Overview of Nacimiento and San Antonio Reservoir Operations and Potential Re-operations

Salinas Valley Basin Groundwater Sustainability Agency
Advisory Committee
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Nacimiento and San Antonio Dams and Reservoirs Background and History

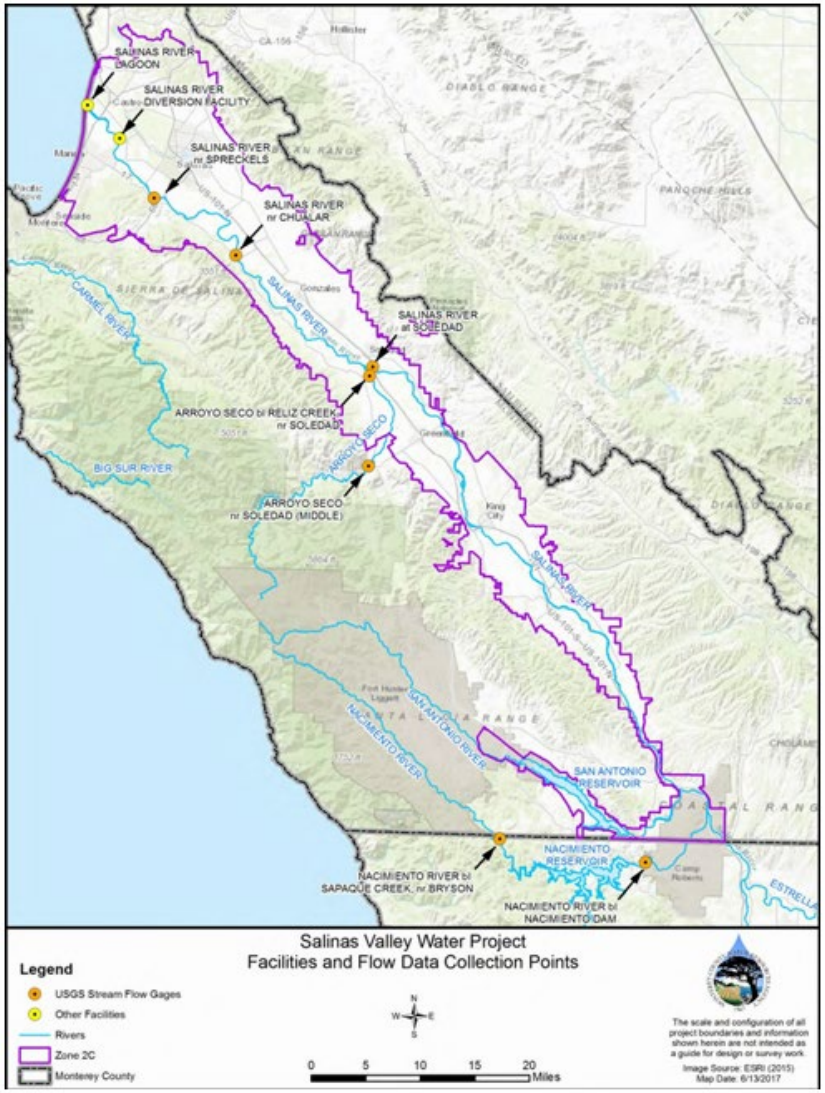
Why were they built?

- California's 1946 Bulletin 52 identified severe groundwater overdraft and saltwater intrusion in the Salinas Valley.
- Bulletin 52 recommended capturing winter runoff through surface-water storage to improve groundwater recharge, protect the basin, and stabilize regional water supply.
- These findings ultimately set the stage for the construction of projects such as Nacimiento and San Antonio Dams.

Nacimiento Dam was built in 1957 and San Antonio Dam in 1967

- As multi-use facilities, they are operated with consideration to many factors including dam safety, flood protection, groundwater recharge, operation of the SRDF, habitat management and fish passage requirements, agriculture, and recreation.
- Allowed through State Appropriative Water Rights

Nacimiento and San Antonio Dams and Reservoirs



Nacimiento and San Antonio Dams and Reservoirs
Background and History

Nacimiento Water Rights

LICENSE 7543

- Priority Date: November 4, 1954
- 350,000 AF per annum to be collected from October 1 to July 1
- Maximum withdrawal in any one year shall not exceed 180,000 AF
- For Municipal, Domestic, Industrial, Irrigation, Recreational, and Incidental Power within: the San Luis Obispo County Flood Control and Water Conservation District and Monterey County Water Resources Agency Zone 2C

