

Bay-Delta Water Quality Control Plan Update and Recirculated Draft Substitute Environmental Document

Hearing

November 29, December 16, 19, 20, 2016

January 3, 2017

State Water Resources Control Board

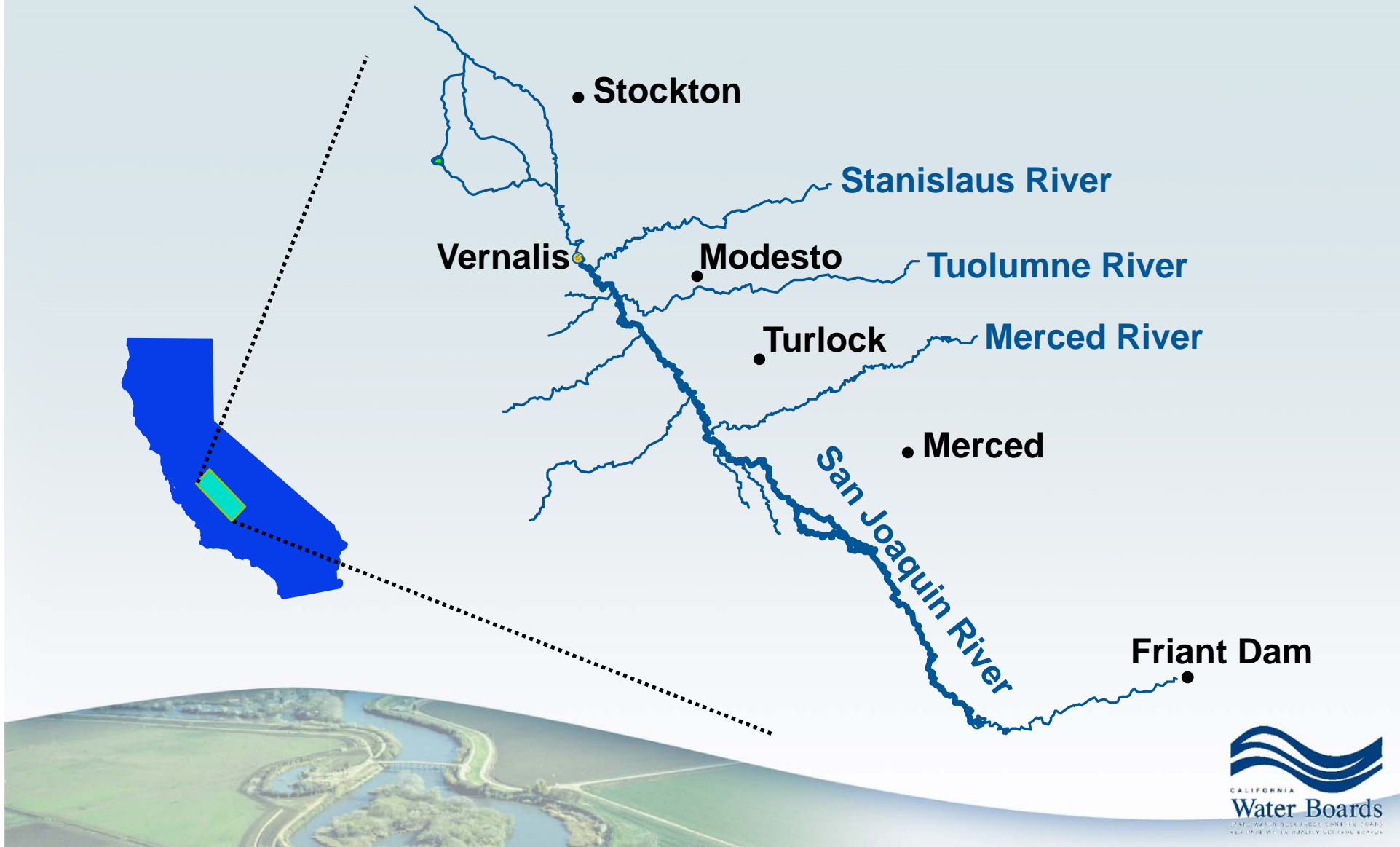
The Project

Update of Bay-Delta Plan:

- San Joaquin River flows for reasonable protection of fish and wildlife
- Southern Delta salinity for reasonable protection of agriculture
- Program of implementation



Lower San Joaquin River (LSJR) Basin



Current Plan Out of Date

- Plan last updated 21 years ago in 1995
- Species have been declining – the need for update was identified 10 years ago (in 2006 Plan update)
- Endangered Species Act increasing water restrictions
- Administration's California Water Action Plan directs the State Water Board to complete the update of the Plan to further achievement of the co-equal goals in the Delta
 1. Providing a more reliable water supply for California
 2. Protecting, restoring, and enhancing the Delta ecosystem

