Update on Flow Related Efforts in the Scott River and Shasta River Watersheds

Agenda Item No. 5
November 4, 2025, Board Meeting

CALIFORNIA
Water Boards

Division of Water Rights

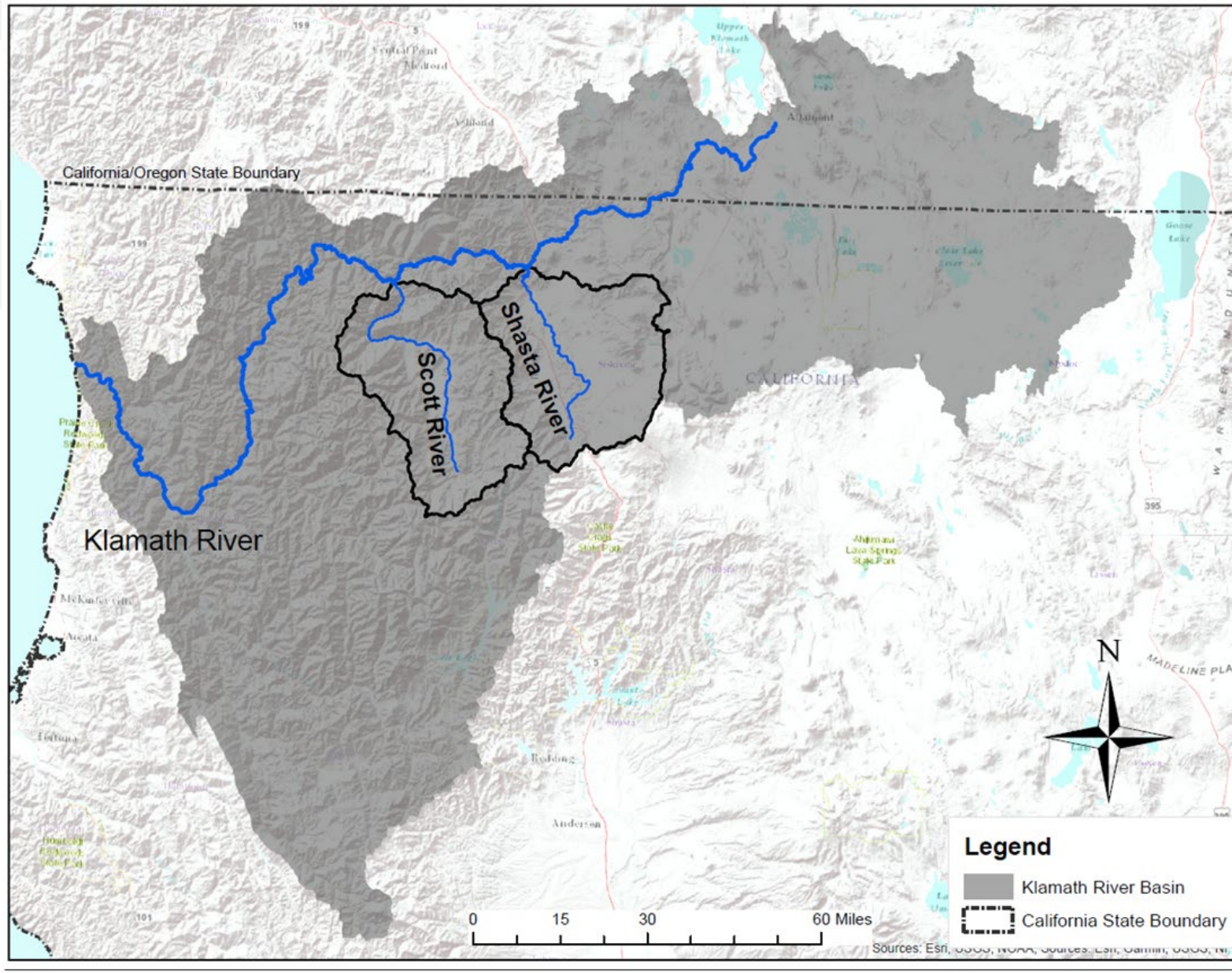
Today's Item

Presentations by:

- Board staff
- CDFW staff
- Farm Bureau

Board Staff Presentation:

- Background
- Year in review
- Long-term efforts
- AB 263
- Written Comments



Background

Resolution No. 2024-0036 (October 16, 2024):

- Explore potential readoption of emergency regulation or alternatives – January 2025
- Pursue scientific basis and economic analysis for baseline minimum flows and continue work on models and related information collection, and come back by November 2025 – here today

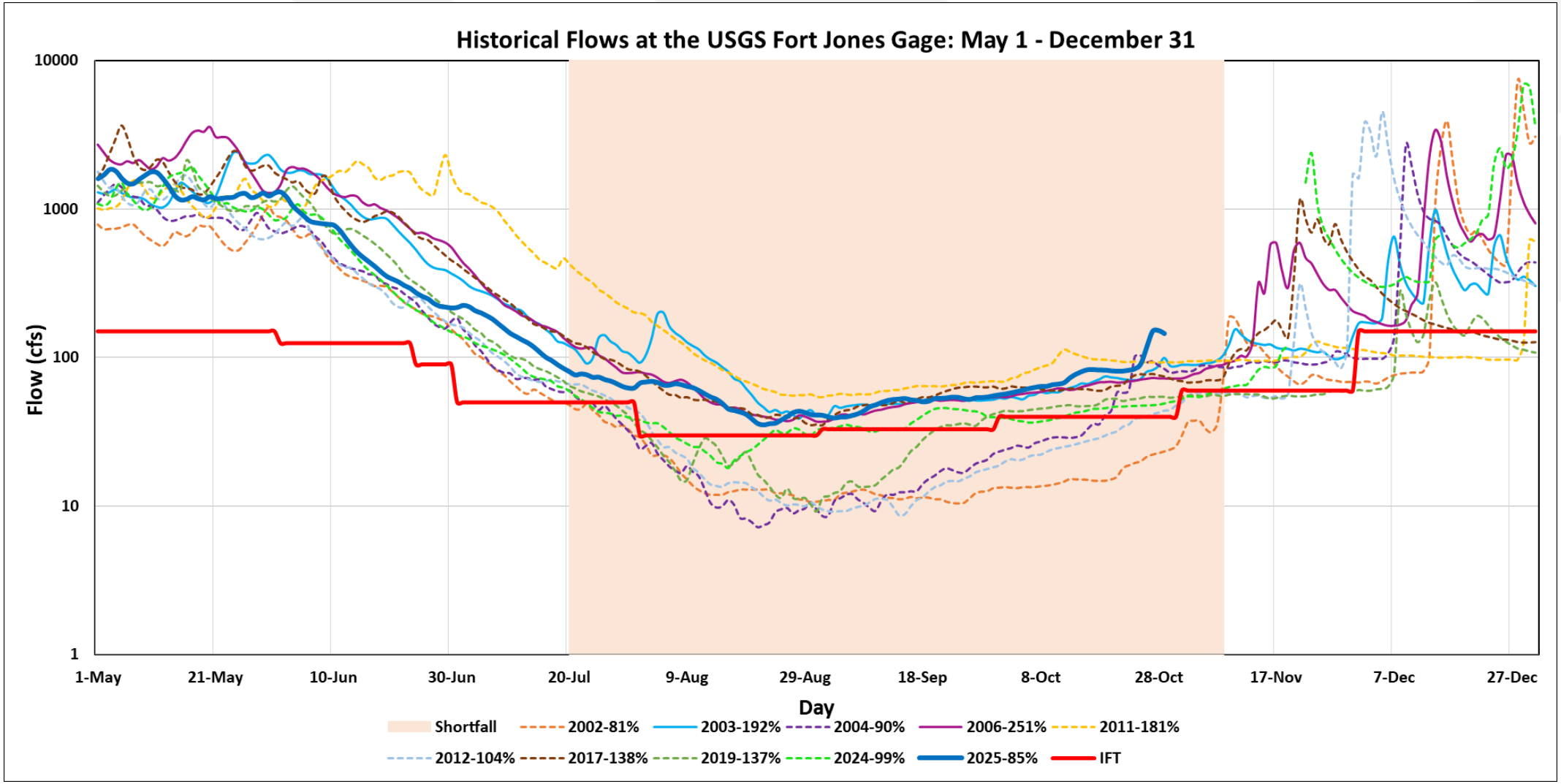
Watershed Conditions + Regulation Implementation in 2025

