# San Joaquin River Restoration Program

# Water Management Technical Feedback Meeting

Sacramento, CA

**September 16, 2016**

SAN JOAQUIN RIVER RESTORATION PROGRAM

# Agenda

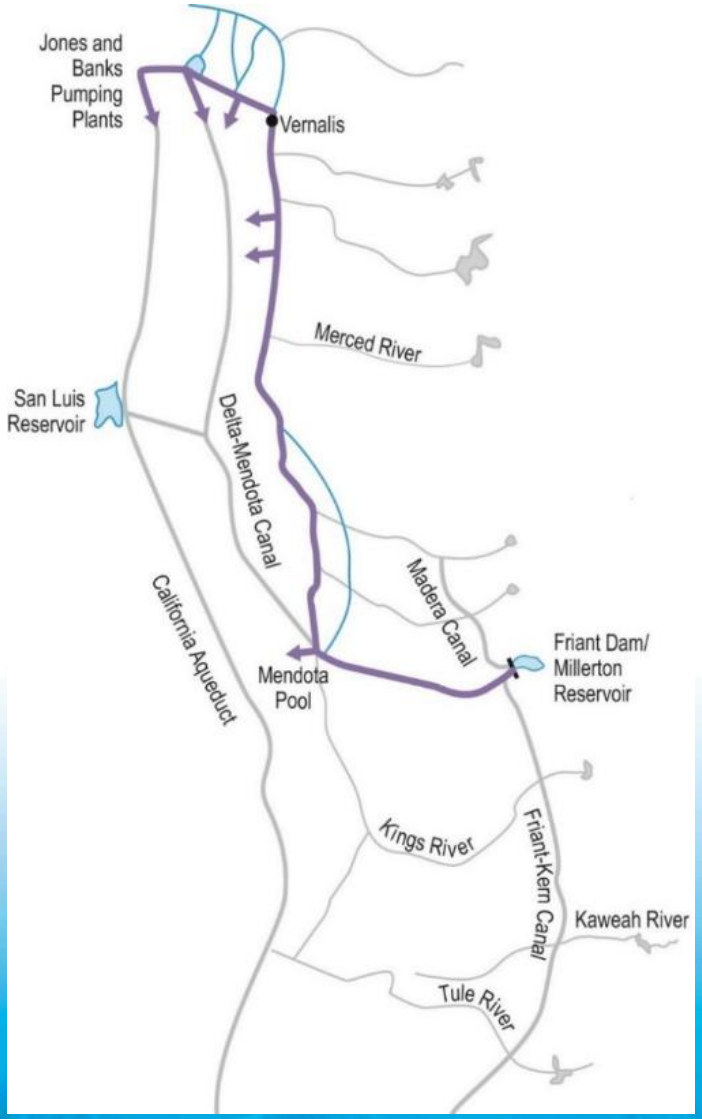
- Introductions
- Restoration Flows
- Unreleased Restoration Flows
- Recovered Water Account Balances
- 2016 Recapture/Recirculation
- Restoration Flows Guidelines v2.0
- WMG Project Updates
- Long-term Recapture/Recirculation of Restoration Flows EIS
- Adjourn

SAN JOAQUIN RIVER RESTORATION PROGRAM

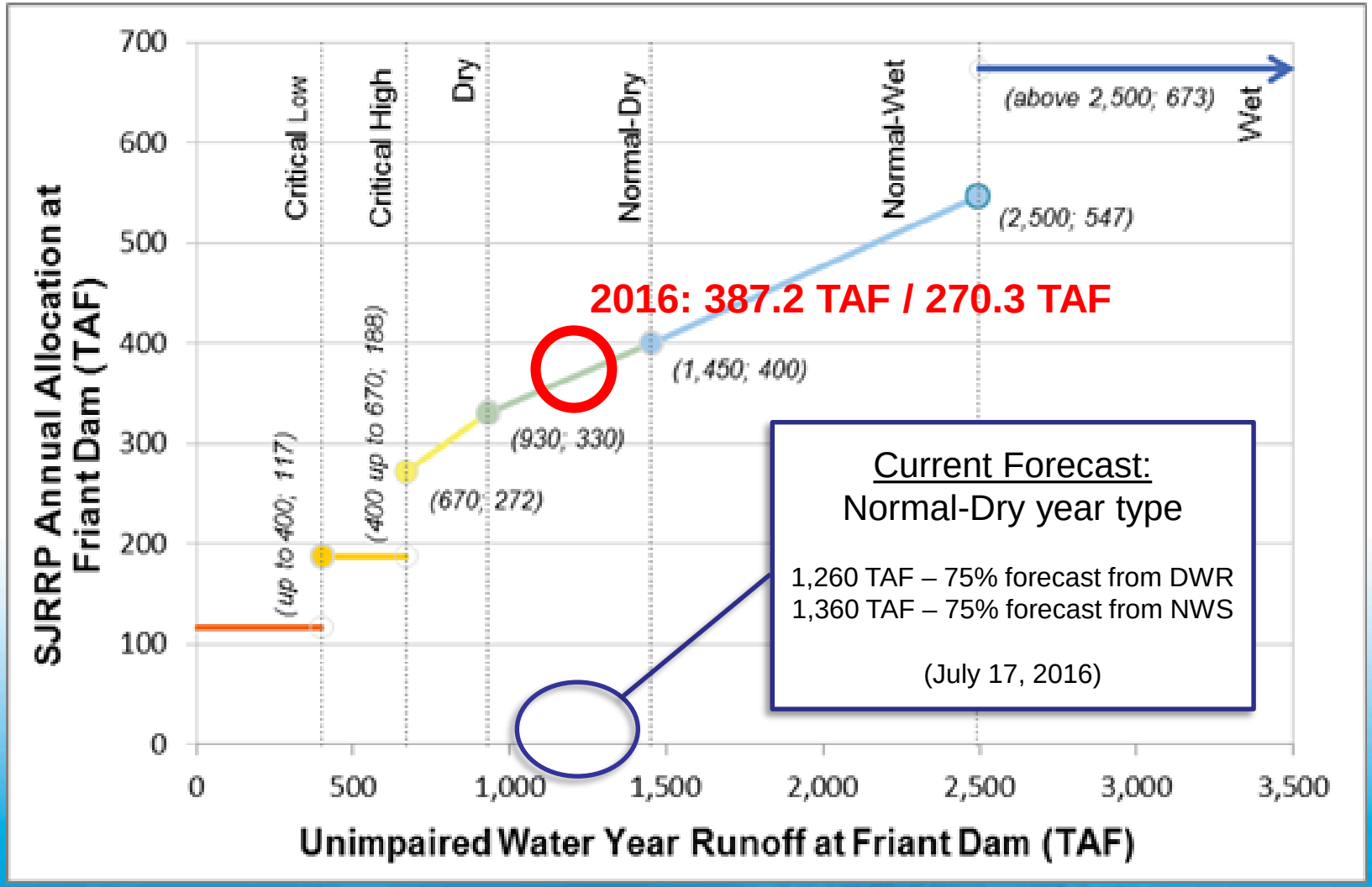
# 2016 RESTORATION FLOWS

# 2016 Restoration Year Actions

- ✓First Restoration Flows in 2+ years
- ✓Provisional Allocation due to South-of-Delta water supply shortfall
- ✓Pulse flows to test juvenile salmon capture and transport
- ✓Obstacles: Sand Removal, K-Rat, Mendota Pool maintenance
- ✓Nearly half of allocation became URFs
- ✓First flows below Sack Dam Aug 17
- ✓Recapture in lower SJR pending



# 2016 Restoration Year Type



# 2016 Restoration Allocation

- Provisional Restoration Allocation 1/26/16:
  - 9,445 AF through February 29
  - RA schedule of 2,380 AF (extended 2/22/16)
- Full Restoration Allocations

| | | |
|---|---|---|
| 3/18/16: | 261,400 AF | RA schedule 129,000 |
| 4/14/16: | 276,085 AF | RA schedule 144,224 |
| 5/31/16: | 266,932 AF | RA schedule 135,071 |
| 7/7/16: | 270,297 AF | RA schedule 131,861 |

- Final Restoration Allocation 10/1/2016:
  - Approximately 265,000 AF
  - RA schedule TBD

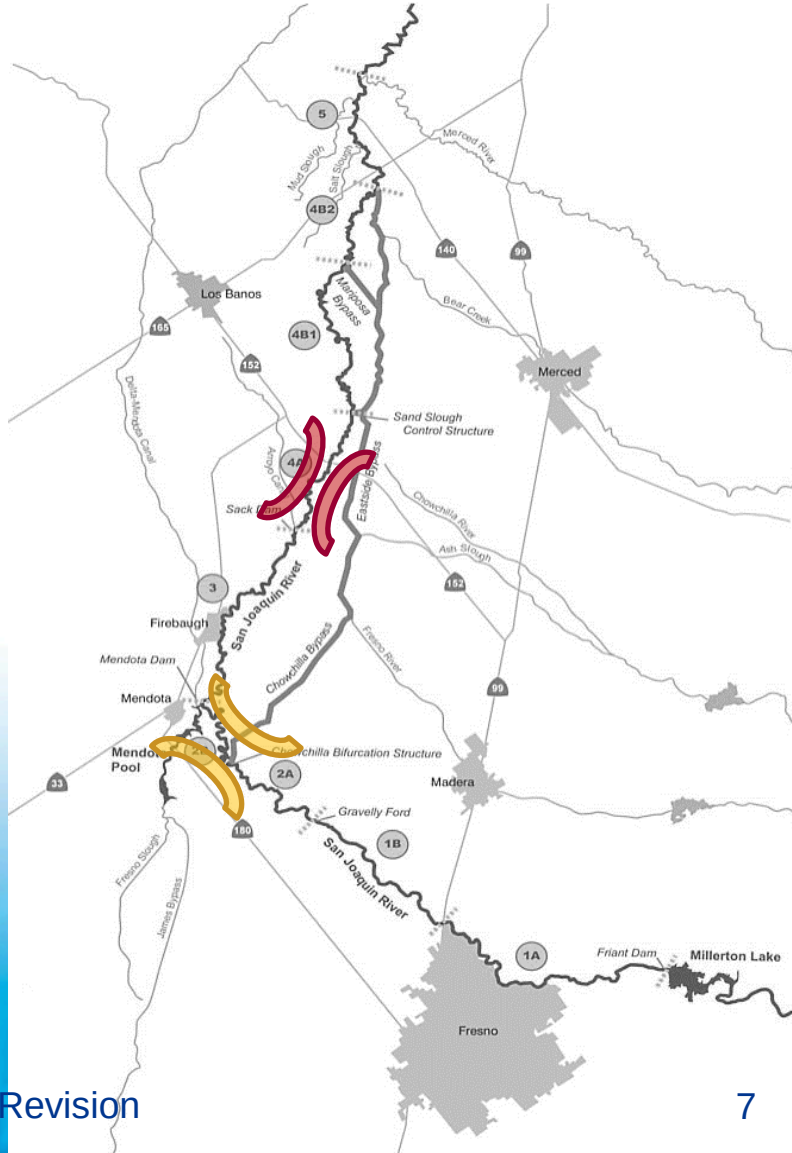
# Restoration Flow Constraints

**Reach 4: 70 cfs (300 cfs in late 2016)**

- Due to requirement (per Settlement Act) to protect adjacent lands from damage resulting from Restoration Flows