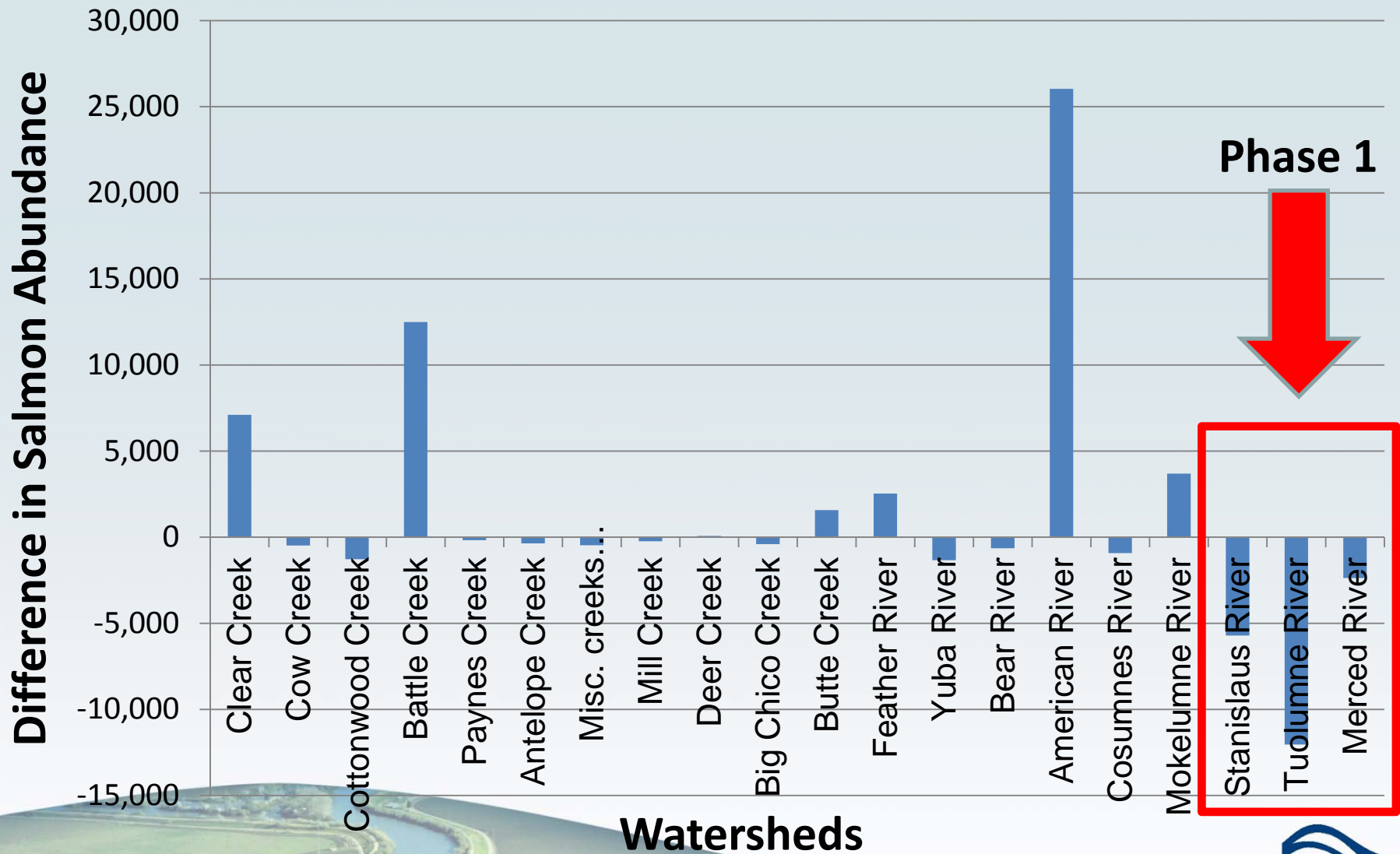


Why Focus on Flow?

- Scientific studies show that flow is a major factor in the survival of fish like salmon
- Many benefits of flow, including improved growth and survival of native fish by improving water temperatures and increasing floodplain habitat
- Flow affects risk of disease, risk of predation, reproductive success, growth, smoltification, migration, feeding behavior, and other ecological factors
- Non-flow measures can also be important but State Water Board has limited authority to require non-flow measures

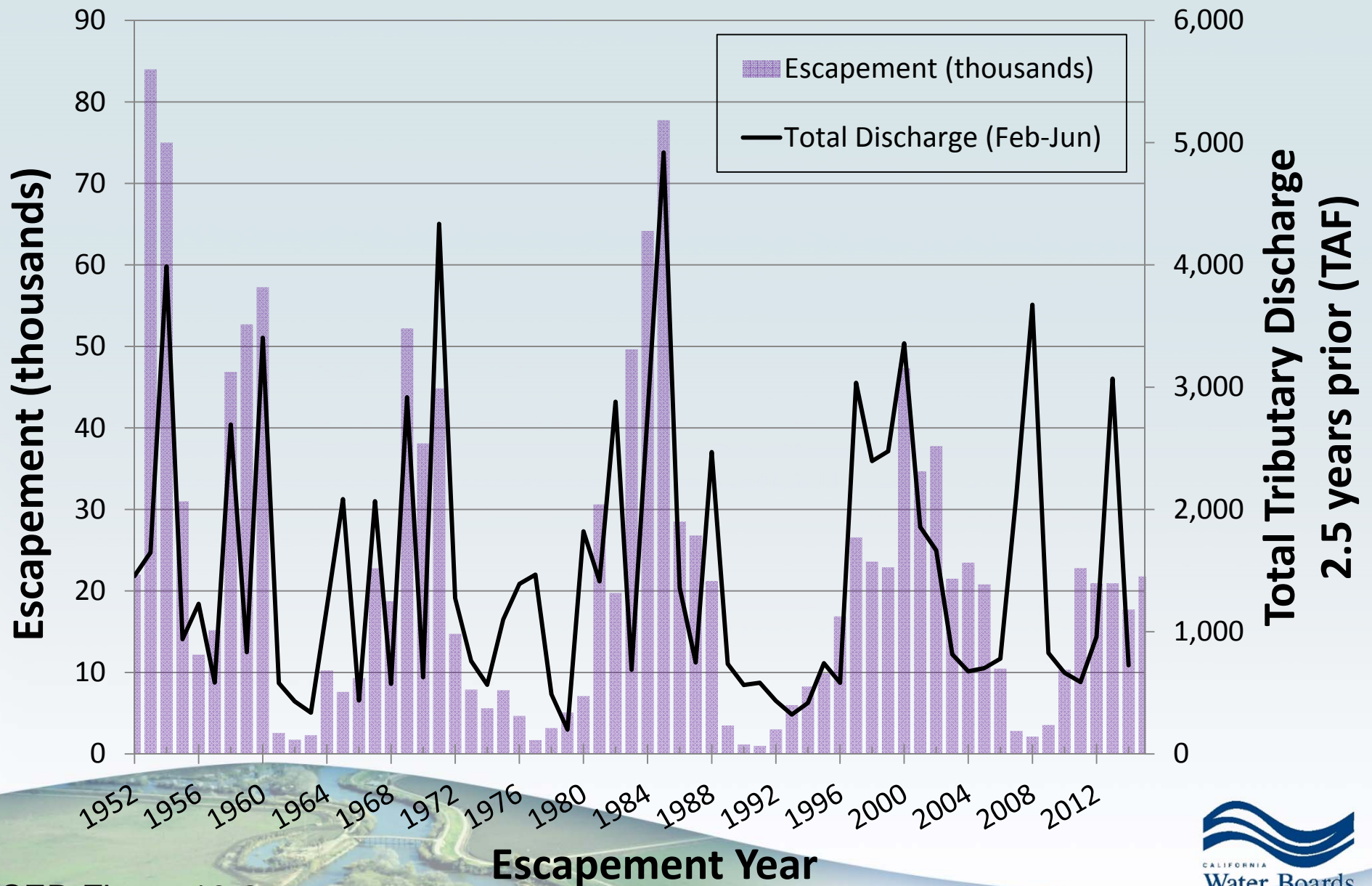


Difference in Adult Fall-run Chinook Salmon Natural Production (1992 to 2011 average minus 1967 to 1991 average)