PERMIT 21089

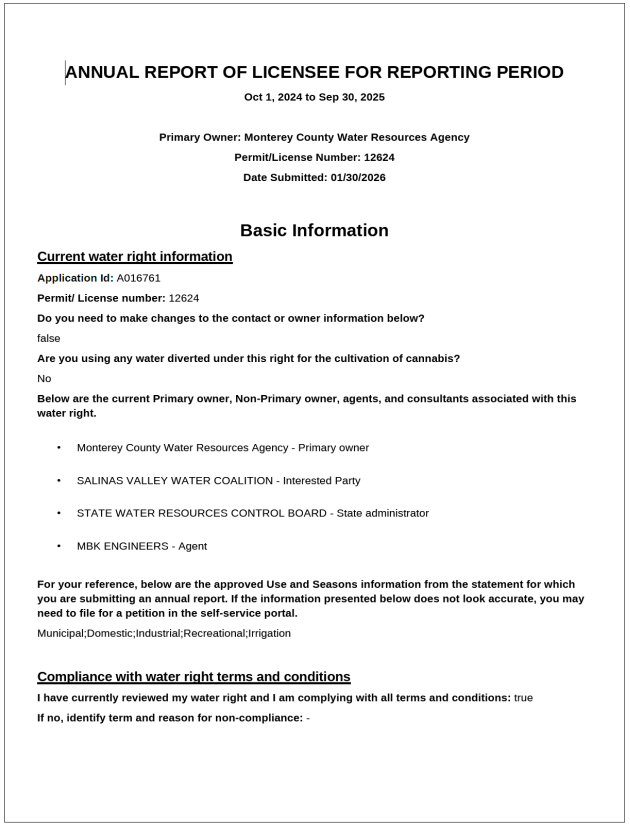
- Application Date: April 23, 1996
- 27,900 AF per annum to be collected from October 1 to July 1
- Same purpose of use and place of use as license

Nacimiento and San Antonio Dams and Reservoirs Background and History

San Antonio Water Rights

LICENSE 12624

- Priority Date: December 2, 1955
- 220,000 AF per annum to be collected from October 1 to July 1
- Maximum withdrawal in any one year shall not exceed 210,000 AF
- For municipal, domestic, industrial, irrigation and recreation within the Monterey County Water Resources Agency Zone 2C



ANNUAL REPORT OF LICENSEE FOR REPORTING PERIOD

Oct 1, 2024 to Sep 30, 2025

Primary Owner: Monterey County Water Resources Agency

Permit/License Number: 12624

Date Submitted: 01/30/2026

Basic Information

Current water right information

Application Id: A016761

Permit/ License number: 12624

Do you need to make changes to the contact or owner information below?

false

Are you using any water diverted under this right for the cultivation of cannabis?

No

Below are the current Primary owner, Non-Primary owner, agents, and consultants associated with this water right.

- Monterey County Water Resources Agency - Primary owner
- SALINAS VALLEY WATER COALITION - Interested Party
- STATE WATER RESOURCES CONTROL BOARD - State administrator
- MBK ENGINEERS - Agent

For your reference, below are the approved Use and Seasons information from the statement for which you are submitting an annual report. If the information presented below does not look accurate, you may need to file for a petition in the self-service portal.

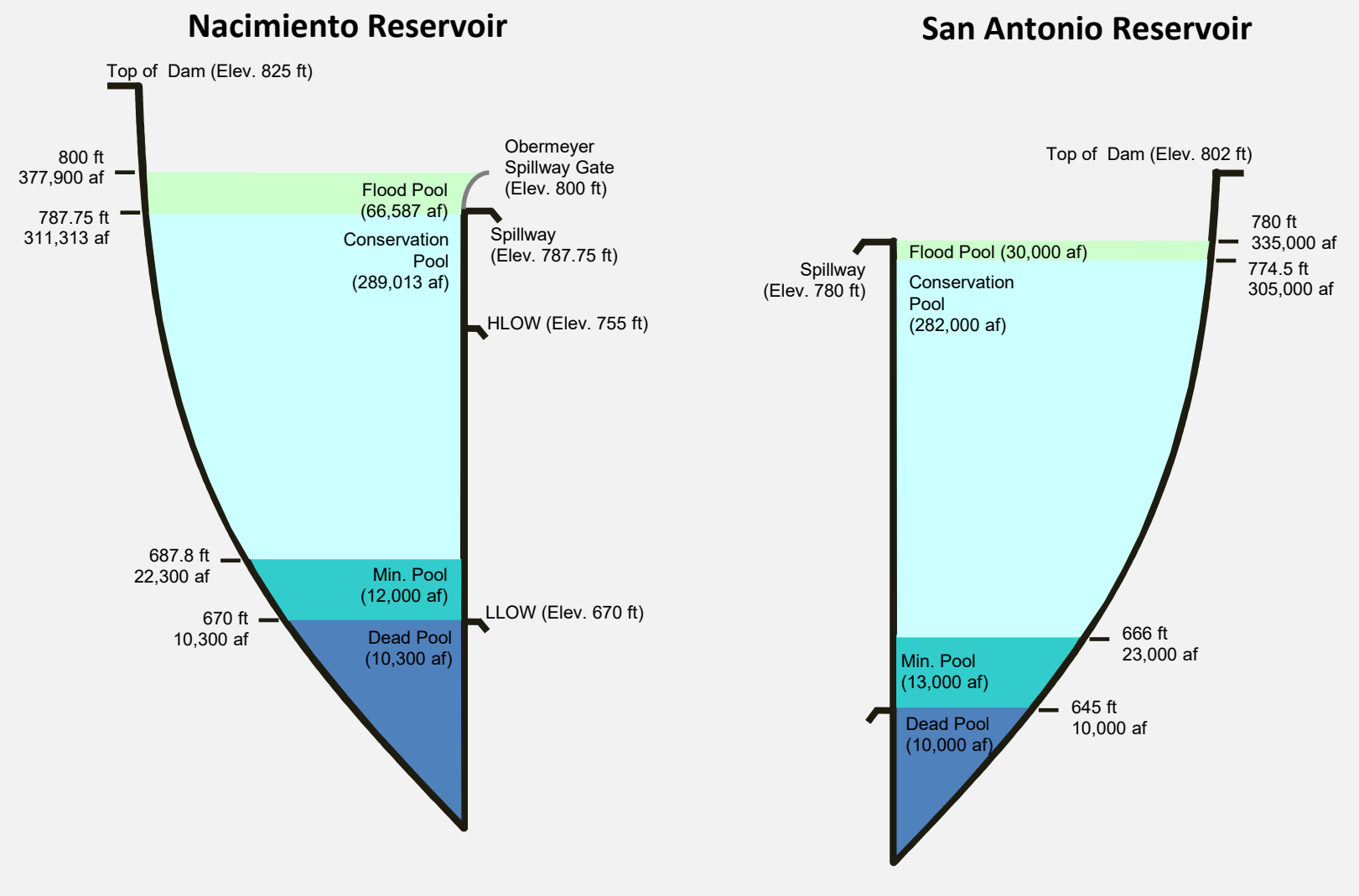
Municipal;Domestic;Industrial;Recreational;Irrigation