**Reach 2: 1,120 cfs**

- Due to seepage and levee stability challenges in Reach 2B caused by Restoration Flows
- SJRRP Reach 2B and Mendota Pool Bypass Project will allow for full conveyance of Restoration Flows



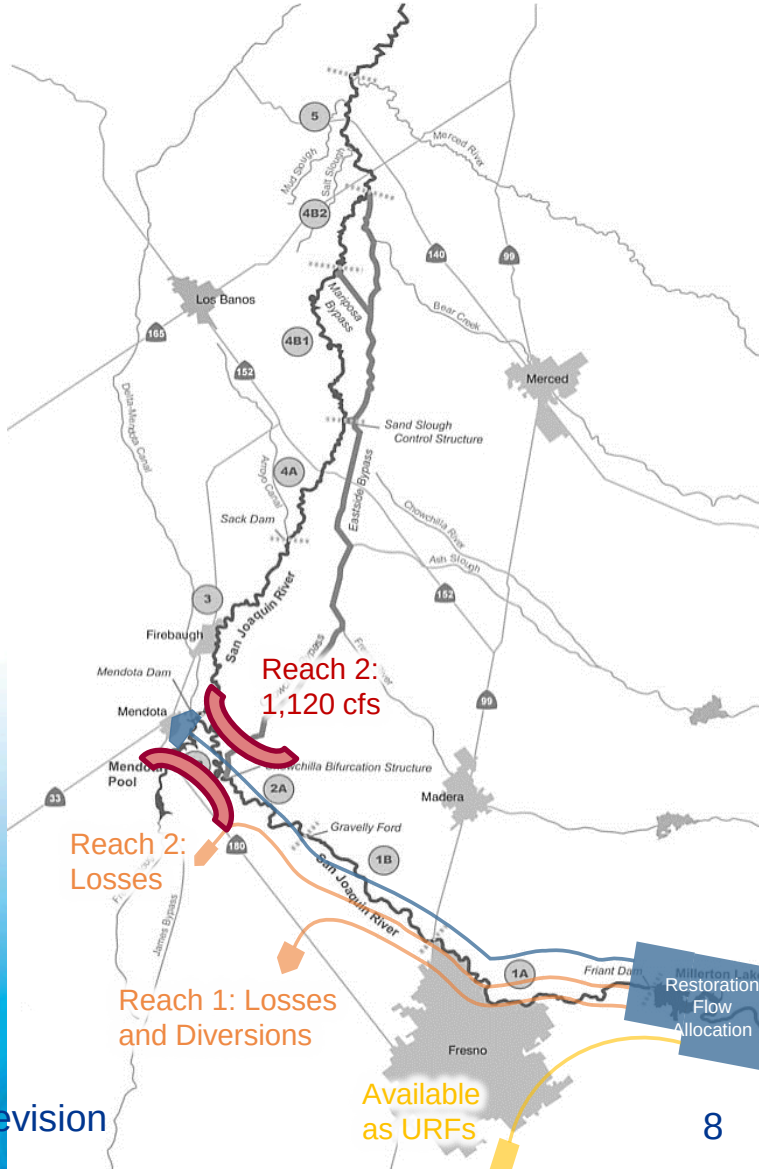
# Effects of Channel Constraints

## Limits full release of Restoration Flows from Friant Dam

- Losses and diversions in Reaches 1 and 2 plus the flow that can be conveyed through Reach 2
- Constraints in Reach 4B due to potential Fresno Kangaroo Rat habitat sightings

## URF Generation

- Restoration Flows that cannot be released from Friant Dam due to channel capacity constraints
- SJRRP is preparing for URFs by:
  - Completing environmental coverage
  - Securing agreements with Friant contractors to purchase/exchange URFs
  - Coordinating with Friant Dam Operations
- Managed to best achieve the Restoration Goal



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# 2016 UNRELEASED RESTORATION FLOWS

# 2016 URF Sales

- **Total estimated URF Volume: 139,294**
  - **19 TAF for Exchanges, 114 for Sales, 6 in Reserve**
  - **Tier 1:**
    - 85 TAF available late March
    - $60 / AF
    - Immediate delivery
  - **Tier 2:**
    - 4.5 TAF available late May (Block 1)
    - 19 TAF available in June (Block 2)
    - $150 / AF
    - Schedulable
    - Anticipate Block 3 ~ 12 TAF (schedulable or carryover)

# 2016 URF Exchanges

- **Reclamation wrapping up three exchange agreements**
  - **OCID**
    - 3 TAF
    - Return to Millerton between 2018 and 2021
  - **FID**
    - 8 TAF
    - Return to Millerton between 2018 and 2021
  - **AEWSD**
    - 7 TAF
    - Return to Millerton or San Luis Reservoir between 2018 and 2021

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# Questions?

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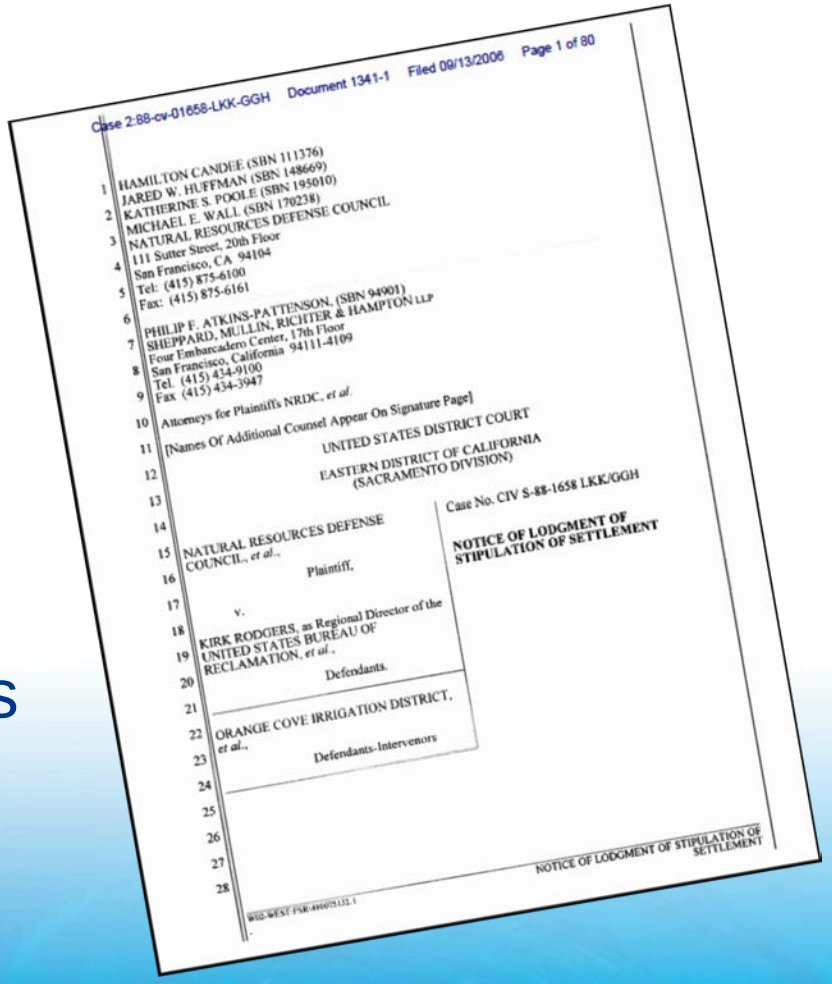
# RECOVERED WATER ACCOUNTING & BALANCES

# Settlement Paragraph 16(b)

- Implement a Recovered Water Account and program "… for the purpose of reducing or avoiding the impact" of Restoration Flows
- Monitor and record reductions in water deliveries that have not been replaced or offset
- "establish a baseline condition as of the Effective Date of this Settlement with respect to water deliveries for the purpose of determining such reductions."



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UNITED STATES DISTRICT COURT

EASTERN DISTRICT OF CALIFORNIA
(SACRAMENTO DIVISION)

NATURAL RESOURCES DEFENSE COUNCIL, *et al.*,

Plaintiff,

v.

KIRK RODGERS, as Regional Director of the UNITED STATES BUREAU OF RECLAMATION, *et al.*,

Defendants.