SED Figure 19-1
Corrected Tuolumne River

Adult Salmon Returns and Flows Experienced by Juveniles



SED Figure 19-2



This is Hard, Requires Balancing

- State Water Board's 2010 flow criteria report – a purely technical assessment and no balancing – concluded that 60 percent of flow should be left in the LSJR for the benefit of fish
- Current uses (agriculture, drinking water) rely on up to 80 percent or more of the unimpaired flow
- Unlike the 2010 report, this staff proposal considers other uses and aims to strike a balance among competing uses of water
- The staff proposal recommends a range of between 30 and 50 percent of unimpaired flow, with a starting point of 40 percent – this is a big increase



This is Hard, Requires Balancing

- This is less than what environmental and commercial fishing interests favor, and more than agricultural and affected urban users want
- Balancing is hard, but is what we are called upon to do
- Because it is hard, State Water Board has a long history of encouraging settlements



Settlements are Encouraged

- The flow proposal includes “adaptive implementation,” which allows adjustments so water is used wisely and more effectively – implementation of non-flow measures could also reduce the flows needed
- Board is looking for durable local solutions that will improve flows and other conditions that can reduce the need for flow
- Local water agencies and local people working with agency experts and other organizations can provide the foundation for such durable solutions
- The California Natural Resources Agency is leading settlement discussions to explore the potential for a comprehensive agreement on environmental flows in both the San Joaquin and Sacramento River basins

Current SJR Spring Flow Objective

- One compliance location: Lower San Joaquin River at Vernalis (inflow to Delta)
- Minimum monthly average flow rates
- Includes "pulse" flow during a 31-day period in April and May of each year
- USBR only responsible water right holder



Proposed LSJR Flow Objective

- Applies to salmon-bearing tributaries -- the Stanislaus, Tuolumne, and Merced Rivers
- Narrative Objective:
 - Maintain inflow conditions from the SJR watershed to the Delta at Vernalis sufficient to support and maintain the natural production of viable native SJR fish populations migrating through the Delta
- Numeric Objective:
 - Feb - June: 30% - 50% unimpaired flow
 - Starting point of 40%
 - Unimpaired flow: 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

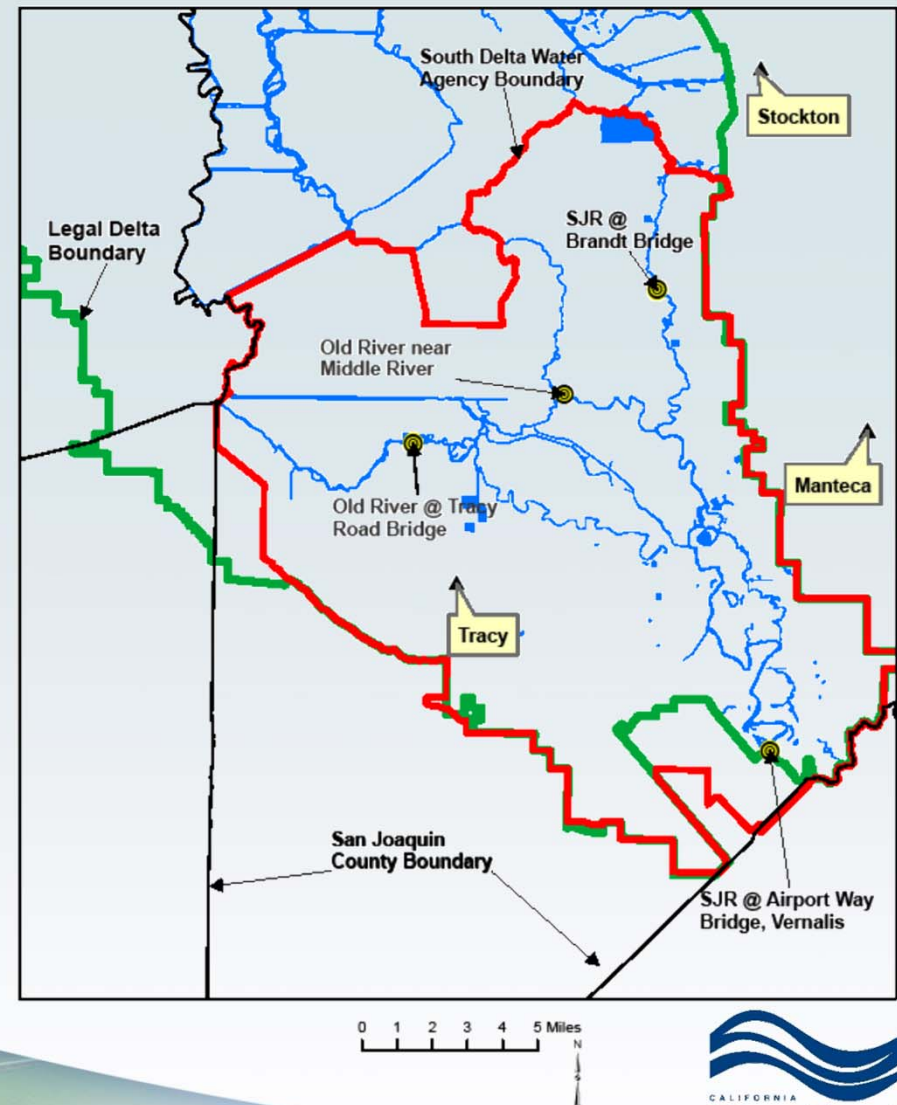
Proposed LSJR Flow Objective

- Adaptive Implementation
 - Adjustments within the 30% - 50% range
 - Adjustments within Feb - June period
 - Flow shifting to avoid temperature impacts in fall
- Stanislaus, Tuolumne, and Merced (STM) Working Group – implementing entity
 - Biological goals
 - Planning, monitoring, and reporting
 - Voluntary agreements



Current Southern Delta Salinity Objective

- April through August:
 - 0.7 millimhos per centimeter (mmhos/cm) EC
 - based on the salt sensitivity and growing season of beans
- September through March:
 - 1.0 mmhos/cm EC
 - based on the growing season and salt sensitivity of alfalfa during the seedling stage
- Four Salinity compliance stations within the southern Delta:
 - San Joaquin River at Vernalis
 - San Joaquin River at Brandt Bridge
 - Old River at Middle River
 - Old River at Tracy Road Bridge



Hoffman Report, Figure 1.1.