Compliance with water right terms and conditions

I have currently reviewed my water right and I am complying with all terms and conditions: true

If no, identify term and reason for non-compliance: -

Schematic of Reservoir Pools



Nacimiento and San Antonio Dams and Reservoirs

OPERATIONS

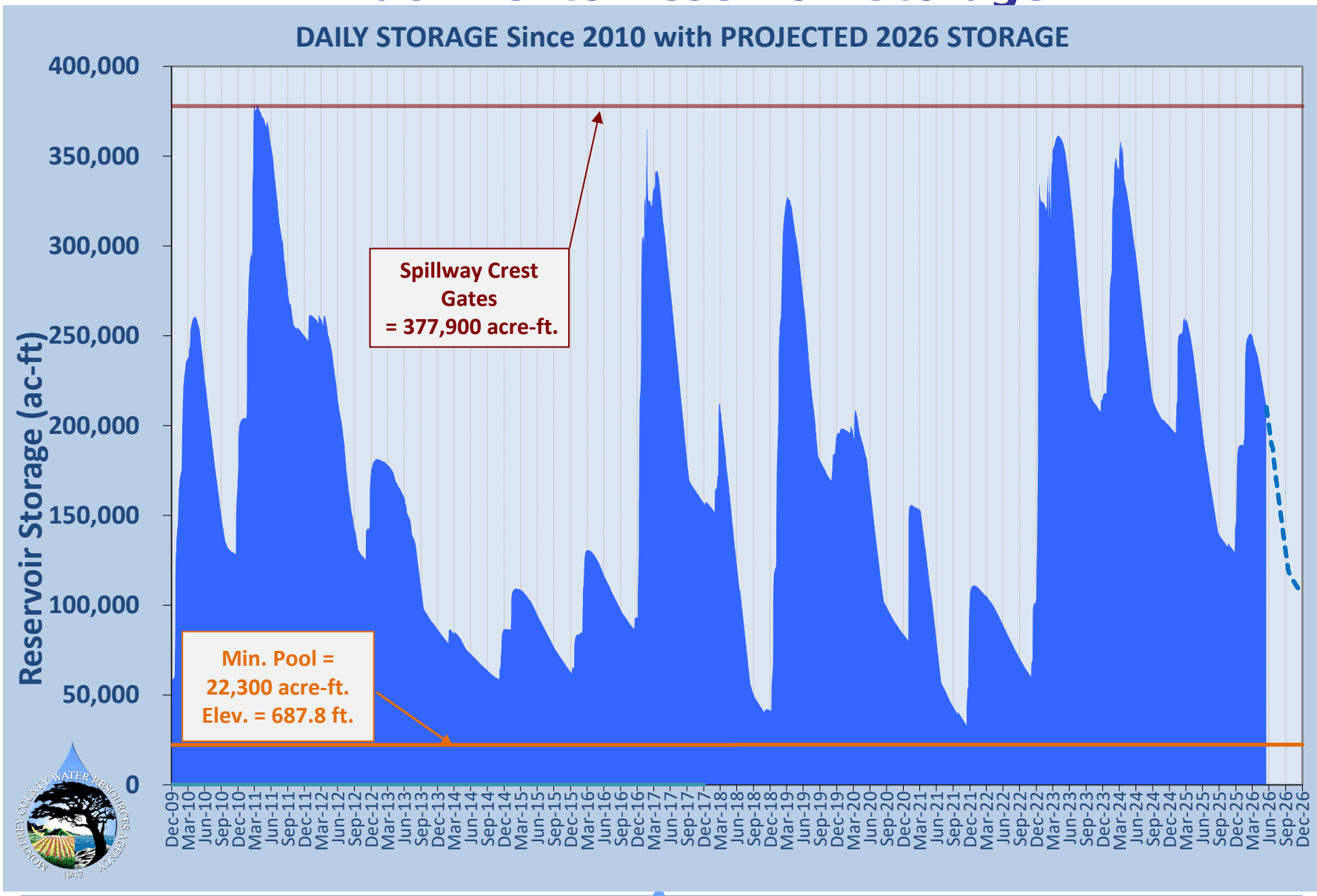
Obligations:

- Water Rights Requirements
  - Environmental Compliance
  - Groundwater Recharge & SRDF Operations
- Settlement Agreements
  - SLO County
  - Salinas Valley Water Coalition
- Flood Control Operations
  - DSOD & FERC

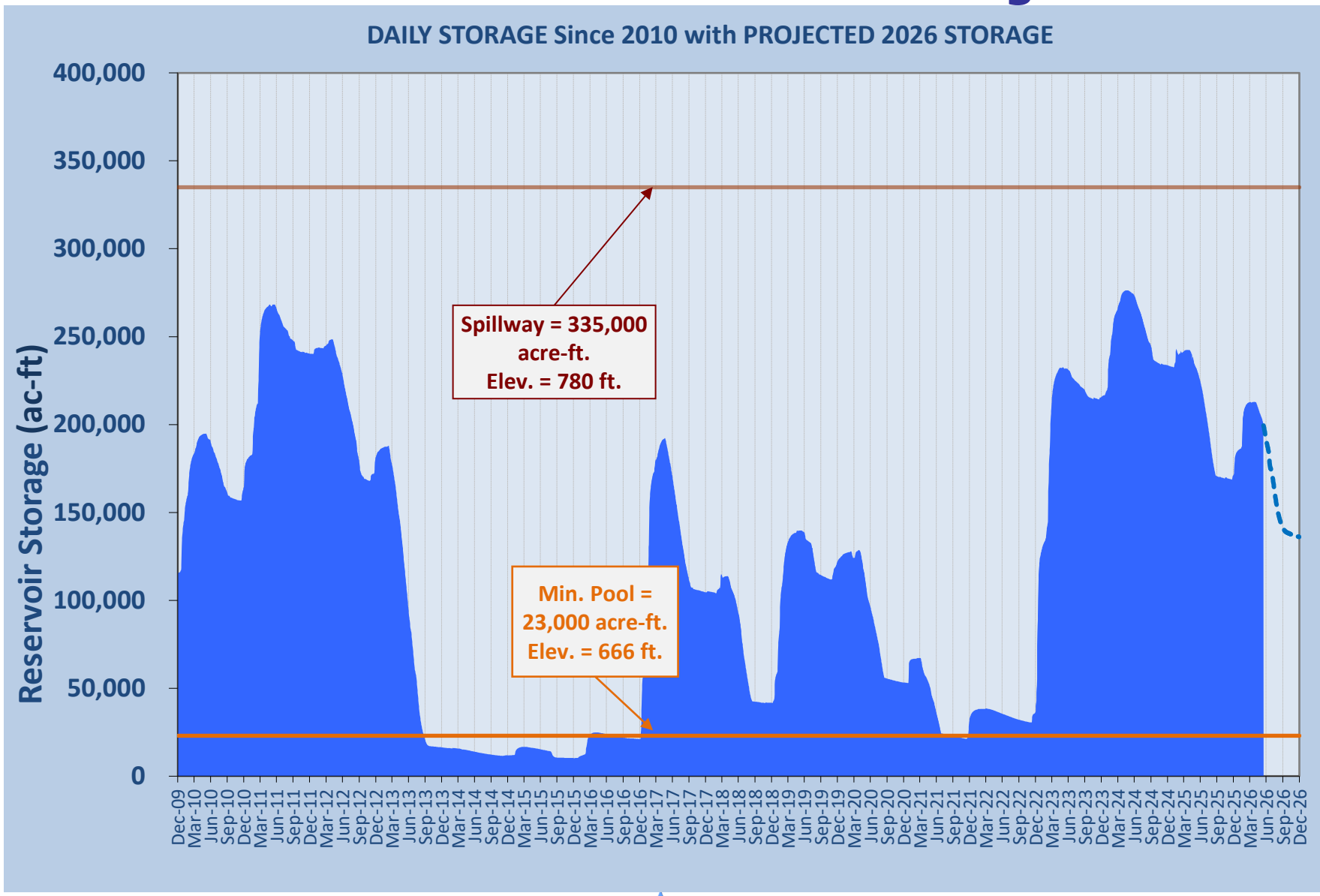
Other Considerations:

- Employee and Public Safety
- Varying Physical Operational Constraints
- Recreation
- Incidental Power Generation