ORANGE COVE IRRIGATION DISTRICT, *et al.*,

Defendants-Intervenors

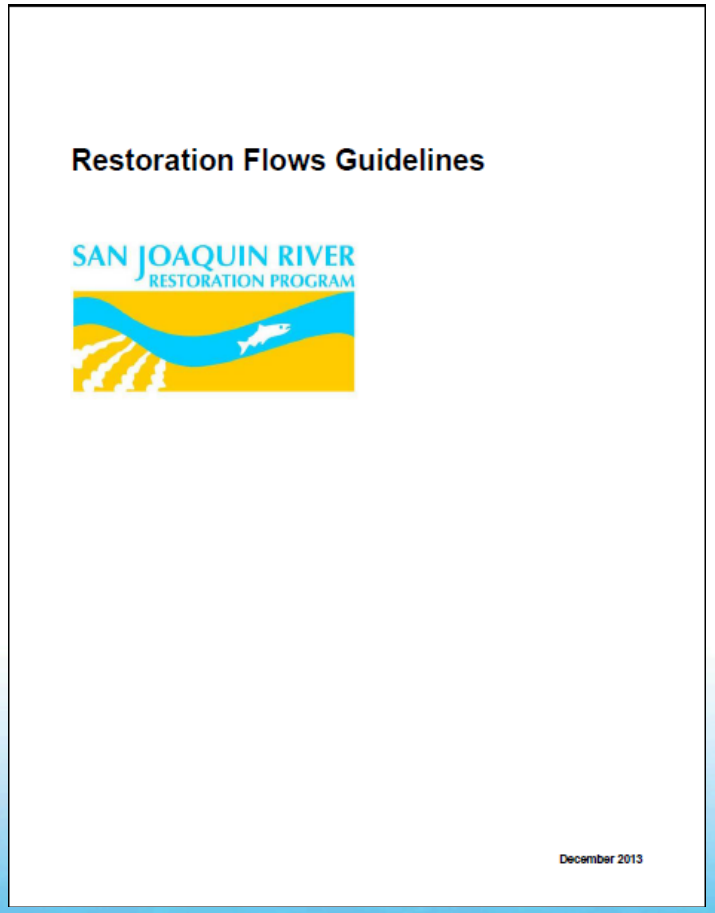
Case No. CIV S-88-1658 LKK/GGH

**NOTICE OF LODGMENT OF STIPULATION OF SETTLEMENT**

NOTICE OF LODGMENT OF STIPULATION OF SETTLEMENT

# Reduction in Water Deliveries

- 7 Step process described in Restoration Flows Guidelines Appendix H
- Model considers:
  - Baseline w/o Restoration Flows
  - Holding contract requirements
  - Friant's ability to take flood water (Water Use Curve)
  - Flood spills that would have occurred
  - Contract amount



# Friant-Wide Impacts (AF)

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| TOTALS | 40,755 | 60,192 | 59,732 | 179,313 | 170,561 |

# Settlement Mitigation Tools

- Recirculation, recapture, reuse, exchange or transfer pursuant to Paragraph 16(a)
- Programs or projects undertaken or funded by a Federal or State of California Agency specifically to mitigate water delivery impacts of Restoration Flows
  - PL 111-11, Title X, Subtitle A, Part III Projects
- $10 water pursuant to Paragraph 16(b)(2)

# Friant-Wide Offsets (AF)

| | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|
| **Recirc** | 49,963 | 35,740 | 100,016 | 44,445 | 41,664 |
| **RWA** | | 431,086 | | | |
| **URFs** | | | | | 11,101 |

# RWA Credit Transfers

- Only Friant Contractors may have RWA credits
- Can transfer credits only to other Friant Contractors
- Provide Reclamation written notification of credit transfers

# RWA Balances

San Joaquin River Restoration Program Recovered Water Account Remaining Credits by Contractor - August 2, 2016

| Contractor | RWA Impact (calculated) 2009 | 2010 | 2011 | 2012 | 2013 | 2014 & 2015 | RWA Credits Allocated Jun-10 | Dec-10 | Feb-11 | April 2011 Advance | Recirculation (-) 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | RWA $10 Water (-) | 2014 URF Water (-) | Transfers In (+) | Transfers Out (-) | RWA Credits Remaining calculated impact | RWA Credits Remaining allocated credits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arvin-Edi VSD | 9,063 | 13,386 | 13 | 8,966 | 8,528 | - | 18,335 | 17 | 3,343 | 84,854 | 9,774 | 1,679 | 5 | 8 | 2,075 | 15 | 168 | 474 | | 16,408 | 15,421 | 96,071 |
| Chowch | 4,653 | 6,82 | | | 11,726 | - | 9,412 | | 0 | 47,920 | 5,017 | 4,791 | | | 3,076 | | 52 | 51 | | | (50,2 | (19,526) |
| City | - | - | | 48 | 12,792 | - | - | | | 7,590 | - | - | | | 5,227 | | | | | | 1 | (54) |
| City of I | - | - | | 60 | 533 | - | - | | | 316 | - | - | | 5 | 257 | | | 0 | | | | (237) |
| City of C ve | - | - | | 14 | 298 | - | - | | | 177 | - | - | | | - | | 2 | 0 | | | | (900) |
| County c | - | - | | 45 | 43 | - | - | | | 25 | - | - | | | - | | 2 | | | | | 23 |
| Delano-I ID | 2,166 | 3,200 | | 37 | 23,196 | - | 4,383 | | 9 | 32,836 | 2,830 | 1,915 | 1 | | 8,790 | | 3 | 4, | | | (14 | 6,203) |
| Exeter II | 553 | 816 | | 78 | 2,367 | - | 1,118 | | 3 | 6,319 | 760 | 22 | | | 128 | | 1 | | | 870 | (2 | (532) |
| Fresno C 18 | - | - | | 34 | 32 | - | - | | | 19 | - | - | | | - | | 5 | | | | | (66) |
| Fresno I | 2,181 | 3,221 | | | - | - | 4,412 | | 1 | 19,201 | 3,000 | 1,928 | | | - | | 7 | | | | | 1,483 |
| Garfield | - | - | | 34 | 746 | - | - | | | 443 | - | - | | | 356 | | | 1 | | | | (411) |
| Gravelly | 407 | 601 | | | - | - | 824 | | 9 | 3,584 | 500 | 360 | | | - | | 6 | | | | (5 | 1,229) |
| Hills Va | - | - | | | 267 | - | - | | | - | - | - | | | 127 | | 5 | | | | | (142) |
| Internati | | | | | | - | | | 52 | | | | | | | | 6 | 4 | | | | (9) |
| Ivanhoe | | | | | | - | | | 0 | | | | | | | | 5 | 7 | | | | 1,607 |
| Kaweah ID | | | | | | - | | | | | | | | | | | 6 | 4 | | | (2 | (751) |
| Kern-Tu | | | | | | - | | | | | | | | | | | | | | | | - |
| Lewis C | | | | | | - | | | 3 | | | | | | | | | 4 | | | | (142) |
| Lindmor | | | | | | - | 1,294 | | 2 | 9,807 | 69 | 565 | | | - | | 7 | | 3, | | (1 | 5,623) |
| Lindsay- e ID | | - | | 64 | 5,863 | - | - | | | 3,479 | - | - | | | - | | 7 | | | | 4 | 4,165) |
| Lower T ID | 6,921 | 10,222 | | 17 | 13,048 | - | 14,001 | | 39 | 68,674 | 9,131 | 9,942 | | | 2,594 | | 8 | | 48, | 000 | (41 | 0,424 |
| Madera I | 5,409 | 7,989 | | 62 | 18,122 | - | 10,942 | | 3 | 58,372 | 7,440 | 4,782 | | | 3,236 | 32 | 6 | 6, | | 000 | (50 | 0,884) |
| Orange C | - | - | | 36 | 8,358 | - | - | | | 4,959 | - | - | | | 1,923 | | 4 | | | | 3 | 8,604) |
| Portervil | 872 | 1,288 | | 36 | 3,198 | - | 1,765 | | 4 | 9,704 | 201 | 3,339 | | | 1,388 | | 8 | | | | (4 | (92) |
| Saucelit | 954 | 1,409 | | 62 | 4,520 | - | 1,929 | | 4 | 11,079 | 1,230 | 38 | | | 2,479 | | 6 | | | | (13 | 0,117) |
| Shafter-V | 1,152 | 1,701 | | 07 | 10,660 | - | 2,330 | | 5 | 16,463 | 1,600 | 3,018 | | | 2,659 | | 6 | 2, | 2, | | (3 | 6,736) |
| So San J UD | 1,454 | 2,147 | | 42 | 20,681 | - | 2,941 | | 1 | 25,071 | 2,000 | - | 1 | | 4,777 | | 1 | 9 | | 996 | (10 | 5,676) |
| Stone Co | - | - | | 41 | 2,132 | - | - | | | 1,265 | - | - | | | 122 | | | | | | 2 | (857) |
| Teapo | - | - | | 31 | 1,599 | - | - | | | 949 | - | - | | | - | | 8 | 5 | | | 1 | (817) |
| Terra Be | - | - | | 30 | 6,183 | - | - | | | 3,669 | - | - | | | 3,104 | | | | | | | 98) |
| Tri-Valley | - | - | | | 85 | - | - | | | - | - | - | | | 41 | | | 5 | | | | (46) |
| Tulare ID | 4,100 | 6,056 | 6,0 | 6,724 | 6,396 | - | 8,294 | 7,84 | 6,036 | 39,893 | 5,410 | 3,361 | 3,854 | 3,113 | - | | 2,070 | | | | (48,522 | (15,738) |
| TOTALS | 40,755 | 60,192 | 59,732 | 179,313 | 170,563 | - | 82,445 | 77,999 | 59,997 | 460,000 | 49,963 | 35,740 | 100,016 | 44,445 | 41,664 | 47 | 431,086 | 11,101 | 70,274 | 70,274 | (203,507) | (33,621) |
| | | | | total calculated impacts = | 510,555 | | total allocated credits = | | | 680,441 | | | total recirculated = | | 271,875 | | | | | | | |

Contractors

Calculated Impact

Allocated Credits

Recirculation

RWA $10 Water

2014 URF Water

Credit Transfers

Credits Remaining

# RWA True Up

- Friant Contractors to review spreadsheet and provide edits by end of October 2016
- Updates to RWA impact model methodology to be addressed in spring/summer 2017
- In the mean time, all Friant Contractors will be able to participate in URF and 16(b) water programs.