Proposed Southern Delta Salinity Objective

- Year round objective of 1.0 deciSemens per meter (dS/m) EC
- Three compliance locations changed to channel segments
 - SJR from Vernalis to Brandt Bridge
 - Middle River from Old River to Victoria Canal
 - Old River/Grant Line Canal from Head of Old River to West Canal
- Continued conditions in USBR and DWR's water rights
 - USBR - 0.7 EC at Vernalis April - Aug; 1.0 EC Sep - March
 - DWR & USBR - 1.0 EC year round in the interior Delta locations
 - DWR & USBR - Continued operations of agricultural barriers or other reasonable measures to address impacts of SWP/CVP operations on water levels and flow conditions

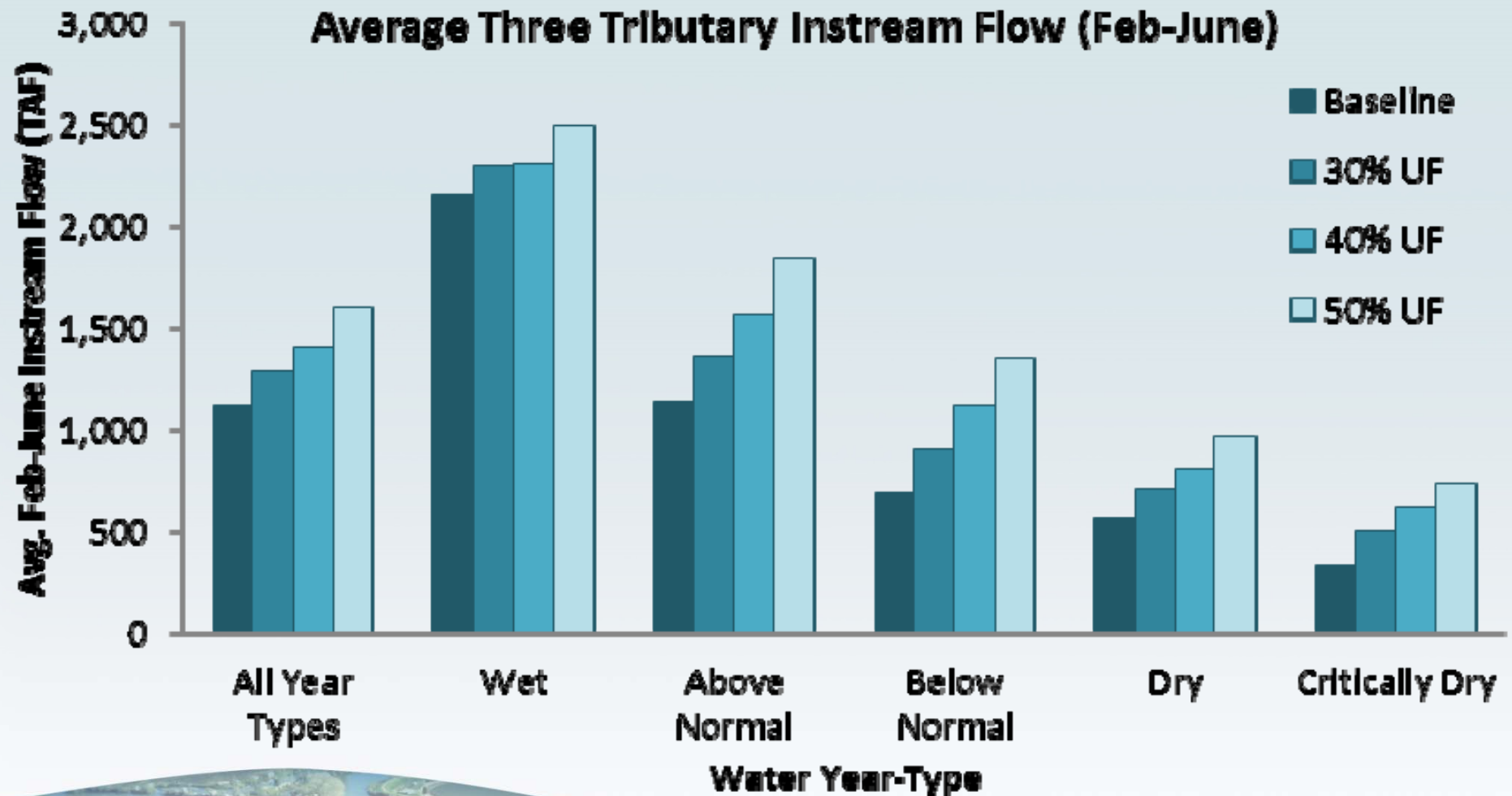


Proposed Southern Delta Salinity Objective

- Other Requirements
 - Comprehensive Operations Plan - information, actions, performance goals to address SWP/CVP export operations on water levels and flow conditions affecting salinity
 - Monitoring and reporting
 - Study to characterize dynamics of water level, flow, and salinity conditions
- LSJR flow objectives would improve salinity conditions



Instream Flows Under the Flow Proposal



Under the 40% unimpaired flow (UF) proposal, average annual instream flow Feb - June would increase by 288 thousand acre feet (TAF), or 26 percent