Nacimiento Reservoir Storage

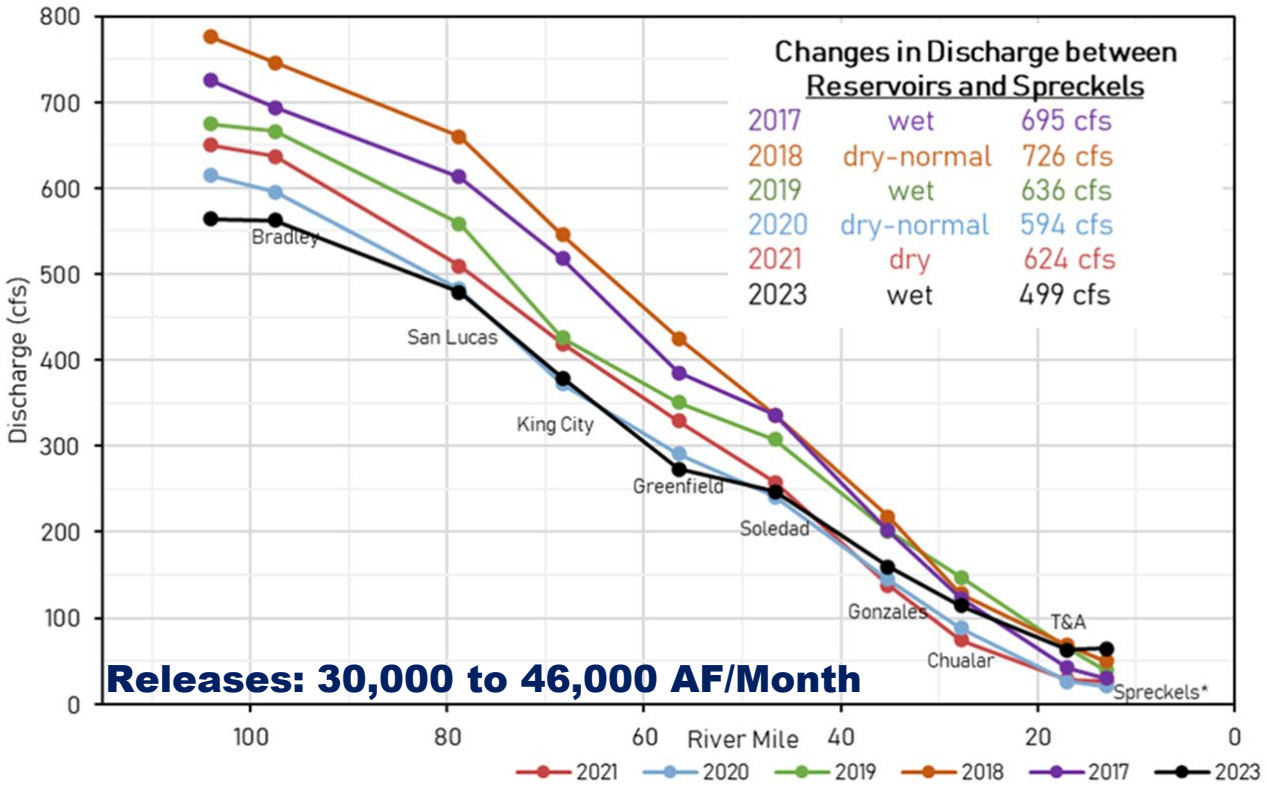


San Antonio Reservoir Storage



Nacimiento and San Antonio Dams and Reservoirs
CONSERVATION OPERATIONS

- Releases must be from stored water in reservoirs
- SRDF impoundment permitted: April 1st to October 31st
- Must maintain habitat management flows/water rights requirements



Other Projects Considered:
Interlake Tunnel and Spillway Modification

Overview: Project Components

Tunnel Intake Structure at Nacimiento Reservoir

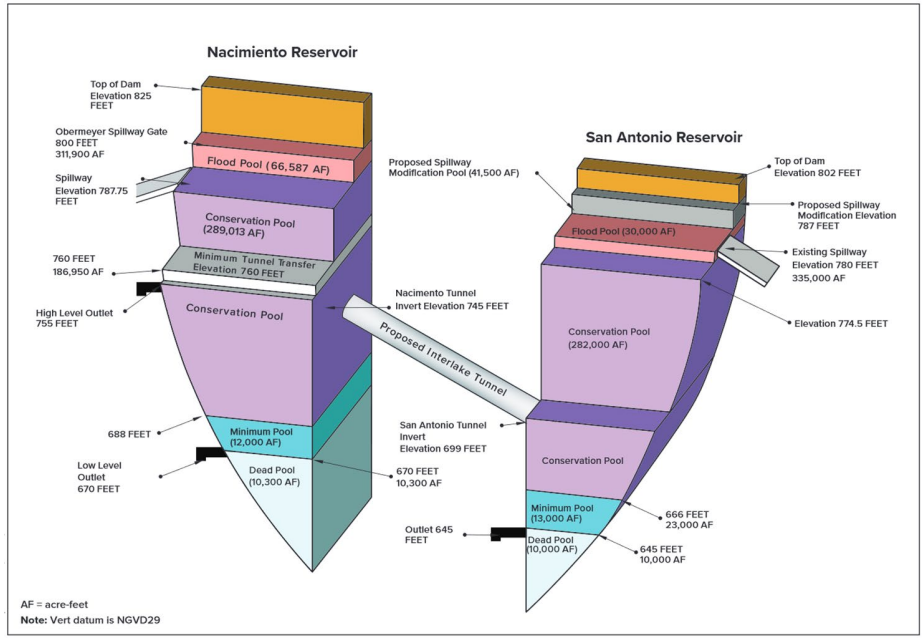
Interlake Tunnel linking the reservoirs

Energy dissipation structure at San Antonio Reservoir

Spillway modification at San Antonio Dam

Operation of the Interlake Tunnel may occur when certain conditions are met.