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# 2016 RECAPTURE & RECIRCULATION

# Recapture and Recirculation

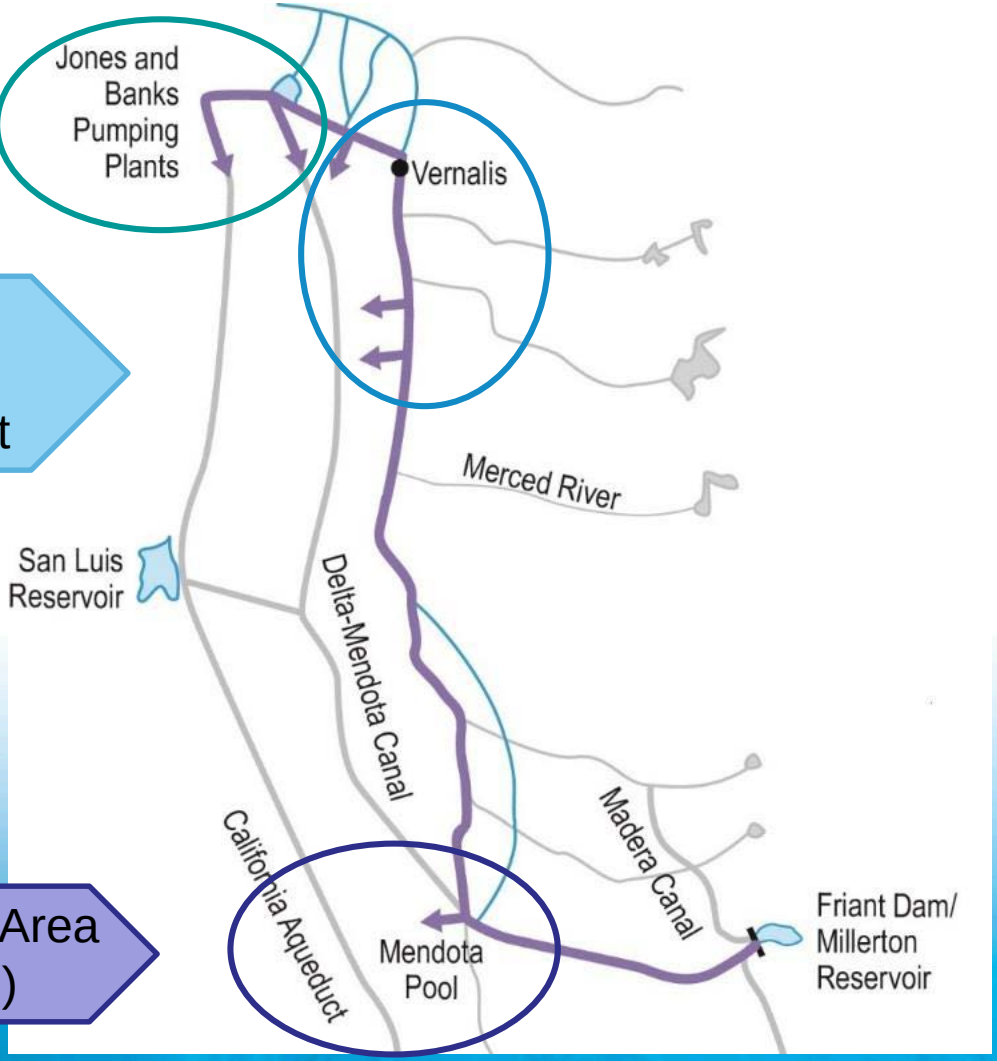
- Paragraph 16(a) of the Settlement authorizes and directs the Secretary to develop a plan for recirculation, recapture, reuse, exchange, or transfer of Restoration Flows (R&R Plan) to achieve the Water Management Goal
- Constraints:
  - No adverse impact on Restoration Goal, downstream water quality or fisheries
  - Cannot adversely impact contractual obligations
  - Subject to use of CVP facilities for SOD Project water
  - Subject to COA, including any agreement to resolve conflicts

# 2016 Recapture Locations

South-of-Delta Facilities

Lower San Joaquin River:
- Patterson Irrigation District
- Banta-Carbona Irrigation District

In the Restoration Area (Mendota Pool)



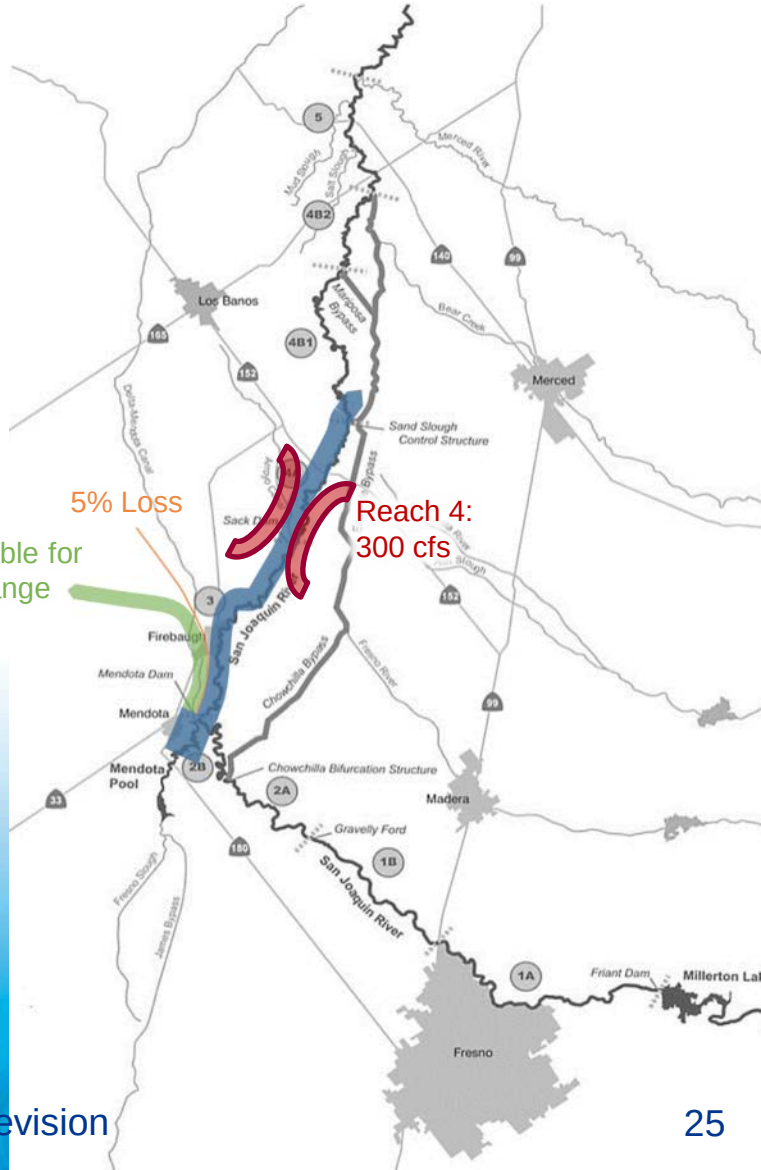
# Mendota Pool Recapture

## Restoration Flows Available

- Limited to flows originating at Friant Dam
- Less 5% operational loss
- Less flows conveyed past Sack Dam
- Less Exchange Contractor deliveries

## Recapture Opportunities

- San Joaquin Exchange Contractors



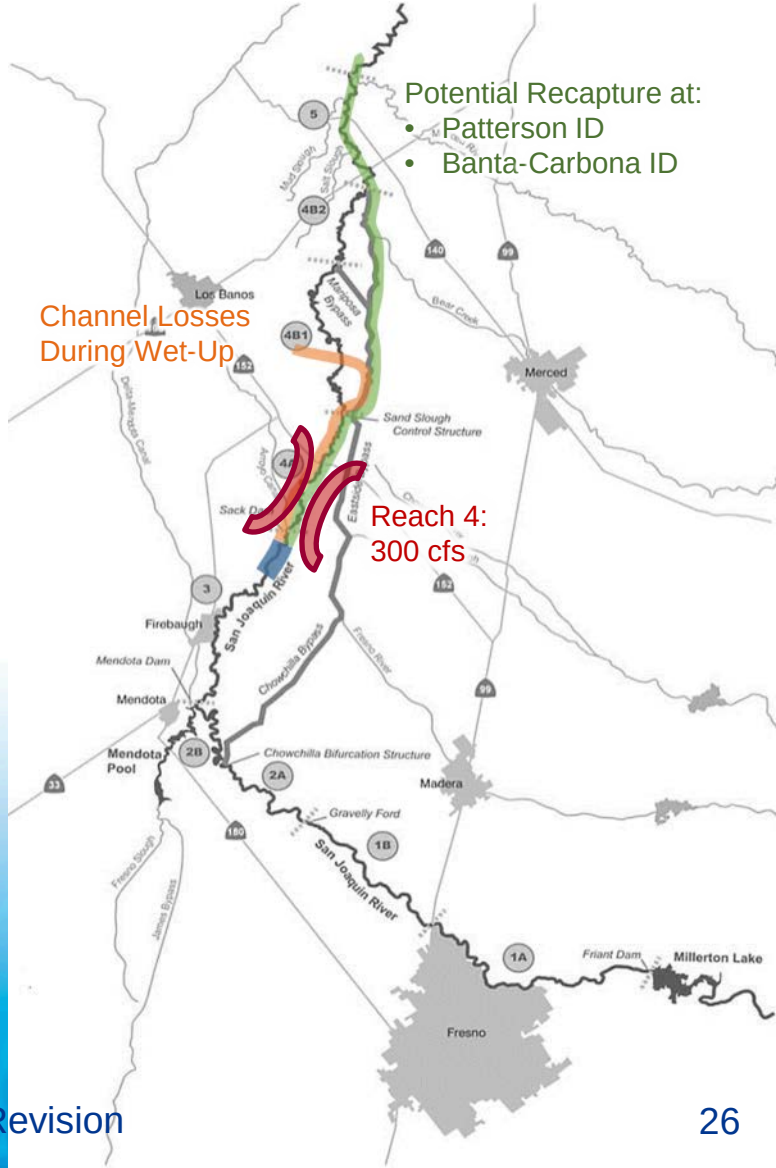
# Lower San Joaquin River Recapture

## Restoration Flows at Merced River Confluence

- Releases from Sack Dam minus wet-up losses in Reach 4 and Eastside Bypass

## Recapture Opportunities

- Patterson ID maximum ~40 cfs
- Banta-Carbona ID maximum ~65 cfs
- Limited by in-district use of facilities
- SJRRP obtained environmental coverage and temporary point of diversion
- Friant Contractors obtained agreements to cover wheeling costs