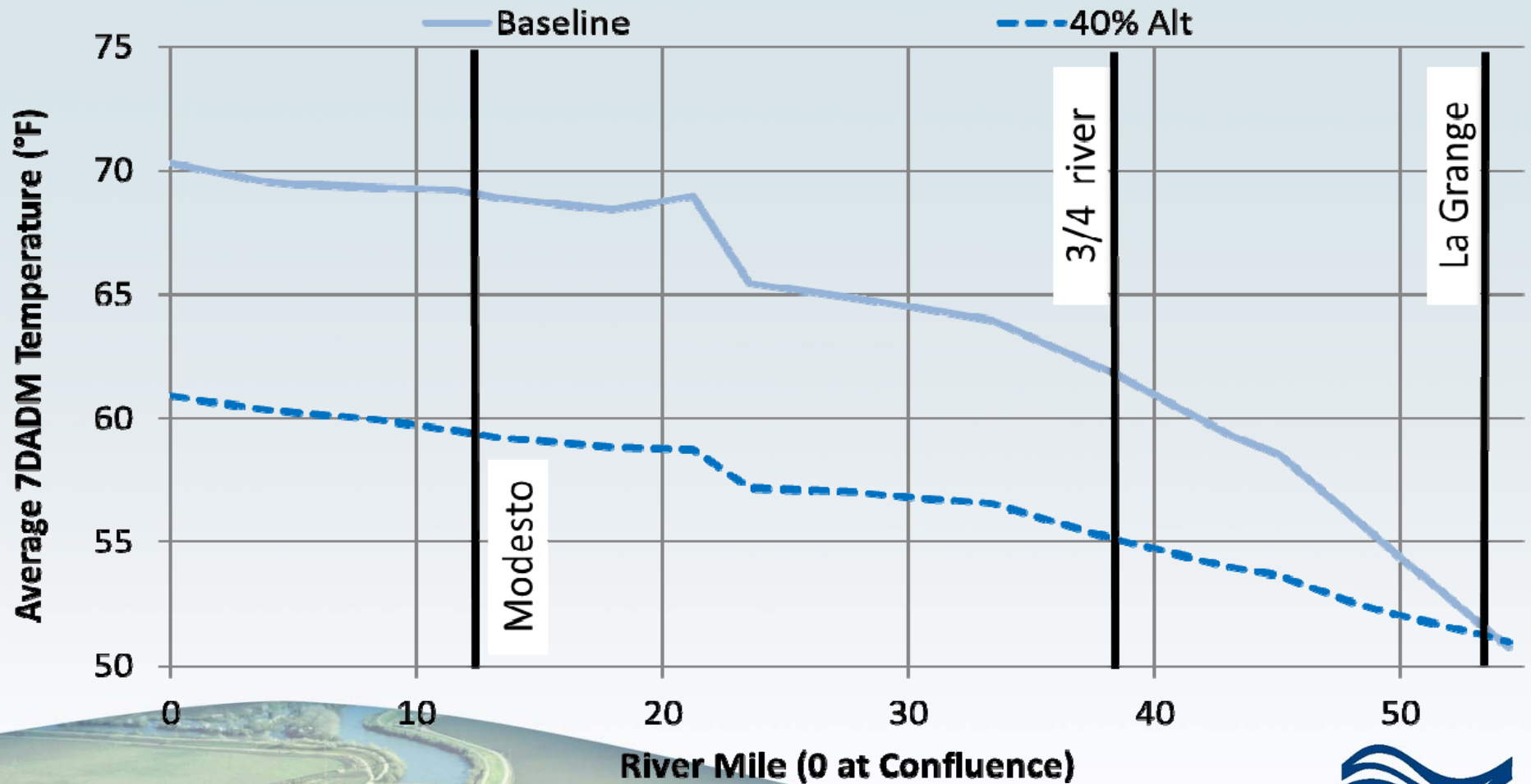
Ecosystem Benefits of the Flow Proposal

- Restores the pattern and some limited magnitude of flow that are more closely aligned to the flow conditions to which native species are adapted
- Improves attainment of temperature criteria and increases floodplain inundation, resulting in greater survival and resiliency of native fish