- Stage in Nacimiento Reservoir is above 760 feet and below 800 feet.
- Stage in San Antonio Reservoir is lower than stage in Nacimiento Reservoir.
- Stage in San Antonio Reservoir is not at or near the Flood Rule Curve.
- Modeled operations account for the rate of water transfer through the Interlake Tunnel, which varies with stage in both reservoirs.



The Interlake Tunnel and Spillway Modification project has multiple objectives.

- Increase available surface water supply by maximizing opportunities for water storage in both reservoirs
- Reduce releases during storm events
- Continue to provide surface water for wildlife passage and habitat
- Improve the hydrologic balance of the Salinas Valley Groundwater Basin, especially in dry years
- Protect agricultural viability and prime agricultural land
- Minimize impact on hydroelectric production

Summary of selected results for the Interlake Tunnel and Spillway Modification: Annual average, all water year types

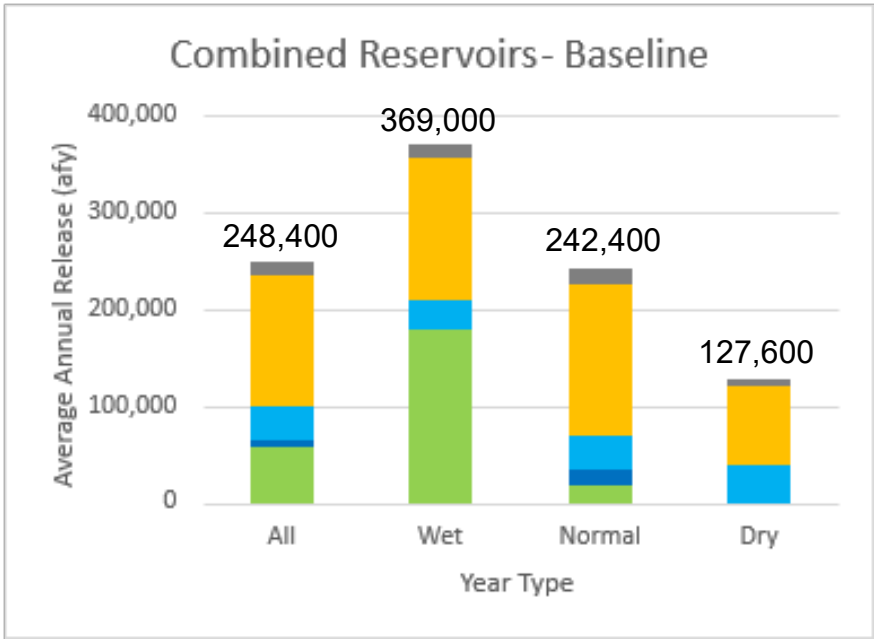
Description	Change With Project
Change in combined reservoir storage	+53,500 acre-feet
Water transferred through Tunnel	30,000 af/year
Change in non-flood control releases	+14,500 af/year
Change in flood control releases	-17,100 af/year

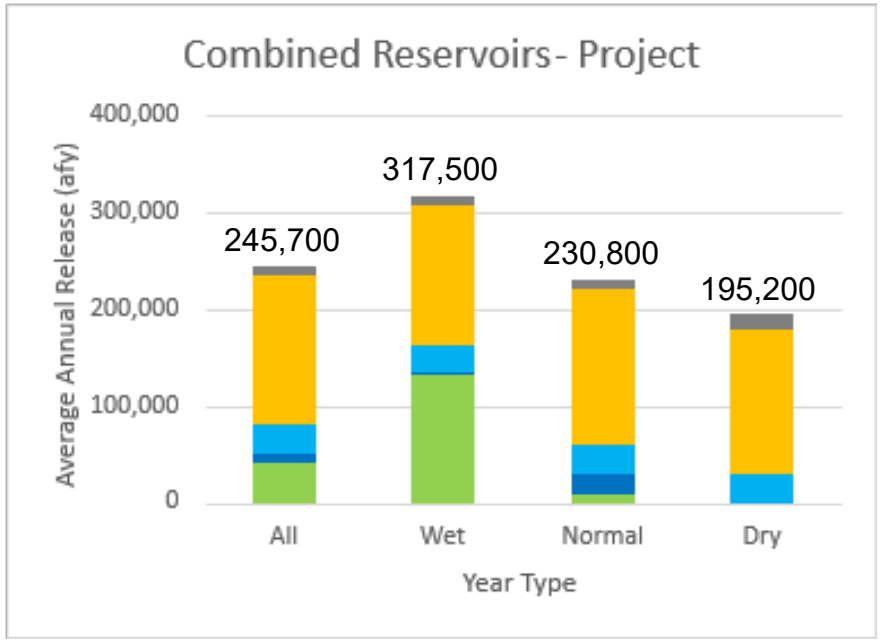
Differences are calculated from a baseline scenario.