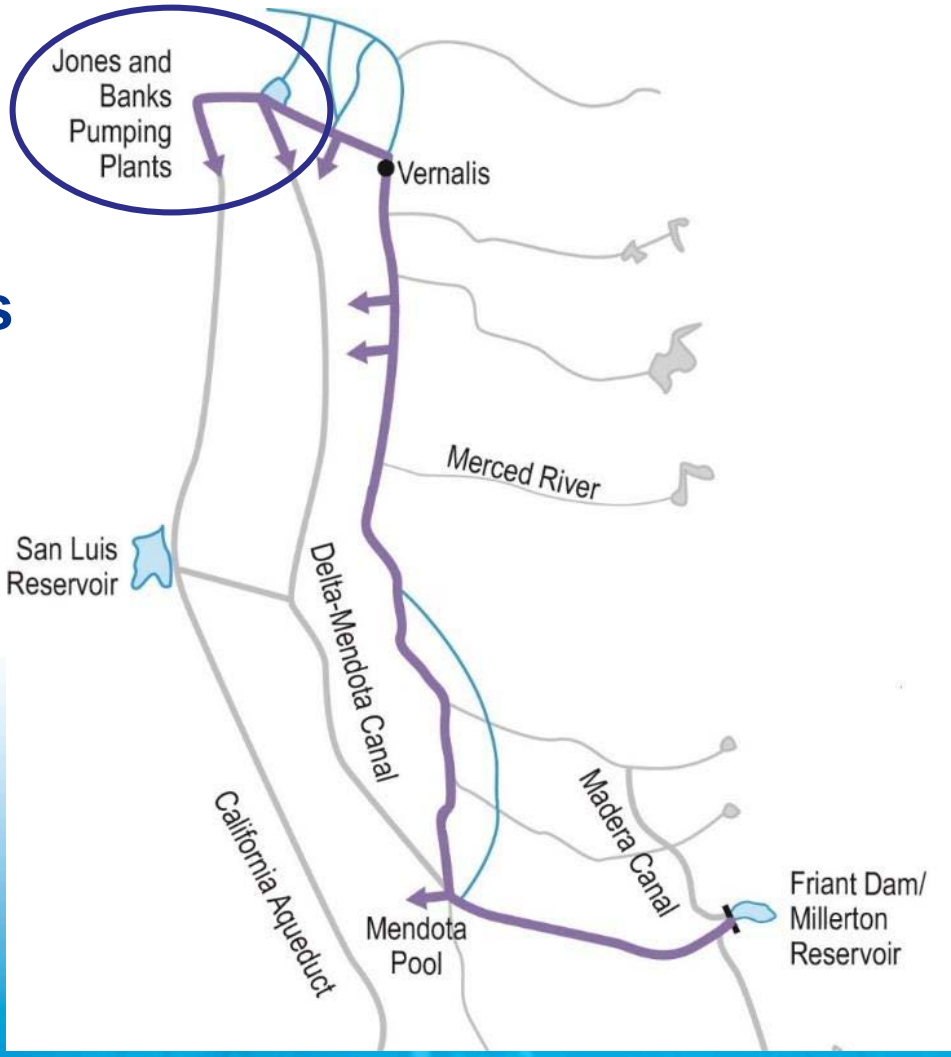


# Recapture at the Delta Facilities

**Restoration Flows** remaining after any recapture on the lower San Joaquin River

**Recapture at CVP/SWP Pumps**

- Subject to use for SOD CVP (per Settlement Act)
- Subject to USBR and DWR compliance with BiOps and D-1641 objectives
- SJRRP PEIS/R provides project-level environmental coverage



# Stored 2013 Restoration Flows

| Entity | Amount originally stored | Amount Available in 2016 | Amount Remaining |
|---|---|---|---|
| Meyers Water Bank | 1,068 | 768 | 0 |
| CCID | 2,860 | 2,860 | 0 |
| James ID | 2,753 | 0 | 2,753 |
| **Total** | **6,681 AF** | **3,628 AF** | **2,753 AF** |

Allocated pro rata to Class 1 contractors

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# Recaptured 2016 Flows

| Month | SJRRP* | Other Transfers to Exchange Contractors |
|---|---|---|
| July | 1,148 | 4,409 |
| August | 2,945 | 8,569 |
| September (thru 9/11/2016) | 1,065 | 0 |
| **Total** | **5,158**** | **12,978** |
| Projected recapture (remaining thru 2/28/2017) | +32,000 | 0 |

* Includes 5% loss at Mendota Pool,
**Allocated pro rata to Class 1 contractors

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# RESTORATION FLOWS GUIDELINES v2.0

# RFG 2.0

**Process**

- ✓Kickoff Meeting Aug 23 created recommended topics for revision and prioritized tasks
- Small Workgroup will meet Oct 4 through Nov to draft specific revisions
- Version 2.0 will be approved in January 2017
- Remaining revision topics will be readdressed in Summer and Fall of 2017

# RFG 2.0

**Priority Revision Areas**

- Forecasting
  - Exceedance % (Option 1D)
  - Merge SJRRP and SCCAO forecasting techniques
- Flexible Flow Provisions for Restoration Administrator
  - Moving flows within and between seasons (transfers within the hydrograph)
  - Test for non-impact to Friant water supply
  - Adjustment of base flows
  - Flexibility with Unreleased Restoration Flows

# RFG 2.0

**Other Revision Areas (2017+)**

- Recovered Water Account
  - Adjust impact calculation to include URFs
  - Clarify Warren Act Contracts, non-CVP
- Gravelly Ford Flow Compliance
- Buffer Flows
- Flood Flow Management

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# WATER MANAGEMENT GOAL PROJECTS

# Canal Capacity Restoration

**Friant Kern Canal**

- Project on hold to determine next steps

**Madera Canal**

- Feasibility Report and NEPA analysis underway
- Settling Party draft - October 2016
- Public Draft EA - Spring 2017

# FKC Reverse Flow Pump-Back Project

- $2.3M in drought funding announced in February 2015
- Additional $1M drought funding announced in 2016
- Financial Assistance Agreement awarded to FWA in August 2016

# Groundwater Financial Assistance

## Tulare ID - Cordeniz Basin Construction & Exchange Program

- 80-acre basin
- Groundbreaking: December 2015
- Complete: May 2017

# Groundwater Financial Assistance

**Pixley ID - Joint Groundwater Bank**

- 560-acre bank with 4.5 mile pipeline to new FKC turnout
- Financial Assistance approved; Revised Draft EA - early 2017

**Porterville ID - In-Lieu Project**

- Area 1:  1,450 acres connected to Wood-Central Ditch
- Area 2:  720 acres connected to FKC
- Financial Assistance awarded 9/15/16, Enviro. Complete

**Shafter-Wasco ID - Madera Avenue Intertie**

- 270-acre groundwater recharge basin at Kimberlina Rd.
- Financial Assistance in review, award date 11/2016
- Draft EA public comment period ends 9/20/16

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# LONG-TERM RECAPTURE AND RECIRCULATION OF RESTORATION FLOWS EIS

# Introductions

- Bureau of Reclamation, SJRRP
  - Kellye Kennedy, NEPA Project Manager
- CDM Smith
  - NEPA Consultant Team
  - Chris Park, Project Manager

# Overview

- Initial Alternatives Under Consideration
- Preliminary Evaluation of Initial Alternatives' capacity to Recapture and Recirculate
- Next Steps and Schedule