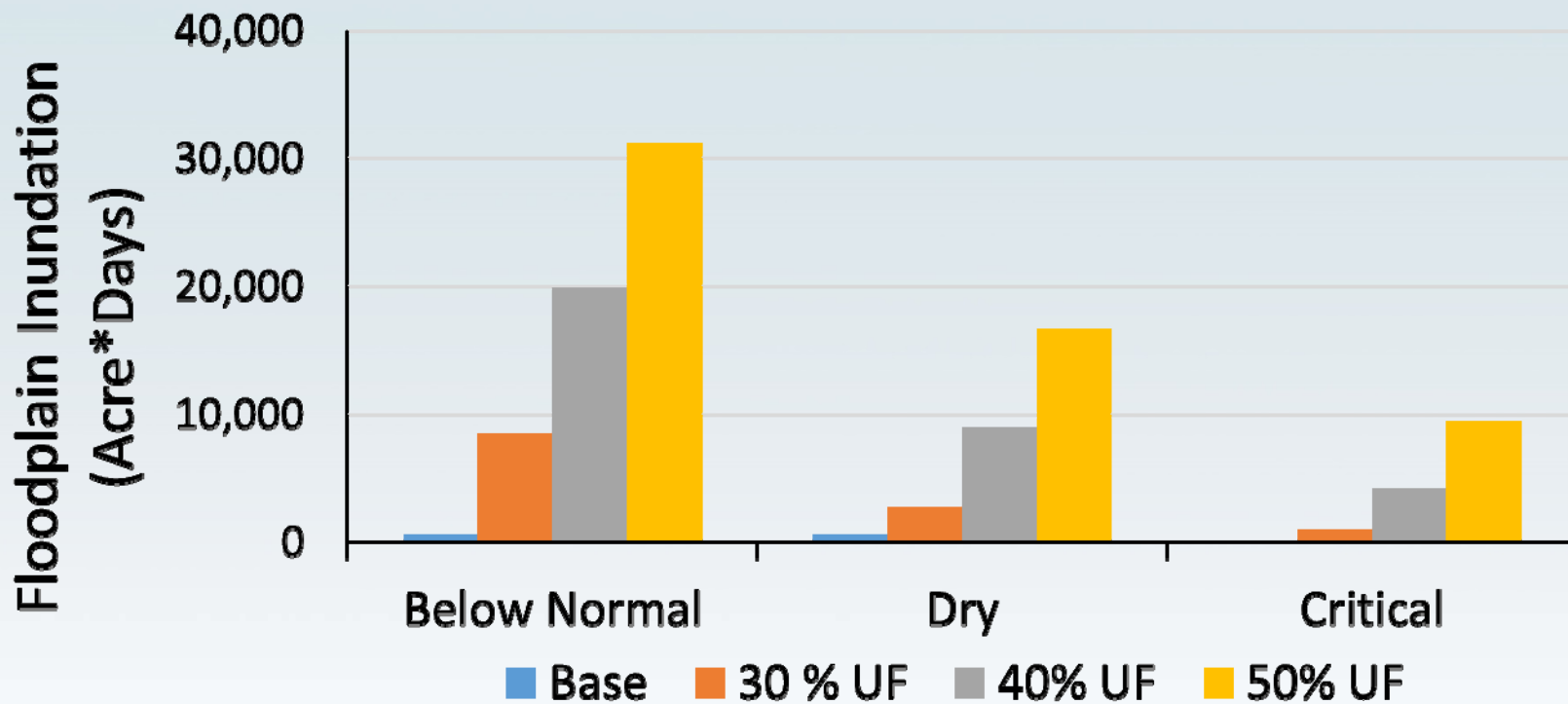


Temperature Benefit of Increased Flows

Tuolumne River Longitudinal Profile for May, 1991



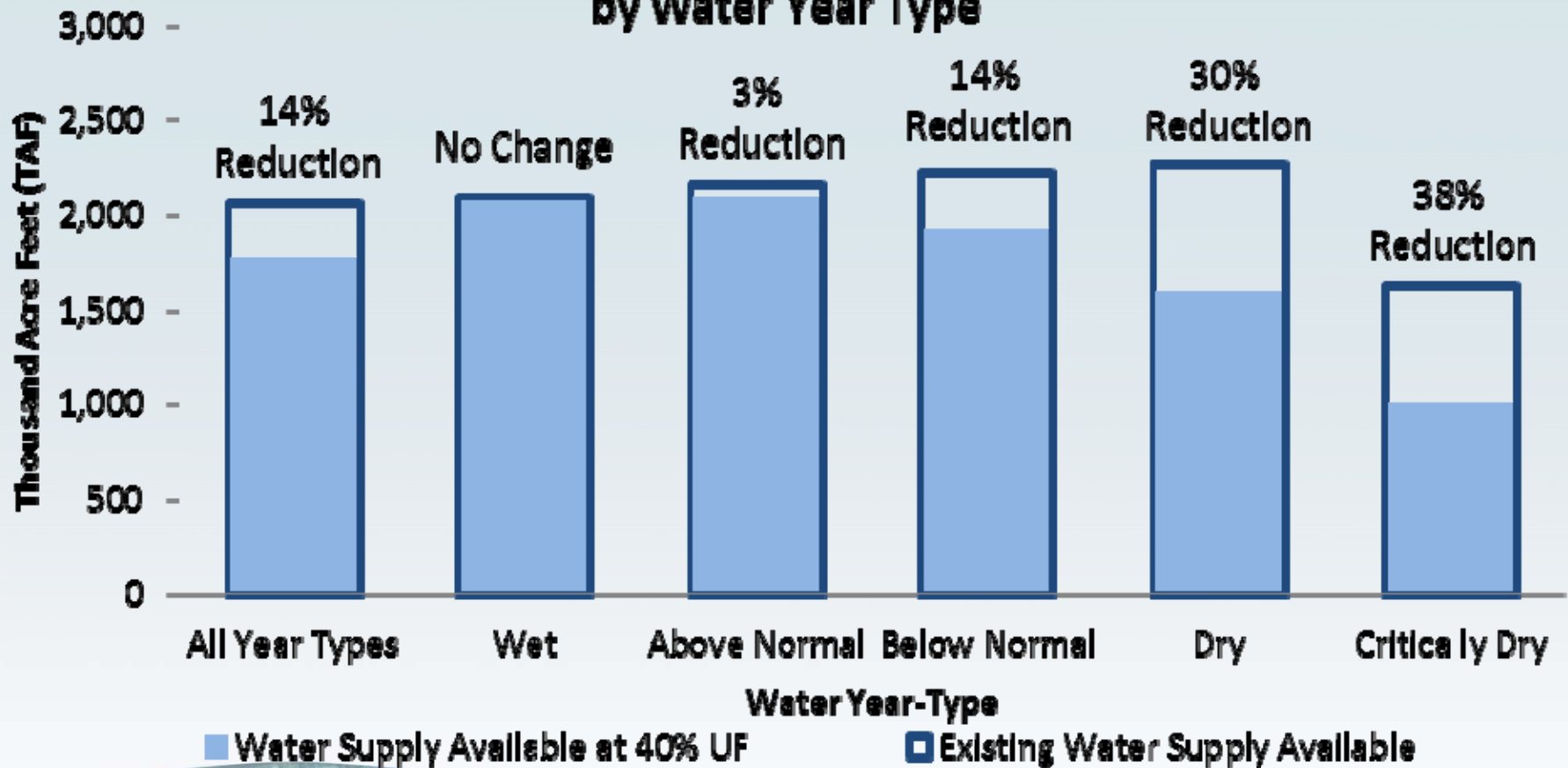
Annual Average Floodplain Inundation Tuolumne River, April – June in Below Normal, Dry, and Critical Years



Based on Table 19-30

What are the Impacts of the Flow Proposal?

