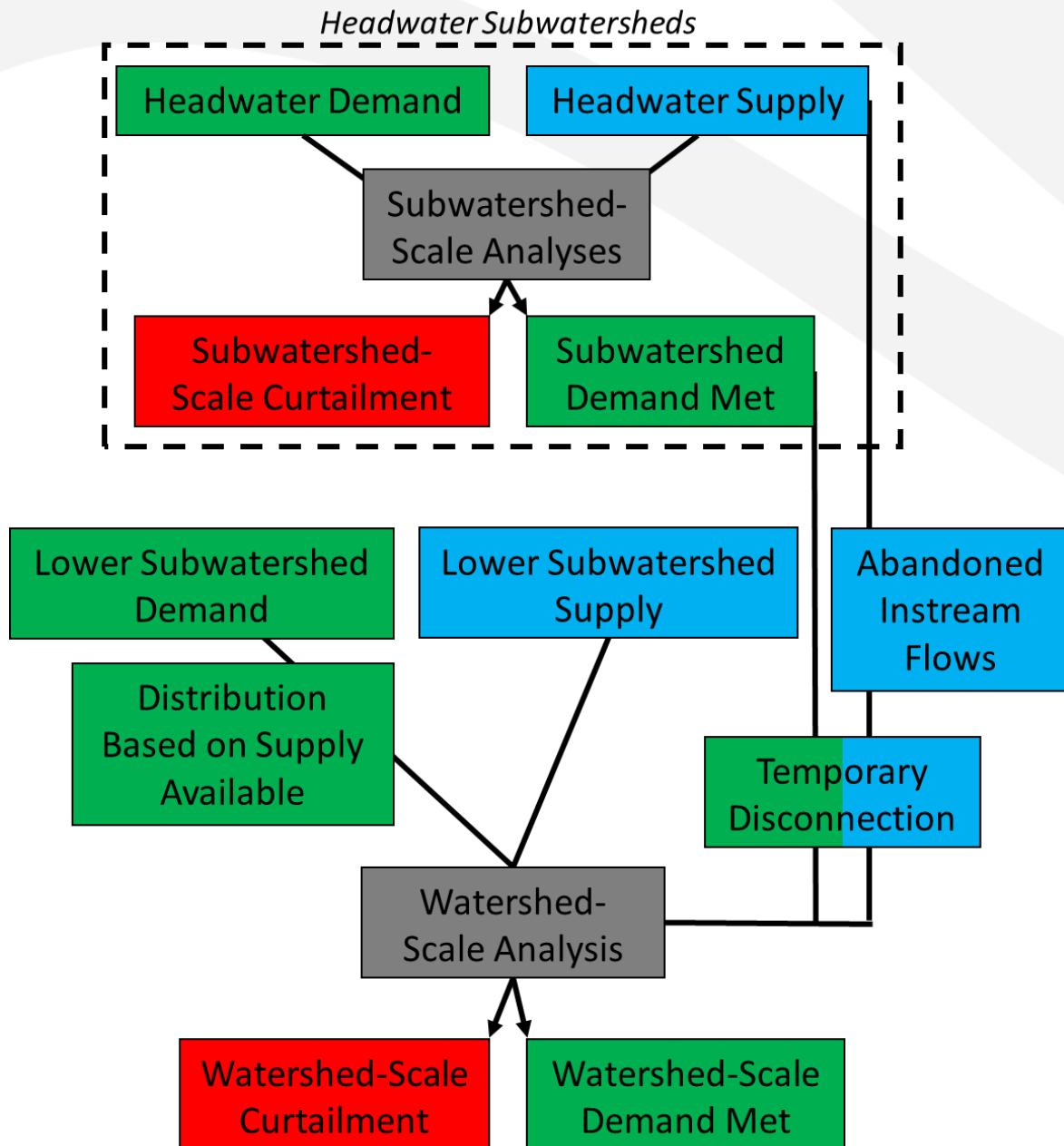


Drought Methodology Concepts

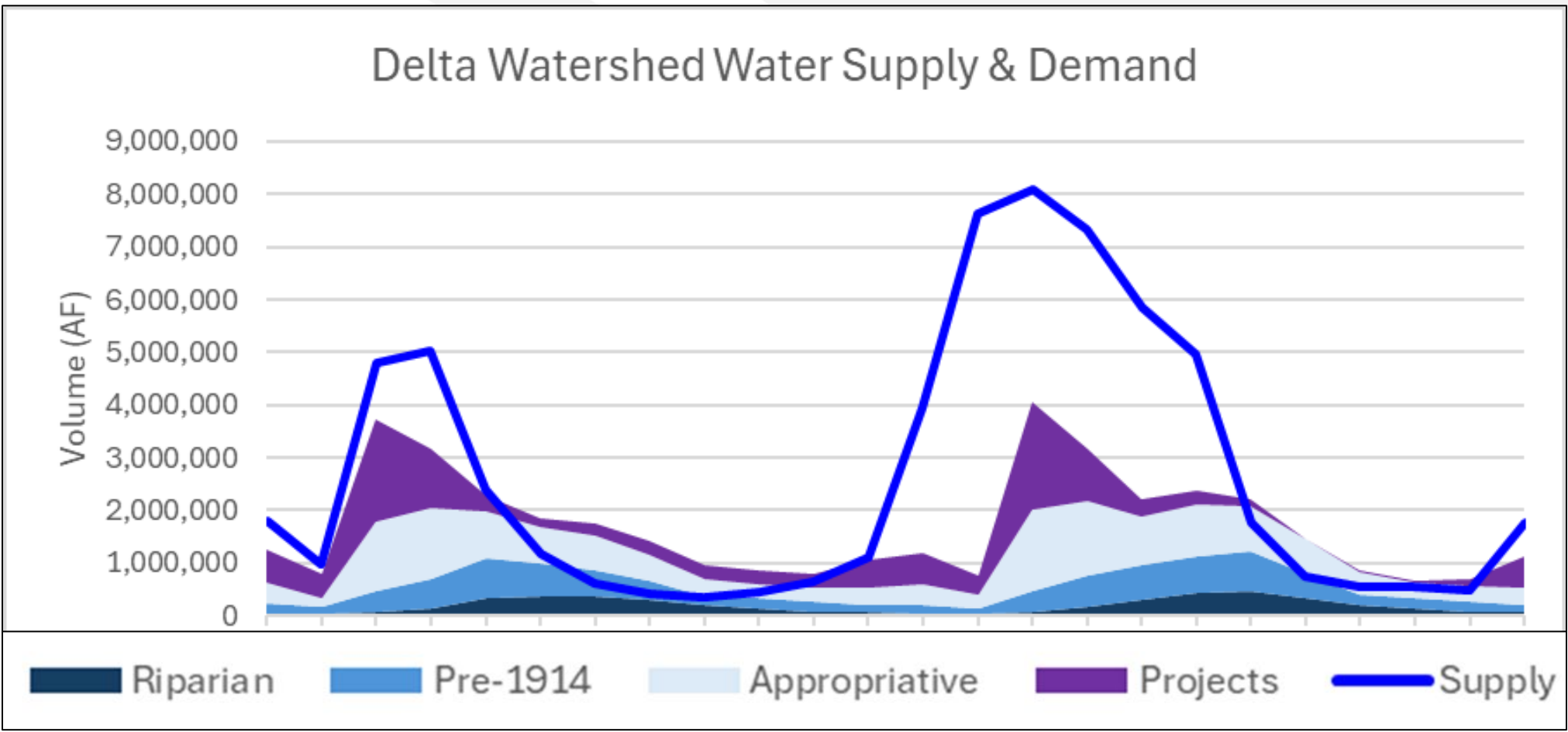


Analysis Approach

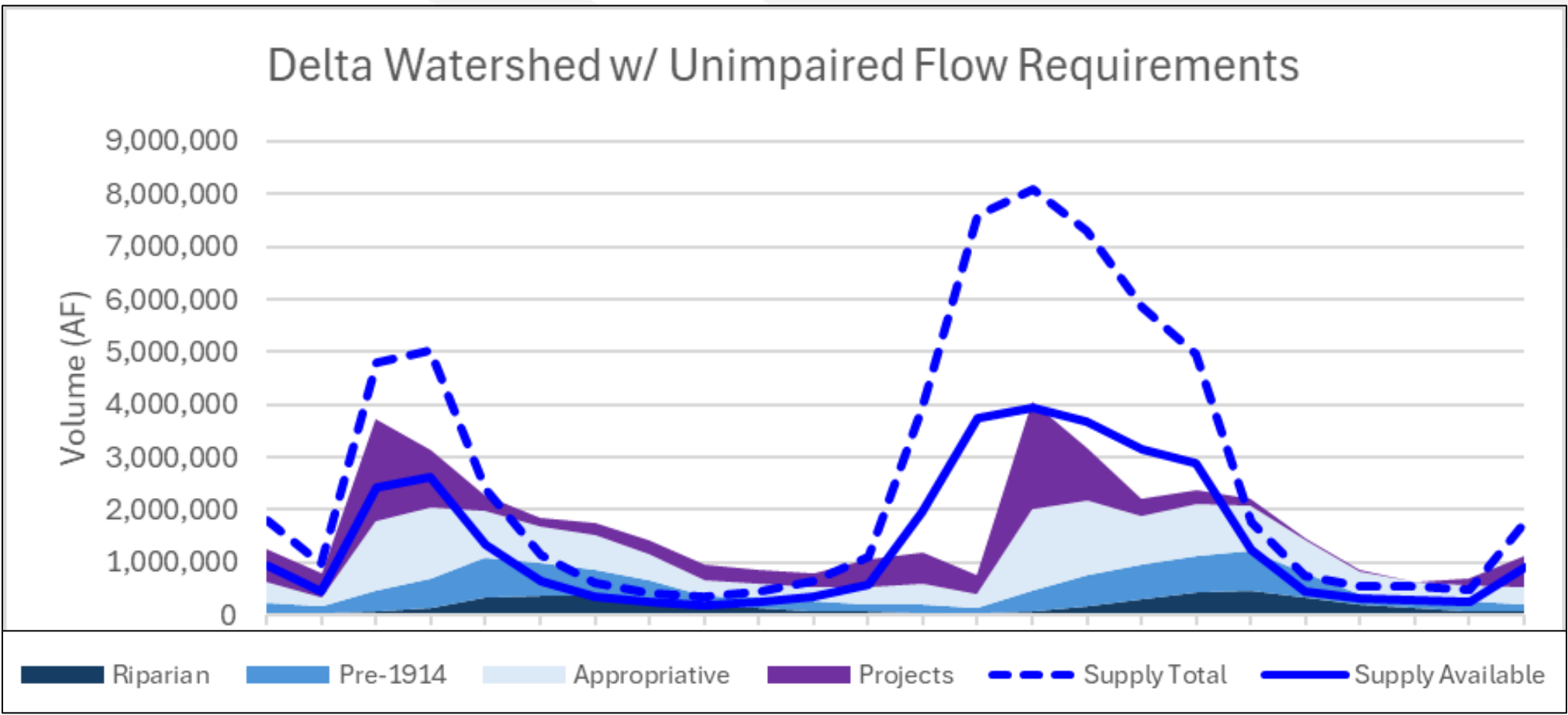
- Allocate available water supply to water right demands in order of priority date
- Headwater subwatershed-scale analyses
 - Eliminate demands not met by local supply
- Watershed-scale analysis accounts for tributary and Delta connectivity
 - Valley floors have access to local flows and upstream tributaries
 - Legal Delta diversions have access to supply from all subwatersheds



Example Water Unavailability Analysis



Water Unavailability (w/ UF Requirements)



Refinements Under Development

- Water supply and flow scenario analysis
- Real-time storage demands
- Direct diversion demand refinements