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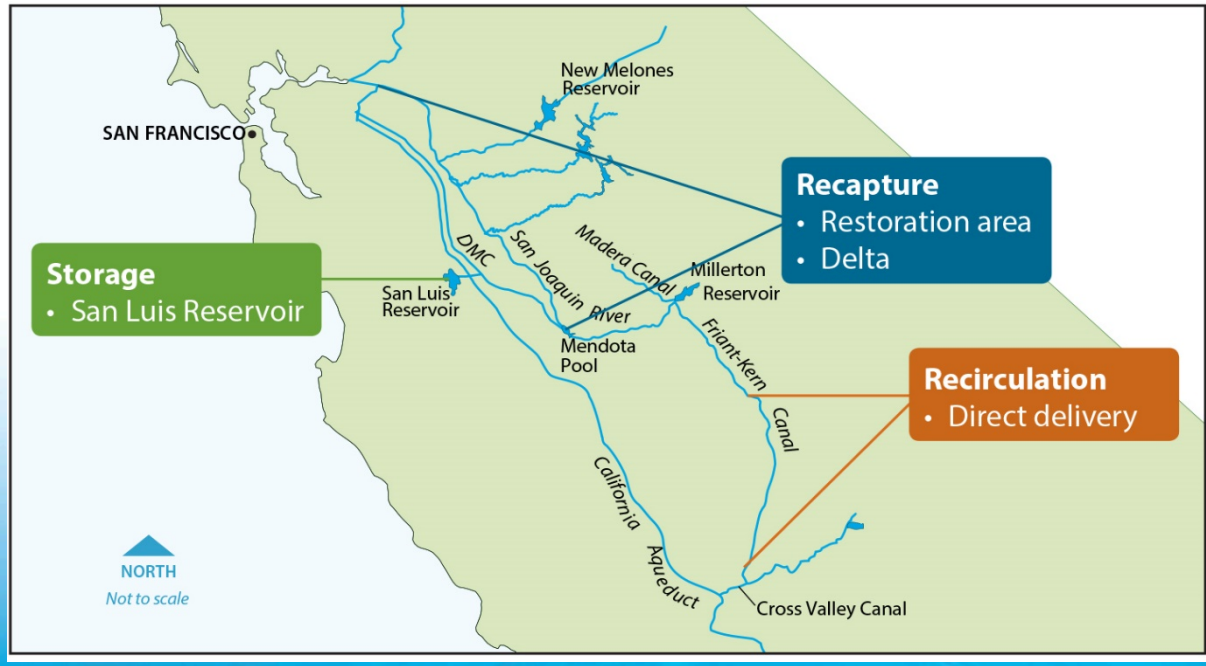
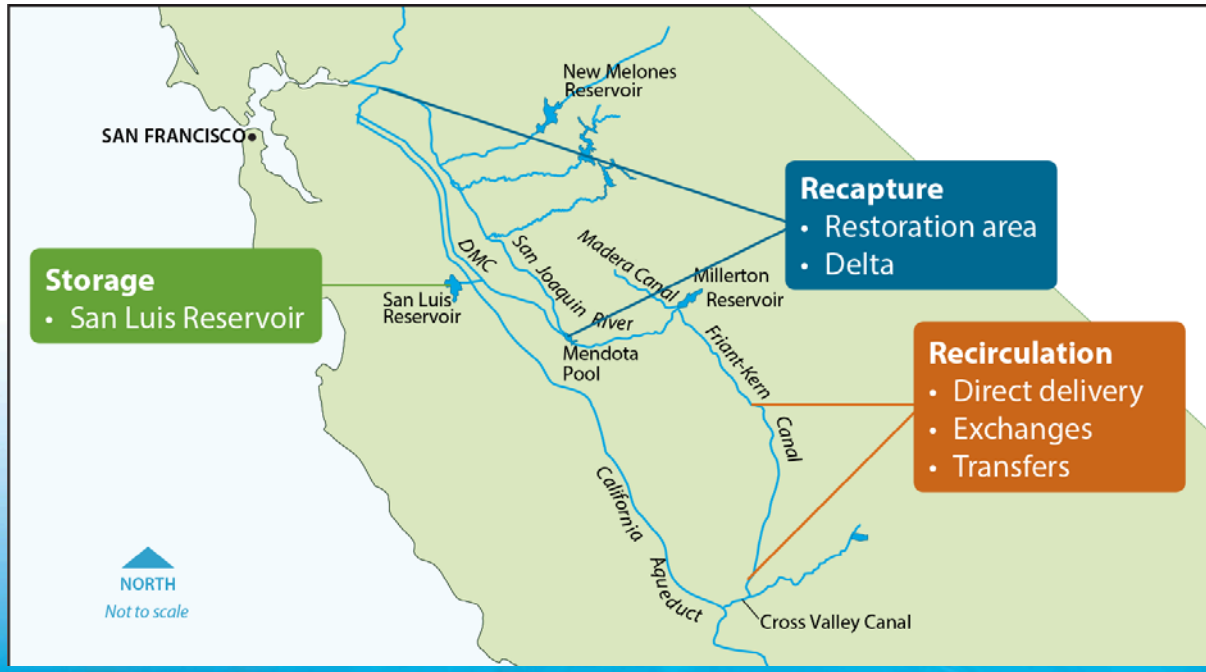
# Alternative 1 – No Action

- Reflects conditions if no further Federal action was taken to expand recapture and continue recirculation over the long-term
- Includes elements analyzed at a project level in the PEIS/R and other ongoing efforts



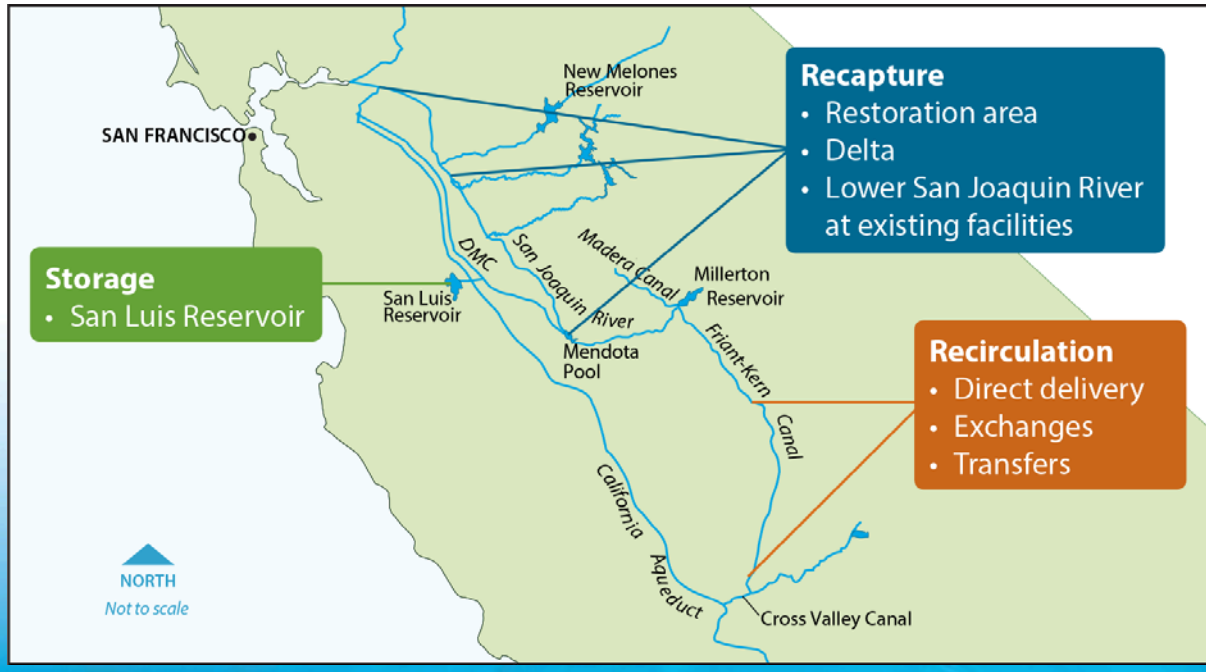
# Alternative 2 – Continue Existing Recirculation Actions

- Adds Recirculation to the Friant Contractors via exchange and/or transfer



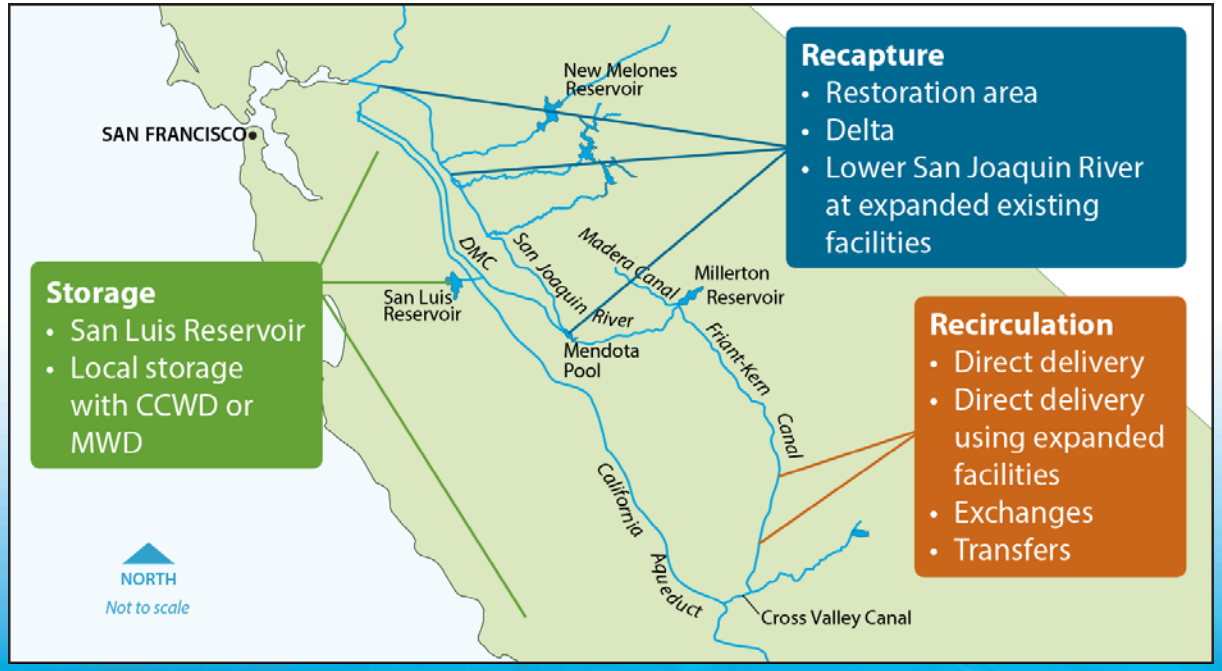
# Alternative 3 – Maximize Use of Existing Facilities

- Adds Recapture at West Stanislaus Irrigation District, Patterson Irrigation District, and Banta Carbona Irrigation District