Values greater than 1,000 have been rounded to the nearest hundred.

Tunnel transfers are simulated in 21 of 47 water years in the model period (45%) and occur primarily from January-May.

With the project, combined reservoir releases decrease in wet years and increase in dry years.





- Flood control releases
- Conservation releases
- Wildlife passage and habitat releases
- Over-release (modeling artifact)

Change in average annual releases from baseline, both reservoirs

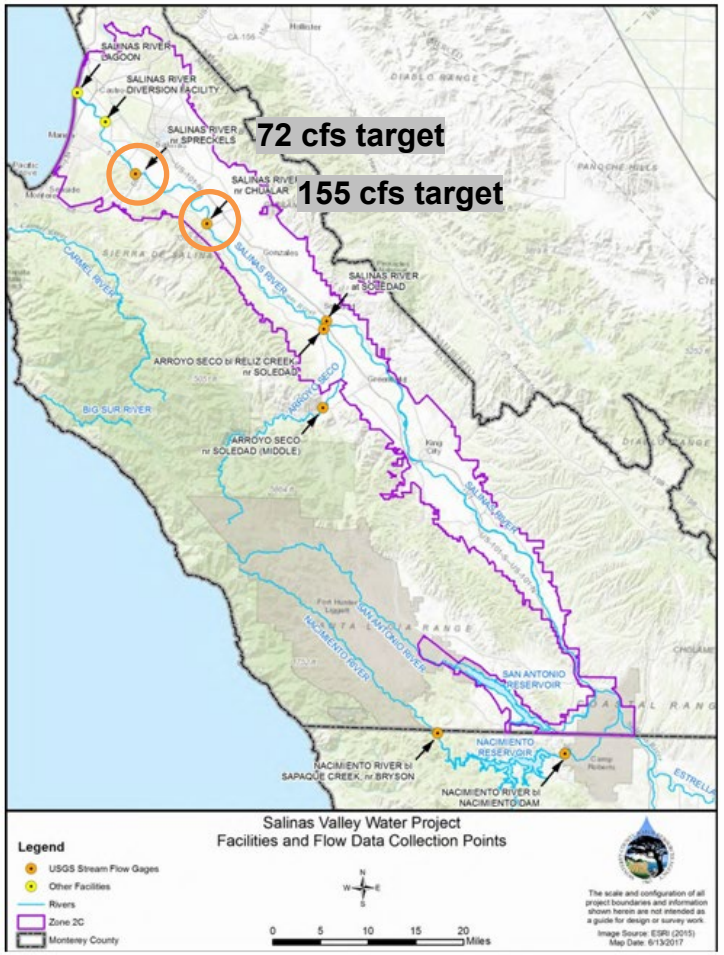
	All Year Types (AF)	Wet Years (AF)	Normal Years (AF)	Dry Years (AF)
Conservation releases	+19,300	-1,600	+5,000	+68,000
Flood control releases	-17,100	-45,000	-9,900	-8

Other Re-operations/Projects Considered: Winter Operations

Overview

Modeling a modified operational approach for Nacimiento and San Antonio Reservoirs to evaluate supplementing natural streamflow during the winter season.

The Winter Release Scenario, including operational criteria, was part of a Settlement Agreement between MCWRA and the Salinas Valley Water Coalition.