- Highlights for each watershed
- Review conditions for recent water year

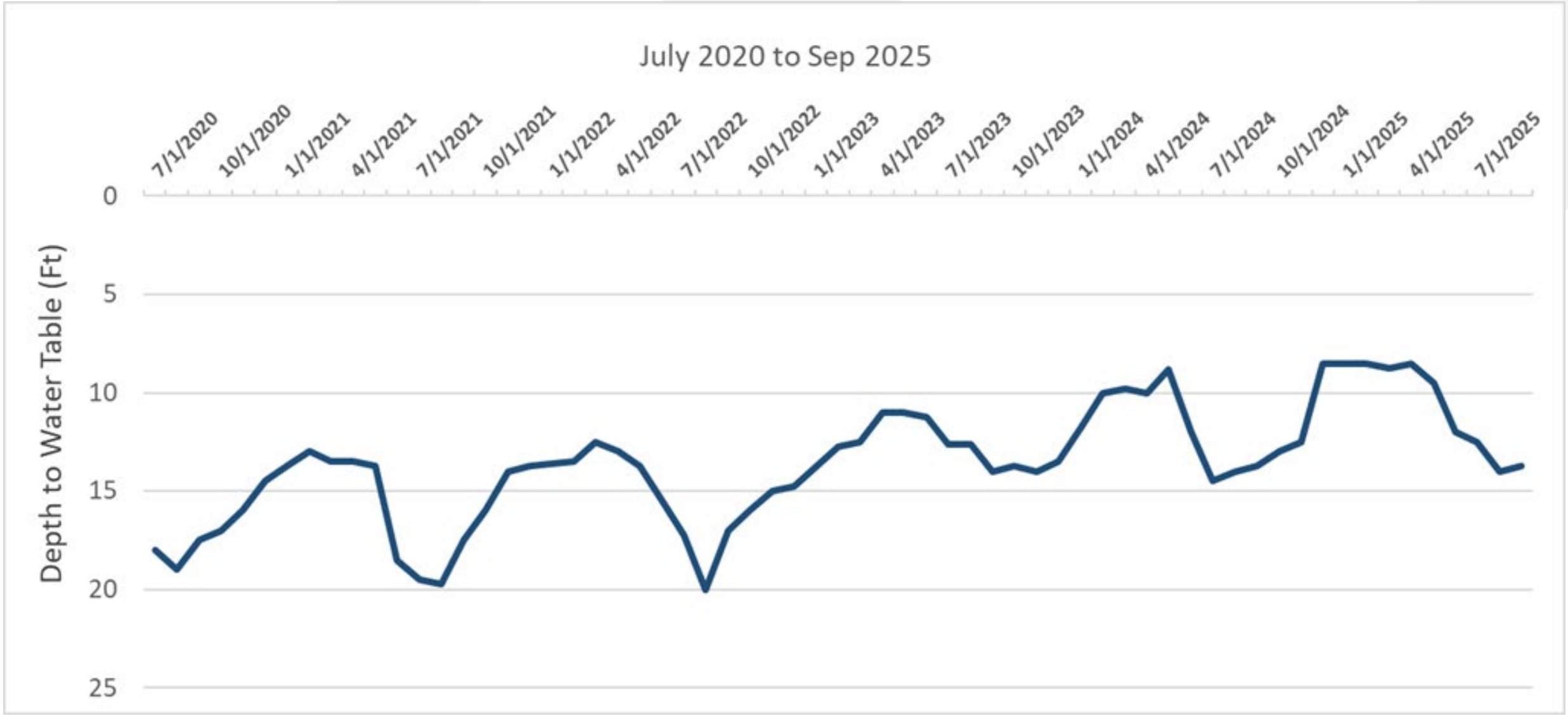
Scott River: 2025 Highlights

- Emergency regulation flows met throughout irrigation season
  - Brief curtailment in July due to gage error that was quickly corrected; Watermaster action key
- Flows remained higher compared to years with similar snowpack conditions (May 2025 snowpack was 85% of average)
  - Higher flows attributed to multiple factors, including higher groundwater levels, reduced groundwater pumping through groundwater local cooperative solutions, grants for fallowed land, and groundwater recharge projects