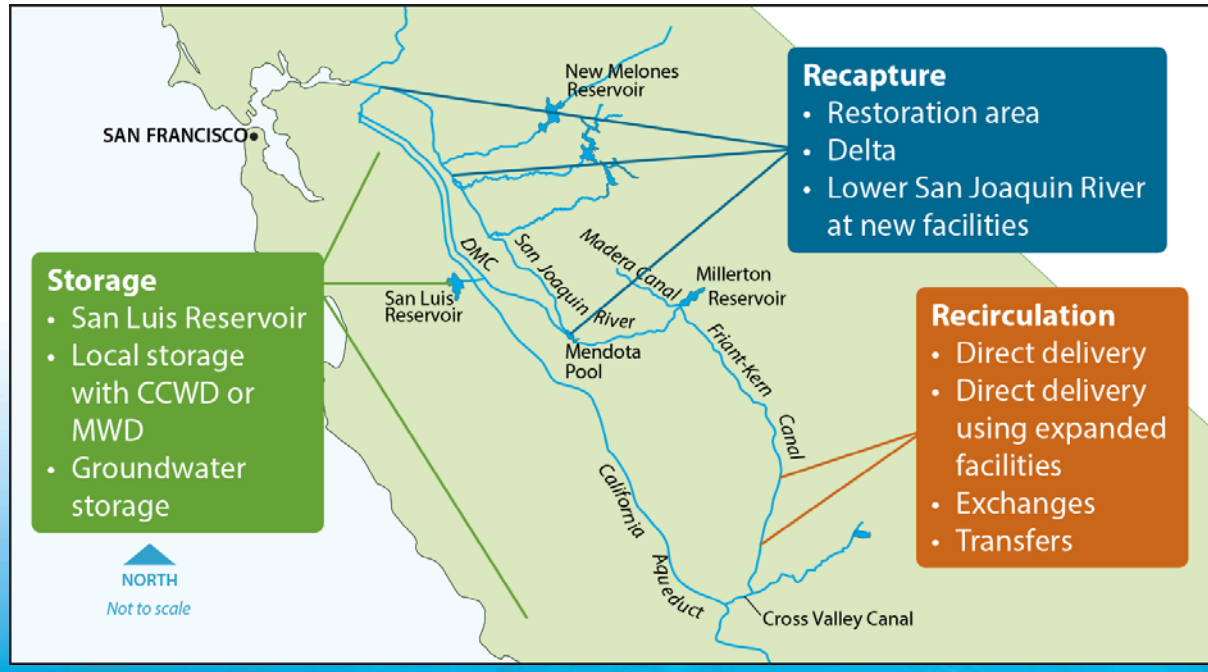
# Alternative 4 – Expand Existing Facilities

- Improvements to expand recapture at existing local diversion facilities
- Expanded recirculation through exchanges that may require new facilities or complex agreements
- Use of local storage with CCWD or MWD

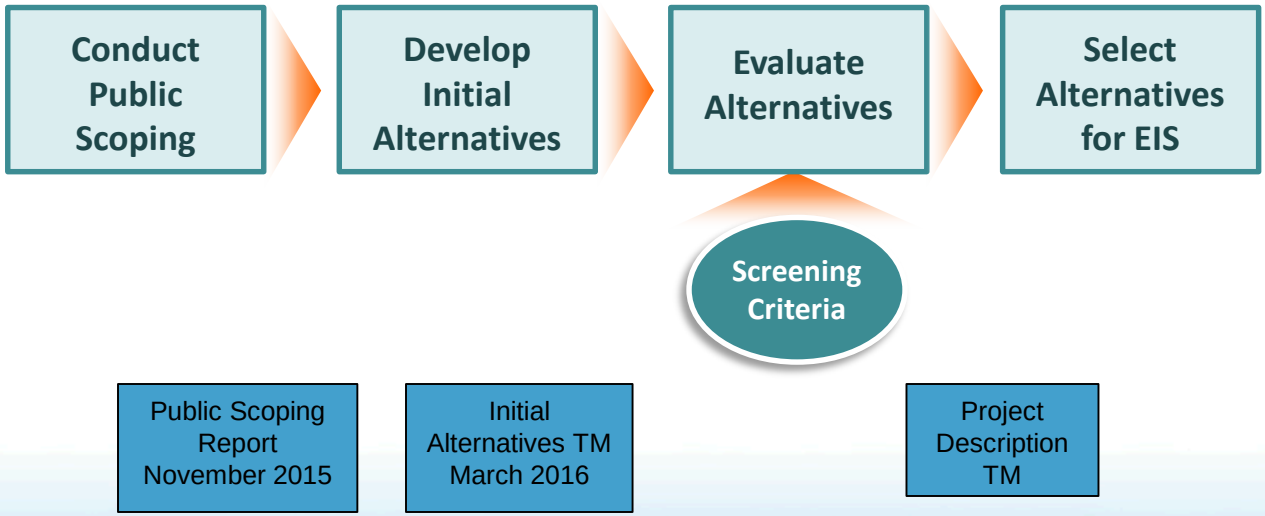


# Alternative 5 – Construct New Facilities

- Development of a new facility on the Lower San Joaquin River to recapture up to 500 cfs plus the use of existing facilities (similar to Alternative 3)
- Same Recirculation as Alternative 4
- Storage in Groundwater Banks



# Alternatives Development



# Preliminary Evaluation of Initial Alternatives

- Criteria
  - Completeness
  - Effectiveness
  - Efficiency
  - Acceptability

# Completeness and Effectiveness

## Completeness

- Evaluates the degree to which each alternative addresses the recapture, recirculation and storage capacities necessary to achieve the Purpose and Need of the EIS

## Effectiveness

- Measures how effective each alternative supports the recapture and recirculation of Restoration Flows.

# Modeling Approach

1. Estimate Delta and San Joaquin River Recapture
   - Use CalSim
   - Develop monthly estimates of recapture for each alternative
2. Estimate available water for recirculation
   - Subtract amount to address changes in CVP and/or SWP supplies
3. Estimate amount recirculated
   - Spreadsheet Postprocessor (Recirculation calculator)
   - Estimates conveyance and storage capacity and monthly demands
   - Evaluates recaptured water recirculated under each alternative

# Delta Recapture

- Calculate available Restoration Flows entering the Delta
- Develop constraints to simulate real operations logic
  - OMR
  - SJR IE Ratio
  - D-1641 EI Ratio
  - Delta water quality
  - Surplus conditions (no recapture)
  - Use both Banks and Jones Pumping
- Develop CalSim models for each alternative

# SJR Recapture

- Calculate available Restoration Flows below Merced confluence
- Develop constraints for recapture
  - Available capacity to move water from SJR to DMC
  - Available capacity in the DMC to O'Neill and/or San Luis Reservoir
  - No constraint regarding water quality (potential impacts will be analyzed in EIS to identify if modified operations are necessary)

# Recirculation

- Tool includes priorities for how to recirculate the recaptured water
  - Direct delivery with FKC pumpback
  - Other direct delivery options
  - Exchanges
  - Transfers
  - Storage in San Luis Reservoir
  - Other storage
- Priorities will likely vary during implementation, these concepts helped identify if alternatives have adequate capacity

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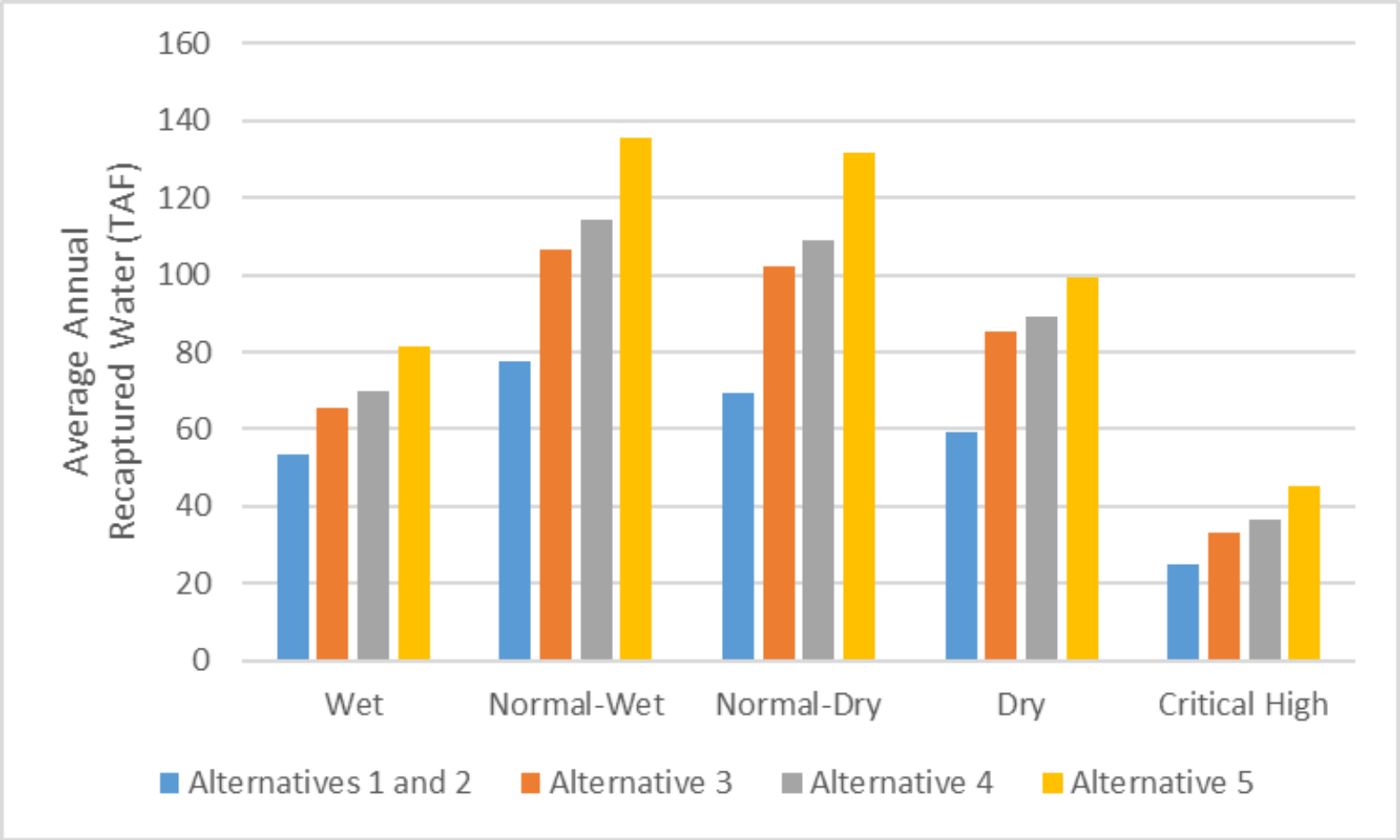
# Total Recapture



