SAN JOAQUIN RIVER
RESTORATION PROGRAM

Water Management Technical Feedback Meeting

October 18, 2013
Visalia, CA

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Agenda Overview

- Comments on Recent Meeting Notes
- Water Supply Briefing (SCCAO)
- Interim Flow Releases
- Restoration Flow Guidelines
- Recapture and Recirculation
- Investment Strategy
- Part III
- Lecture Series: Paragraph 13(i) Unreleased Restoration Flows
- Public Comment / Next Meeting Dates and Locations

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Comments on Meeting Notes

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Water Supply Briefing

SCCAO

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Interim Flow Releases

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Restoration Flow Guidelines

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Process

- Complete RFGs by January 1, 2014
  - Brainstorm, Discussion, Draft, Finalize
  - Monthly Consultation Meetings
  - Maintain current Working Draft RFG
  - Small Group & Executive Leadership Team

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Schedule

Month	Activity
October 17	RFG Consultation Meeting
November 20	RFG Consultation Meeting
November 21-22	RFG Executive Leadership Team Review
December 10-11	Small Group Meeting
December 18	RFG Consultation Meeting
December 23	FINAL RFG distributed

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Punch List

Priority	Responsibility	Description
High	SG/ELT	13(j)(iii) – RWA Methodology
High	ELT	13(j)(i) – SJRRP Flow Allocation
High	ELT	13(a) – Buffer Flows
High	Ad Hoc	13(i) – Unreleased Restoration Flows
Medium	ELT	13(j)(vi) – Riparian Recruitment Accounting
Medium	ELT	13(j)(ii) – Gravelly Ford Compliance
Low	Reclamation	Making RWA Balances Available
Low	Reclamation	Replacement or Offset Programs and Projects

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Recapture / Recirculation

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2012 R&R Post Mortem

- Anonymous interviews completed late September
- Feedback identified recirculation challenges and achievements in 2012
- Recommendations in development
- Report expected December

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2013 Recirculation

- Total Projected = 86 TAF
  - To-Date Recaptured = 47 TAF
  - To-Date Recirculated = 28 TAF

- 2013 Recirculated to Date
- 2013 Recirculation Water Currently Stored in San Luis Reservoir
- 2013 Recaptured by Banking Programs to Date
- Projected - 2013 Recirculation Water still to be Recaptured

Data: October 11, 2013

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Recapture and Recirculation Plan

- Recirculation Chapter drafted with Friant Contractor input
- Critical Path: Recapture Chapter and associated operations agreements
- Draft plan scheduled for January 2014
- Final plan scheduled for March 2014

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Investment Strategy

Investment Strategy Purpose and Objectives

- Provide information for the Recapture and Recirculation Plan

  "*the Plan shall include provisions for funding necessary measures to implement the Plan*"

  – Identify, evaluate, and rank structural projects that could help achieve the Water Management Goal

  – Support decisions to provide Federal funding for WMG projects when opportunities occur

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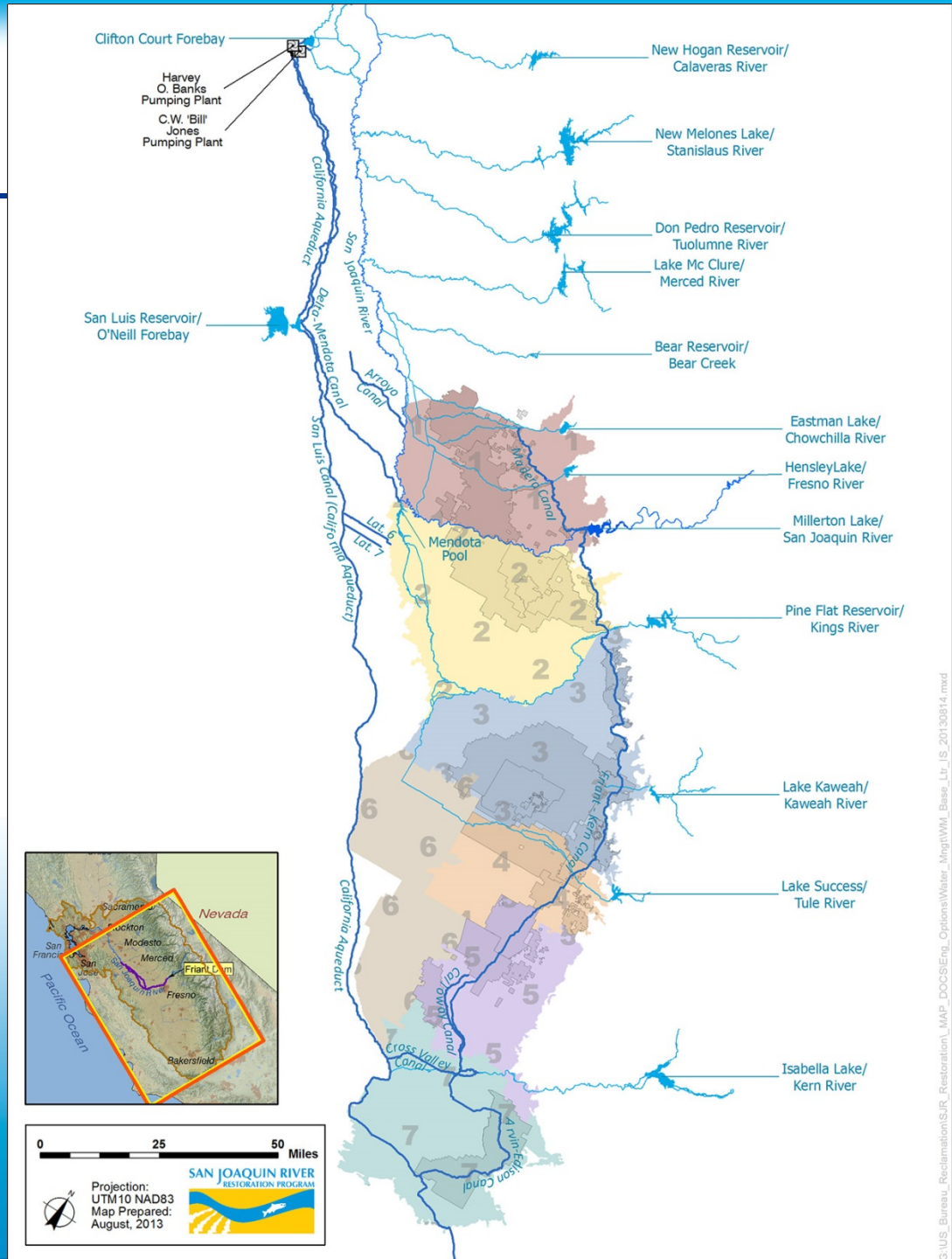
Investment Strategy Study Area