- Highest groundwater levels for recent years and based on available groundwater data (since 2020)

Scott River: Historical and Current Flows



Scott Valley Groundwater Levels (2020-2025)

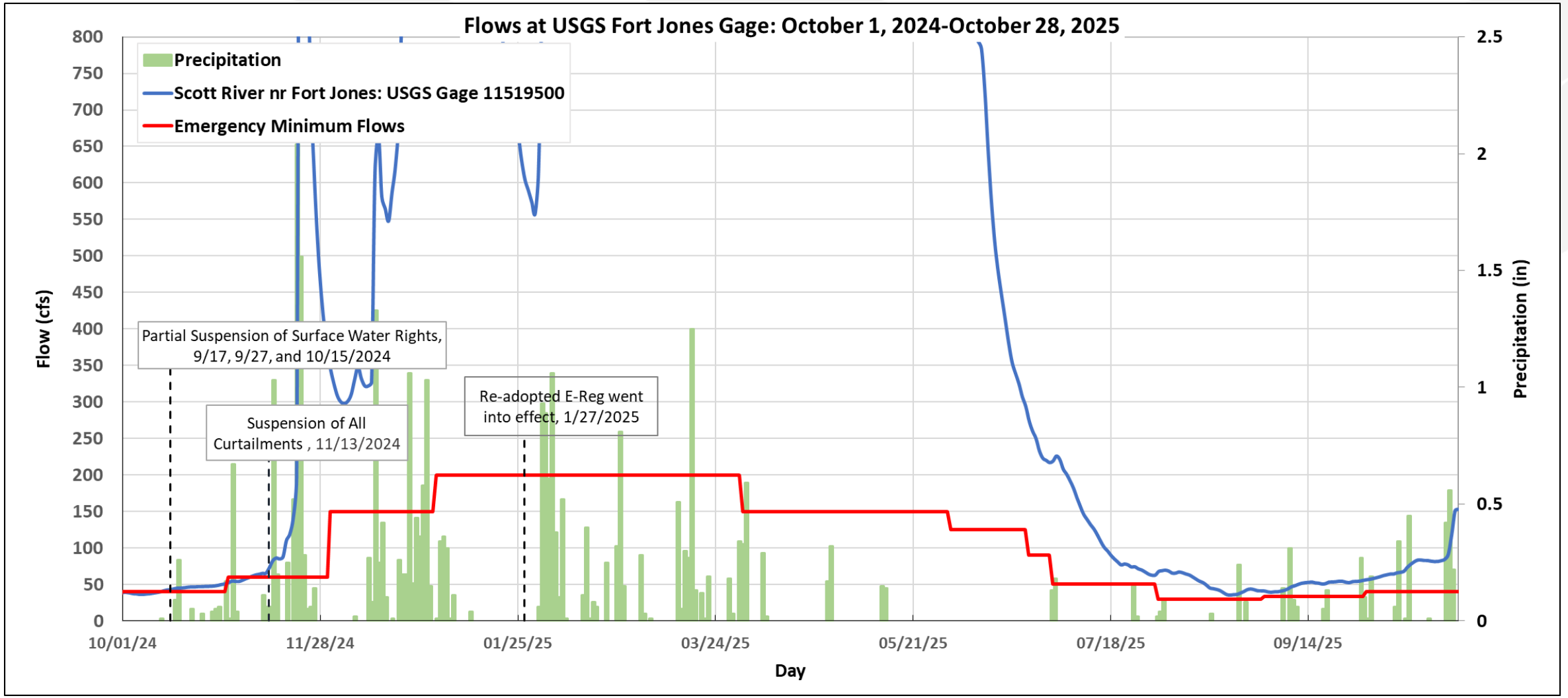


Groundwater Local Cooperative Solutions in 2025

- 35 applicants covering 63% of groundwater-irrigated acres
- 96 meters have been installed or are proposed for installation (73% LCS acreage)
- Working with applicants that are seeking Board funding for meters; contractor to begin installation this Fall