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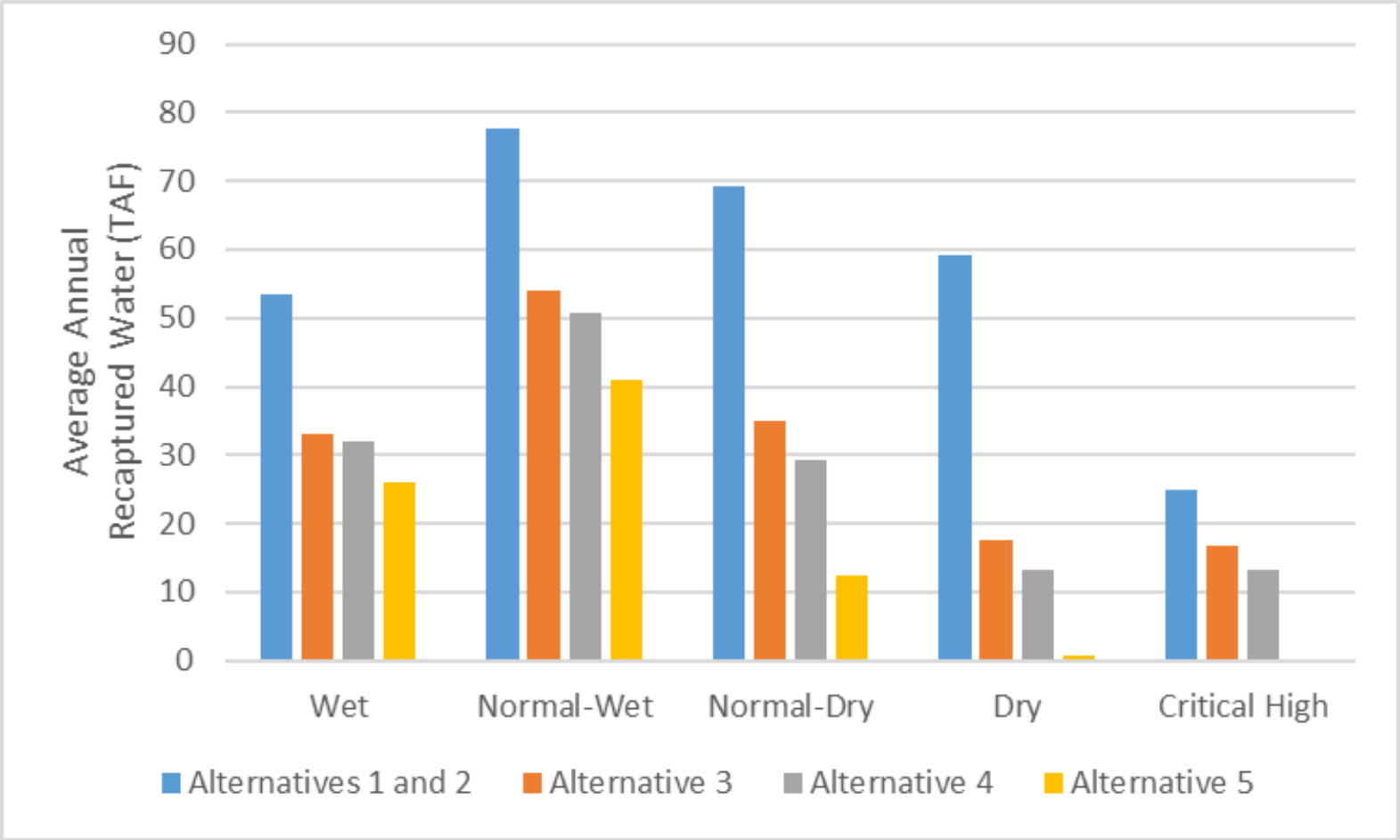
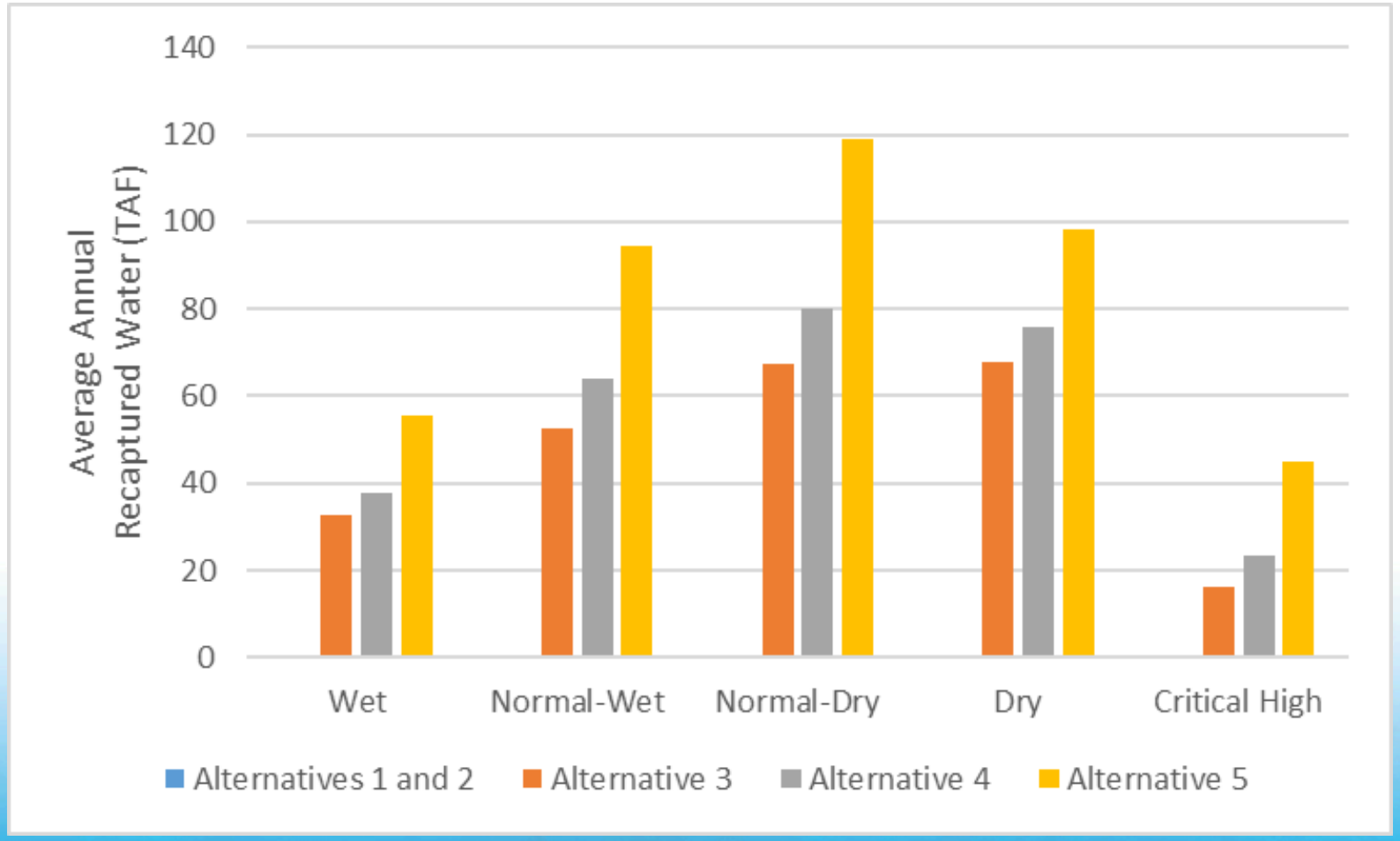
# Delta Recapture



# San Joaquin River Recapture



# Recirculation Summary
## Alternative 1

| | All Years | Wet | Normal -Wet | Normal -Dry | Dry | Critical High |
|---|---|---|---|---|---|---|
| Total Recapture | 64 | 53 | 78 | 69 | 59 | 25 |
| Total Direct Delivery | 64 | 57 | 76 | 58 | 56 | 31 |
| San Luis Reservoir Spills | 1 | 1 | 1 | 0 | 0 | 0 |

Values are average annual (in TAF)

Alternative 2 has the same values because all water can be delivered using direct delivery through Friant-Kern Canal pumpback

# Recirculation Summary
## Alternative 3

| | All Years | Wet | Normal -Wet | Normal -Dry | Dry | Critical High |
|---|---|---|---|---|---|---|
| Total Recapture | 89 | 66 | 107 | 102 | 85 | 33 |
| Total Direct Delivery | 88 | 72 | 104 | 97 | 80 | 50 |
| San Luis Reservoir Spills | 1 | 2 | 1 | 0 | 1 | 0 |

Values are average annual (in TAF)

# Recirculation Summary
## Alternative 4

| | All Years | Wet | Normal -Wet | Normal -Dry | Dry | Critical High |
|---|---|---|---|---|---|---|
| Total Recapture | 95 | 70 | 115 | 109 | 89 | 36 |
| Total Direct Delivery | 94 | 75 | 112 | 104 | 84 | 53 |
| San Luis Reservoir Spills | 1 | 1 | 2 | 0 | 1 | 0 |

Values are average annual (in TAF)

# Recirculation Summary
## Alternative 5

| | All Years | Wet | Normal -Wet | Normal -Dry | Dry | Critical High |
|---|---|---|---|---|---|---|
| Total Recapture | 112 | 81 | 135 | 131 | 99 | 45 |
| Total Direct Delivery | 111 | 83 | 134 | 124 | 98 | 61 |
| San Luis Reservoir Spills | 2 | 0 | 3 | 1 | 1 | 0 |

Values are average annual (in TAF)

# Conclusions

- Direct delivery has adequate capacity to recirculate the recaptured water under all alternatives
  - Retain exchanges and transfers to provide flexibility for limited implementation cost
- San Luis Reservoir has adequate capacity to store water under all alternatives
  - Remove other storage options from further consideration

# Next Steps

- Apply remaining evaluation criteria
  - Efficiency (cost)
  - Construction-related effects
  - Fisheries impacts
  - Water quality
- Complete Alternatives Evaluation and Project Description TM
  - Expected for public release in early 2017

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# Questions?

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# NEXT MEETINGS

# Next Meetings

| Date | Location |
|---|---|
| January 27, 2017 | Visalia |
| April 21, 2017 | Visalia |
| May 17/18 – Part III Workshop | Fresno/Visalia |
| September 15, 2017 | Sacramento |