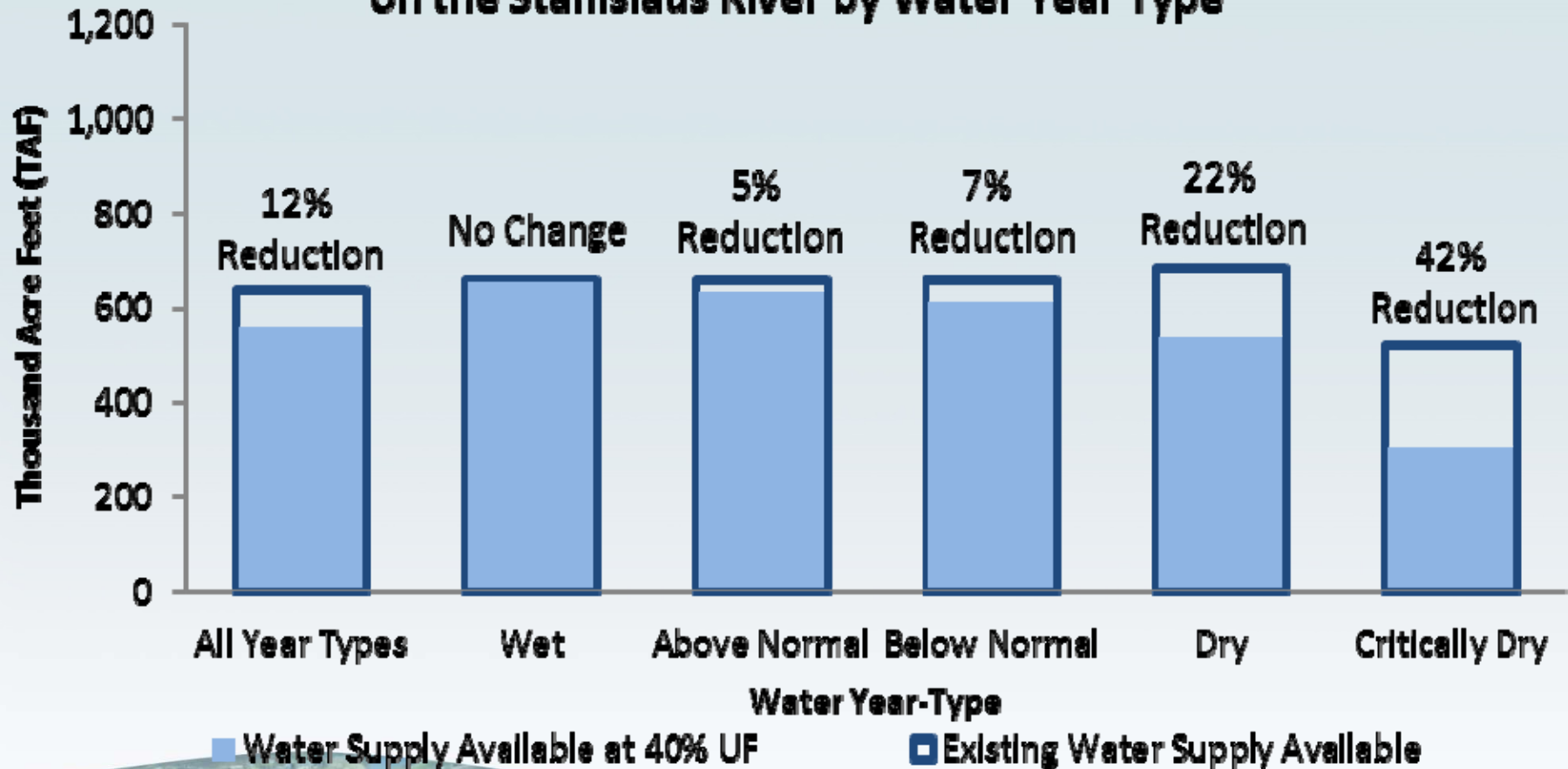
Water Supply Impact of the 40% Unimpaired Flow Proposal within the Plan Area by Water Year Type



The greatest impact on diversions for human use would be in driest years; there would be almost no impact on diversions for human use in wet years

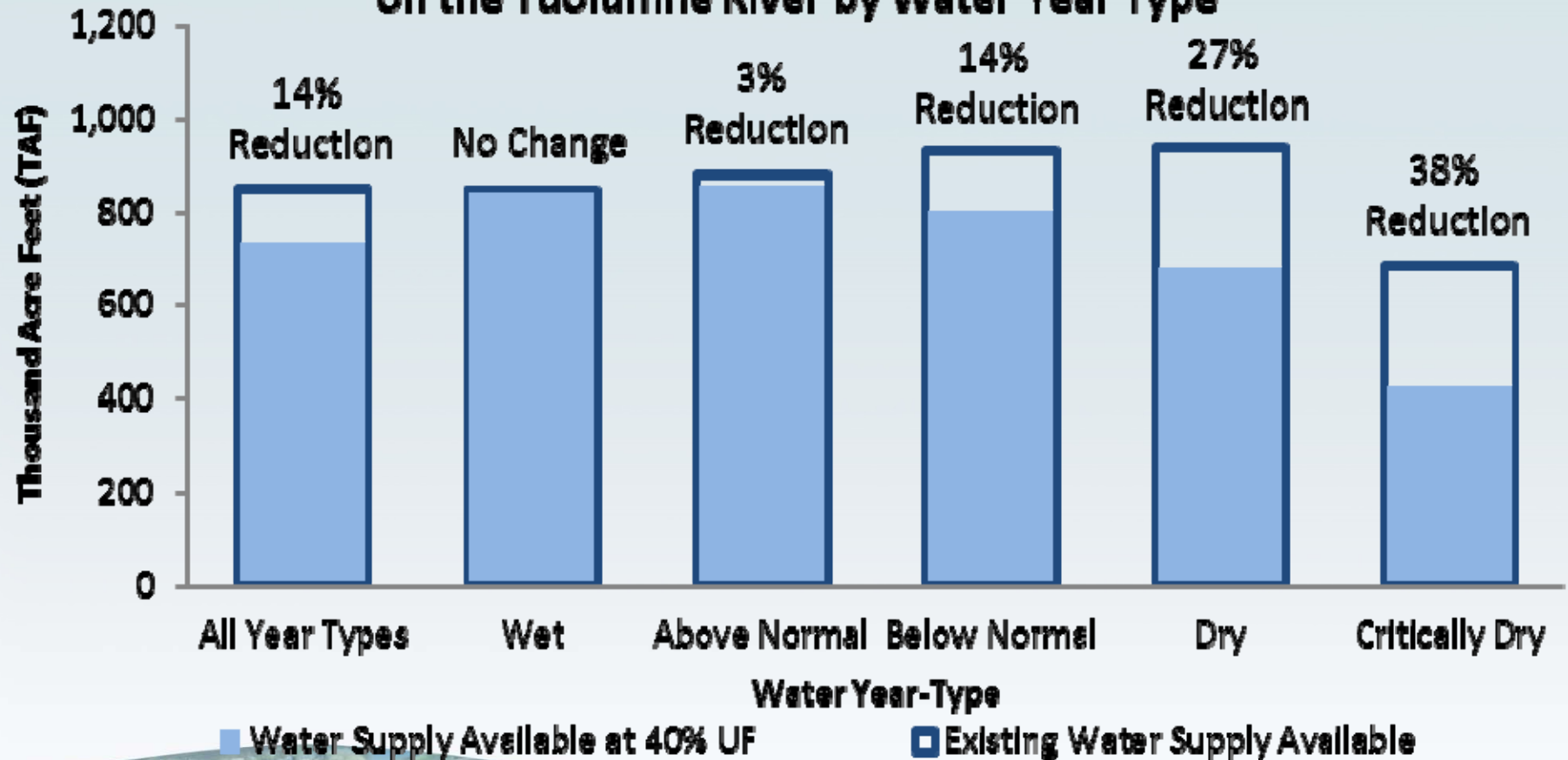
What are the Impacts of the Flow Proposal?