- Improve estimates of return flows
- Further disaggregation of subwatersheds
- Analysis timestep and transit lag refinements
- Delta supply and demand refinements
- Results visualization and communication



Guiding Questions

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Next Meeting

Jan. 28	<i>Inflow Objective and Program of Implementation</i>	Feb. 13	<i>Provisions for Continuation, Modification, or Termination of VAs*</i>
Jan. 29	<i>Cold Water Habitat Objective and Program of Implementation</i>	Feb. 19	<i>VA* Habitat Commitments and Accounting Provisions</i>
Jan. 30	<i>Inflow-Based Delta Outflow Objective and Program of Implementation</i>	Feb. 20	<i>Monitoring and Evaluation for VA* Provisions</i>
Feb. 4	<i>Methodology to Determine Water Unavailability and Implement Bay-Delta Plan</i>	Feb. 27	<i>VA* Flow Commitments and Accounting</i>
Feb. 5	Monitoring and Evaluation for Regulatory Provisions	Mar. 4	<i>Tribal Provisions</i>




Register via links provided in January 3 letter:

www.waterboards.ca.gov/bay_delta/docs/2025/ltr-baydeltaplan-workmtgs.pdf

**Voluntary Agreements, also referred to as the Healthy Rivers and Landscapes Proposal*

Resources and Contact Information

- Sacramento/Delta Update to Bay-Delta Plan: waterboards.ca.gov/bay_delta/comp_review.html
- Proposed VAs: waterboards.ca.gov/bay_delta/proposed_voluntary_agreements.html
- Bay-Delta Watershed: waterboards.ca.gov/bay_delta/
- Email: SacDeltaComments@waterboards.ca.gov

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