Year	Applicants	Total Acres	Percent of total Groundwater-irrigated acres in Scott Valley (17,800 acres)
2025	35	11,293	63%
2024	43	15,202	85%
2023	14	6,031	34%
2022	48	17,124	96%

Scott River Flow Conditions this Year



For Water Year 2024-25, maximum daily flow on December 29, 2024, was 6,800 cfs and minimum daily flow on August 22, 2025, was 35.4 cfs.

Shasta River: 2025 Highlights

- Conditional curtailments in effect from June 27 to October 15, 2025, to a priority date of November 25, 1912
- Watermaster and major diverters managed flows, providing flexibility to water rights holders
- Applied River Sciences conducted study in the lower Shasta Canyon over the summer
- An alternative flow regime was authorized from August 19-29, yielding limited success, with lessons for future

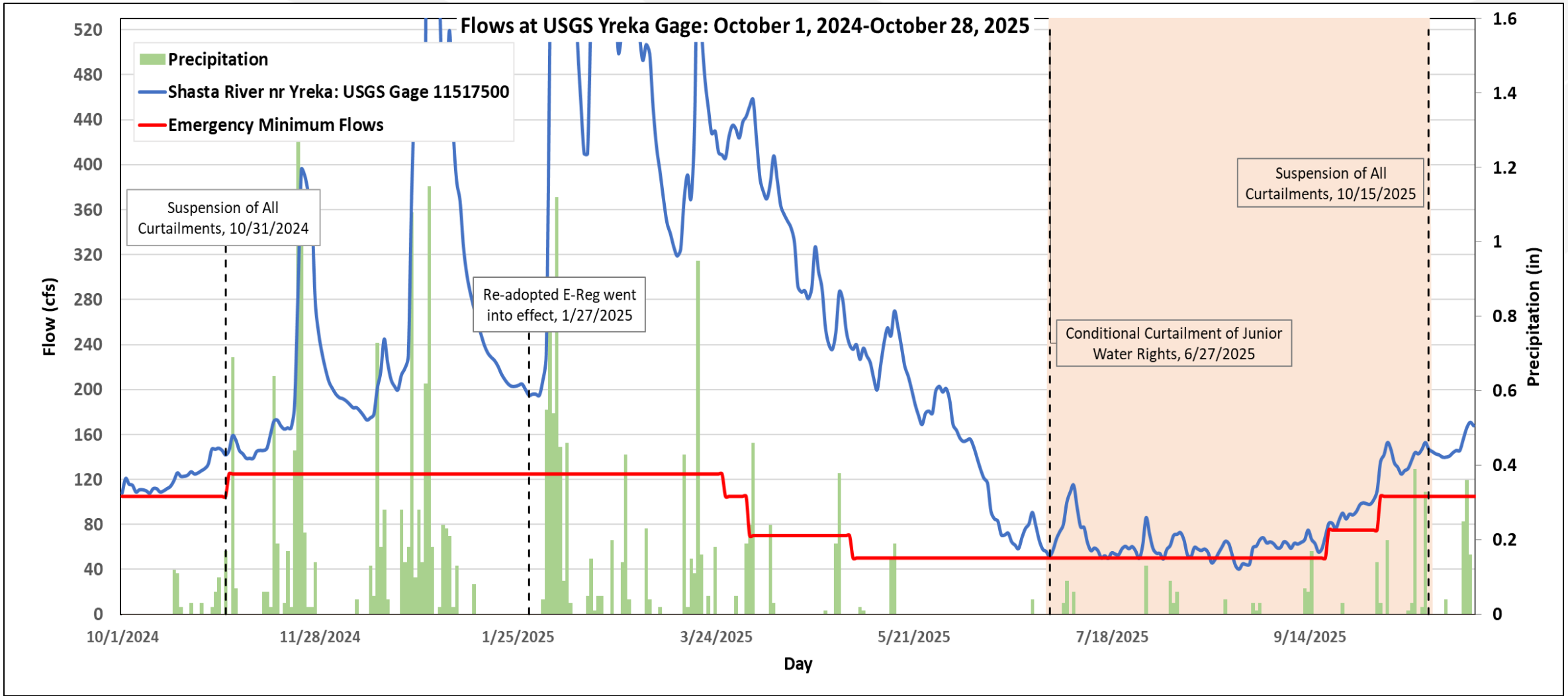
Applied River Sciences' Lower Shasta Canyon Study