Water Supply Impact of the 40% Unimpaired Flow Proposal on the Stanislaus River by Water Year Type



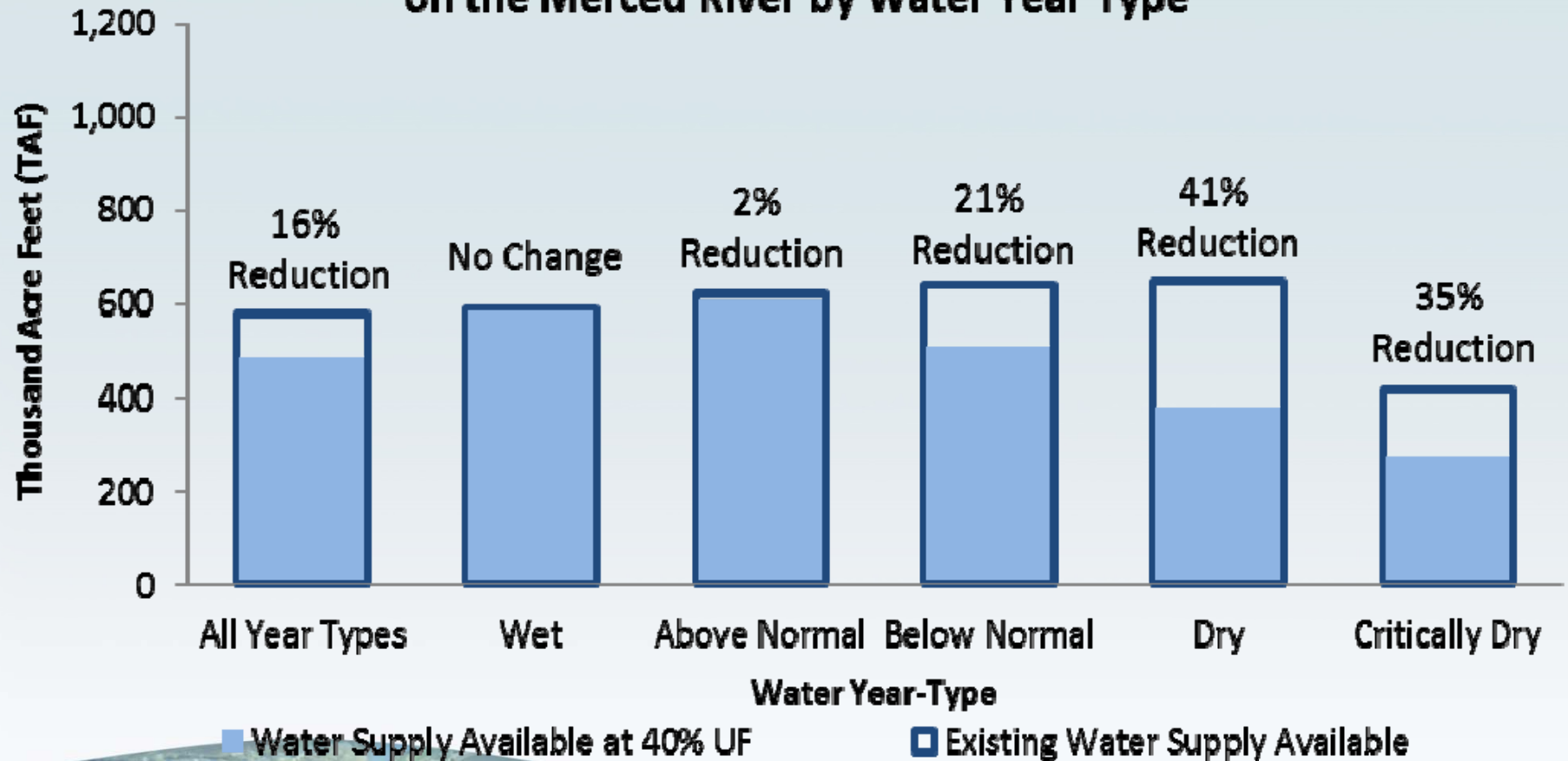
What are the Impacts of the Flow Proposal?

Water Supply Impact of the 40% Unimpaired Flow Proposal on the Tuolumne River by Water Year Type



What are the Impacts of the Flow Proposal?

Water Supply Impact of the 40% Unimpaired Flow Proposal on the Merced River by Water Year Type



What are the Impacts of the Flow Proposal?²⁵

Implementing the 40% flow proposal could result in:

- 14% reduction (293 TAF) in water available for surface water diversion (7% to 23% reduction for 30% to 50% range of unimpaired flow)
- Increase groundwater pumping by an average of 105 thousand acre-feet per year (TAF/yr)
- Increase unmet agricultural water demand:
 - 137 TAF/yr based on 2009 maximum groundwater pumping
 - 69 TAF/yr based on 2014 maximum groundwater pumping
- An average annual decrease in economic output of \$64 million (2.5% reduction from baseline annual average agricultural economic sector output of \$2.6 billion)



Effects of the Flow Proposal

- Groundwater resources
 - Increase groundwater pumping and reduce recharge
 - Lower groundwater level
- Agriculture
 - Change cropping pattern and reduce irrigated acreage
 - Reduce agricultural revenue
- Drinking Water Supply
 - Need to construct new wells or deepen existing wells
 - Affect groundwater quality



Phase 1 Next Steps

- Dates for the Public Hearing:
 - Nov 29: Sacramento
 - Dec 16: Stockton
 - Dec 19: Merced
 - Dec 20: Modesto
 - Jan 3: Sacramento
- Draft SED & Plan Comments due: Jan 17, 2017
- Anticipated Final SED & Plan Release: May 2017
- Anticipated Board meeting to adopt: July 2017



If you would like to make a comment on the WQCP Update and SED you must send your comments by no later than 12:00 noon on January 17, 2017 to: commentletters@waterboards.ca.gov with “**Comment Letter – 2016 Bay-Delta Plan Amendment & SED**” in the subject line.

You can also make oral comments during the hearing held on:

SACRAMENTO

Nov. 29, 2016 and Jan. 3, 2017 – 9 AM
CalEPA Headquarters Building
2nd Floor
1001 “I” Street

MERCED

Dec. 19, 2016 – 9 AM
Merced Theatre
301 W. Main Street

STOCKTON

Dec. 16, 2016 – 9 AM
Stockton Memorial Civic Auditorium
Main Hall
525 “N” Center St,

MODESTO

Dec. 20, 2016 – 9 AM
Modesto Centre Plaza
Tuolumne River Room
1000 “K” Street

For more information visit: <http://waterboards.ca.gov/DeltaWQCP-Phase1>