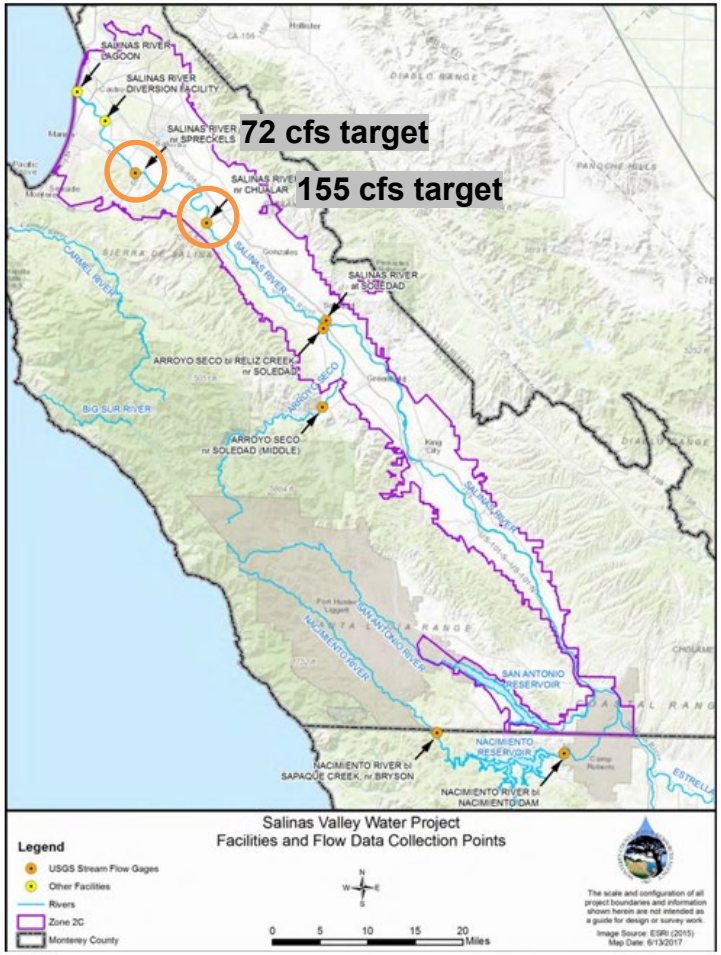


Other Re-operations/Projects Considered:
Winter Operations

Simulated changes to the operational approach included:

- Increased minimum operational storage in San Antonio Reservoir to provide carry-over storage.

- New streamflow triggers and downstream flow targets.



Other Re-operations/Projects Considered: Winter Operations

Results from MCWRA modeling

Reservoir releases	Reservoir storage	SRDF operations
• 8,000 AFY as Winter Releases • Corresponding decrease in conservation and flood control releases • Winter Releases occur in 87% of all years, averaging 21 days/year.	• Lower combined storage with Winter Releases (6,000 AFY) • Required carry over storage in San Antonio Reservoir results in slightly higher combined storage during very dry periods because SRDF operations are curtailed sooner	• Lower volume of SRDF diversions with Winter Releases (average of 100 AFY) • Largest difference in SRDF diversions in dry years: 700 AFY less with Winter Releases

Other Re-operations/Projects Considered: Winter Operations

Challenges:

- Planning and operating with less certain storage volumes
- Planning and operating with less certainty as to year type
- Operating through highly variable winter conditions
- Potential impacts on flood control efficacy
- Water rights allow releases from storage only
- Groundwater recharge can be less effective in winter vs. summer
- Natural flows are less likely before January

Other Projects Considered: Re-operations for HCP

Purpose of Habitat Conservation Plan (HCP) Modeling

Develop new reservoir operations protocol to meet the Agency's mission and obligations while minimizing effects to species covered under the HCP.

Guiding principles:

- Improve long-term hydrologic balance between recharge and withdrawal
- Provide a sufficient water supply to meet existing needs and to serve as the foundation to meet future water needs.

Other Projects Considered: Re-operations for HCP

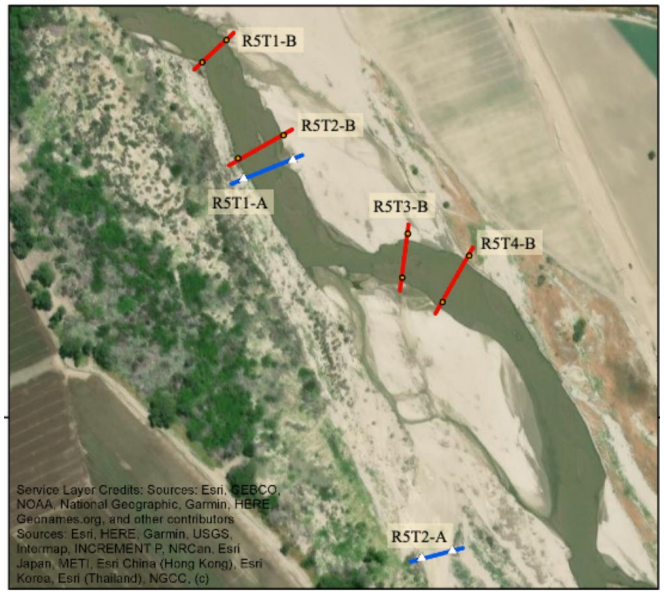
Components of the HCP Re-operation Protocols

- Flood control and prevention
- Groundwater recharge
- Existing water rights
- Physical outlet capacities
- Minimize effects to covered species

Other Projects Considered: Re-operations for HCP

The recommended re-operation protocols:

- Refine the existing flow prescription
- Are more biologically relevant and operationally feasible
- Use water more efficiently
- Incorporated modified passage flow targets
  - Critical riffle analysis established 80 cfs at the Salinas River near Chualar as an acceptable passage target for all steelhead life stages.
- Integrated the concept of *holding flows* for periods when streamflow dips below a passage threshold but still provides enough water for fish to avoid being stranded



Excerpt from the Critical Riffle Analysis report, showing the assessed transects at Reach 5 along the Salinas River near Soledad.

Summary

Most re-operations/projects the Agency has studied have focused on increasing the reliability of existing operations. For example:

- Managing storage capacity to capture large flood flows, attenuate peaks, and reduce downstream impacts
- Increasing annual carryover storage to allow for more/longer conservation seasons in subsequent years

There have been limited recent studies on re-operating MCWRA reservoirs to support new projects.

- This may require new feasibility studies and modeling efforts that reflect the current operations and demands in the system
- These could result in a reduction of water availability for existing projects

Using more winter water (or water at any other time) leaves less available other times of year, except in extreme wet years, which happen infrequently.

Questions?