- Purpose
  - Gather information on potential pool temperature stratification
  - Support development of juvenile salmonid bioenergetics models
- Equipment and sensors in place from June 11 to mid-September
  - Temperature stringers, dissolved oxygen probes, and pressure transducers
- Macroinvertebrate drift sampling
- Applied River Science is targeting release of the draft report for comment in late 2025/early 2026

2025 Implementation of Alternate Flow Regime

- Regulation section 875 provides for CDFW recommendation to Deputy Director to temporarily modify flows (Yreka gage) to evaluate alternative flows provide equal or better protection.
- CDFW recommended flows ranging from 40-60 cfs (flow requirement of 50 cfs in August) with flow schedule over 14 days
- Board issued an amendment to curtailment order providing for temporary change on August 20, 2025.
- Timeline shortened to 11 days (from August 19-29) due to difficulty maintaining flows (e.g., storms)
- Data will be provided to Applied River Sciences for integration into study in lower Shasta Canyon this past summer

Shasta River Flow Conditions



For Water Year 2024-25, maximum daily flow on February 4, 2025, was 2,210 cfs and minimum daily flow on August 21, 2025, was 40.4 cfs.

Long-term Efforts

- Baseline minimum flows for these watersheds
- Scientific basis reports
- Economic analysis
- Modeling + Tools
- Efforts to Improve Data
- AB 263

Need to Better Define Baseline Minimum Flows (specific to Scott-Shasta):

- Informs scope of scientific basis reports and economic analysis
- Ensures all parties understand intent and can provide appropriate input – focus discussion

Baseline Minimum Flows

- Resolution No. 2024-0036 directed staff to evaluate baseline minimum flows with emergency regulation minimum flows as a starting point
  - Baseline minimum flows are “flow appropriate to a stream system even in very dry years… but not tailored to reflect the varied flows under which species and their ecosystems evolved” (para. 5)
  - “In light of declining flow trends and fishery declines… need to ensure that baseline minimum flow in the… watersheds are met in all water years, regardless of whether the conditions allowing for drought emergency regulation authority exist” (para. 25)
  - Establish a foundation that future flow related efforts can build upon
    - Informed by effects of continued emergency flows and other efforts

Baseline Minimum Flows (specific to Scott-Shasta): **Potential Considerations**

- Introducing today – will seek additional public input
- Amount of water unreasonable to divert in any water year, even driest, while providing for other priority needs (e.g., human health and safety)
- Support minimum-level fishery conditions for fish life stages
- Maintain viability and genetic diversity, life history traits, and geographic distribution
- Help buffer population impacts from catastrophic events like disease outbreaks and severe drought
- Avoid extirpation of species from watersheds, support population increases for depressed populations
- Provide suitable water quality conditions to support salmonid survival

Scientific Basis Reports (SBRs): What

- Scientific analysis that takes available information to:
  - Assess benefits different flows provide for anadromous fish
  - Documents science supporting the analysis
- Informational - does not establish a flow
- For example, it may provide information such as:
  - At X cfs no fish life stage can survive
  - At Y cfs fish survival under stressful conditions and limited growth
  - At Z cfs improved fish growth and survival rates
- Can inform management decisions at individual and watershed scale (instream flow dedications, restoration, groundwater management)

Scientific Basis Reports (SBRs): Initial Steps Underway

- Solicitation released in March 2025 for resources Board should consider in this effort
- Working on range of baseline minimum flows to be evaluated in SBRs, considerations include:
  - Different flows at different times of the year
  - Additional locations (including key tributaries), rather than only one location at bottom of system
  - Other factors such as temperature in Shasta and groundwater in Scott

Scientific Basis Reports (SBRs): Next Steps

- Develop ranges of flows for each watershed
- Draft SBRs developed by consultants with input from Board staff
- Draft SBRs released for public comment
- SBRs updated based on comments and submitted for peer review

Economic Analysis: What

- Scope:
  - Broader than economic analysis associated with a traditional regulation or water quality control planning process
  - Evaluates costs and benefits of implementing baseline minimum flows
- Analysis will include:
  - Same range of flows as scientific basis reports
  - Evaluation of:
    - Impacts from decreased water supply relative to historic supply for proposed range of baseline minimum flows under variable hydrologic conditions (e.g., wetter and drier years)
    - Economic benefits of improved salmonid populations
    - Potential direct and indirect impacts to various economic sectors and affected parties

Economic Analysis: Initial Steps Underway

- Solicitation released in March 2025 for resources Board should consider in this effort
- Board staff are working on initial economic analysis efforts
- Agricultural Production Model
  - Assess impacts on local agriculture and indirect effects
  - Staff are compiling information and data needed for agricultural impact model (e.g., crop reports, land use) – reaching out to agricultural community
- Initiated discussions with tribes active in this effort
- Initiated conversations with commercial fisheries industry representatives

Economic Analysis: Next Steps

- Continue consultation efforts
- Complete work on Agricultural Production Model
- Use information from model and consultation efforts to draft economic analysis
- Release draft economic analysis for public comment
- Update economic analysis based on comments

Models and Tools: What and Why

- Provide information, including about different implementation scenarios considering all beneficial uses of water (e.g., fish and agriculture)
- Surface water-groundwater models
- Water allocation tool
  - Provide for evaluation of different implementation scenarios considering water rights information and priorities
- Temperature model (Shasta only)

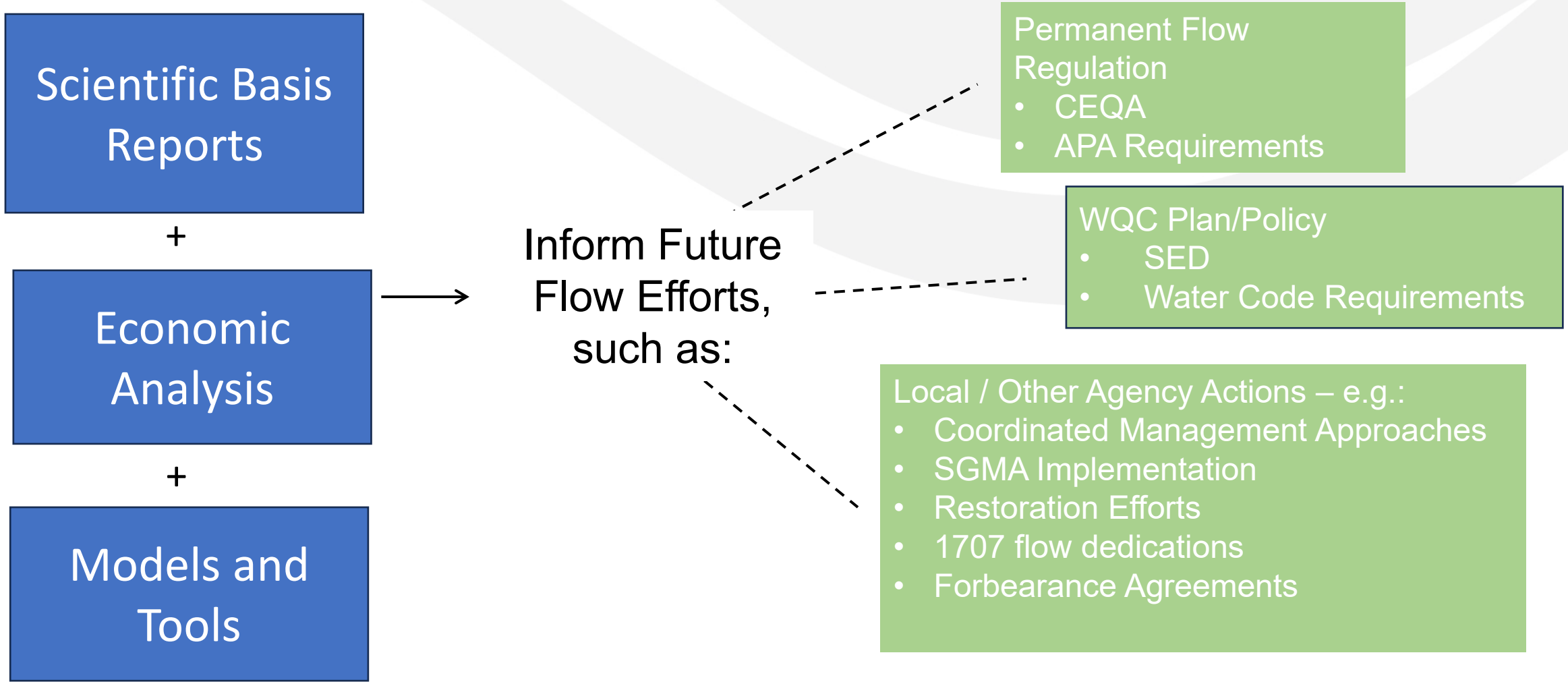
Models and Tools: Status + Next Steps

- Anticipate receipt of draft surface water-groundwater model and draft water allocation tool reports from consultants in coming months
- Plan to release draft surface water-groundwater model reports for public review in first half of 2026
  - Following public review, models will be updated as appropriate and submitted for peer review
- Water allocation tools and the temperature model (for Shasta River watershed) will be enhanced based on the surface water-groundwater models

Efforts at Improved Data

- Working with County, farmers, agencies, and other parties to obtain information
- Providing funding for new streamflow gages (USGS) + irrigation meters
- Receiving information on:
  - Groundwater: agricultural community + County
  - Connectivity + Fish Surveys: CDFW
  - Water quality + Photos: North Coast RWQCB

How Current Efforts Relate to Potential Flow Establishment Processes



AB 263: Continued Regulation Implementation

- Extends current emergency regulation until January 1, 2031 or rules establishing and implementing permanent long-term flow requirements are adopted, whichever occurs first
  - Staff will continue to implement the current regulation through 2030 or until rules are adopted
  - Existing minimum flows and implementation mechanisms remain in place
  - Flexibility remains
- Staff plan to have at least annual information items before Board for updates and public comment

Written Comments #1

Karuk Tribe of California, Environmental Law Foundation, Pacific Coast Federation of Fishermen's Associations, and Institute for Fisheries Resources

- Requests the Board:
  - Provide specific timeline of steps to be taken in short and long term to complete reports and models
  - Direct staff to work on developing permanent rules establishing and implementing long-term instream flow requirements
    - Ensure that permanent flow protections are in place by 2031
  - Pursue baseline minimum flows to avoid worst-case outcomes, but should ensure those flows are sufficient
  - Add stream gages and points of compliance to protect summer rearing habitat and passage in key tributaries

Written Comments #2

Water Climate Trust:

- Reconsider position on baseline minimum flows and include “water-year specific” flow recommendations in the scientific basis report and economic impact analysis
- Economic analysis should recognize cost of extinction is beyond measure for future generations, Tribal members, and countless people who believe other species have an intrinsic value and a right to exist
- Scientific basis report should set clear goals and use terminology and definitions that correlate to fish populations and management goals

Next Up

- Any questions at this time
- Presentations by CDFW and Farm Bureau