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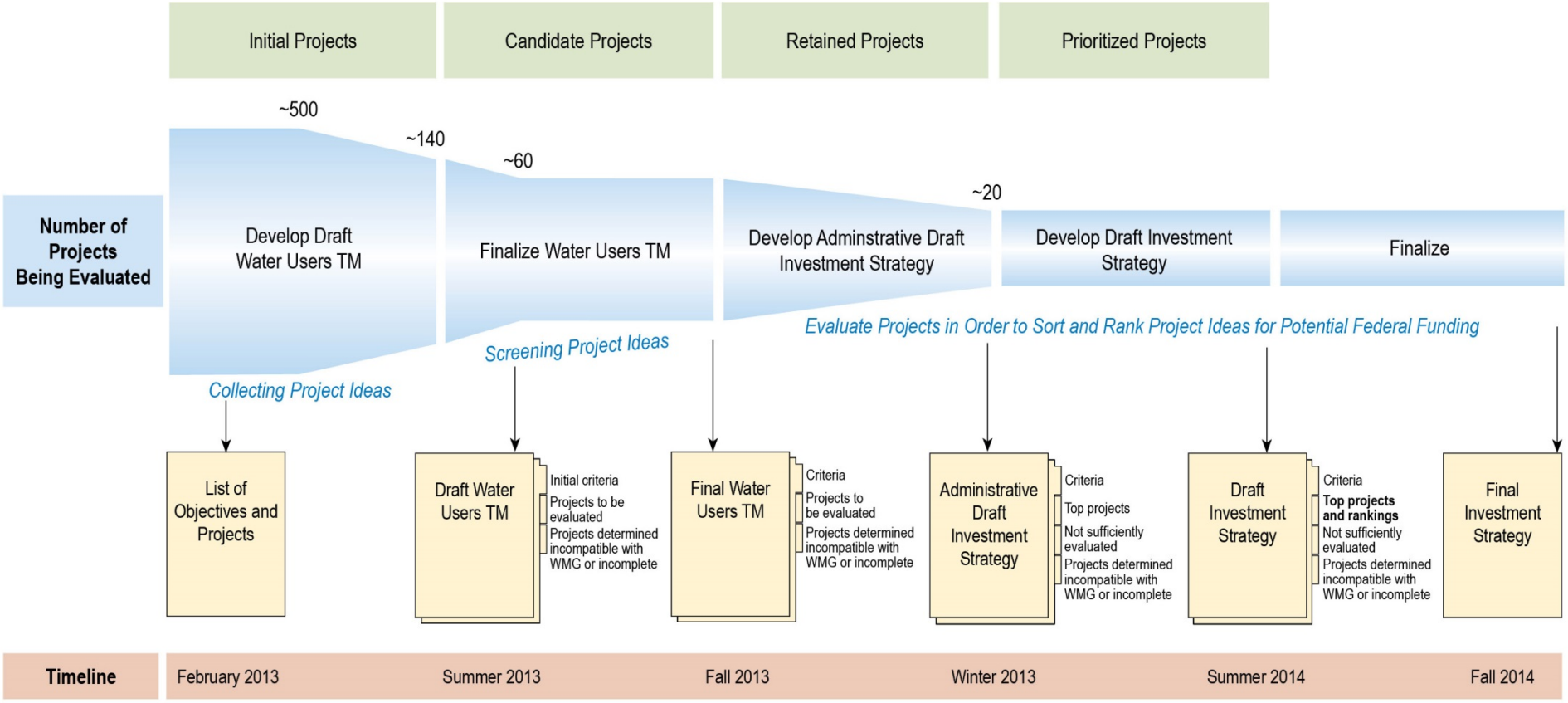
Investment Strategy Approach



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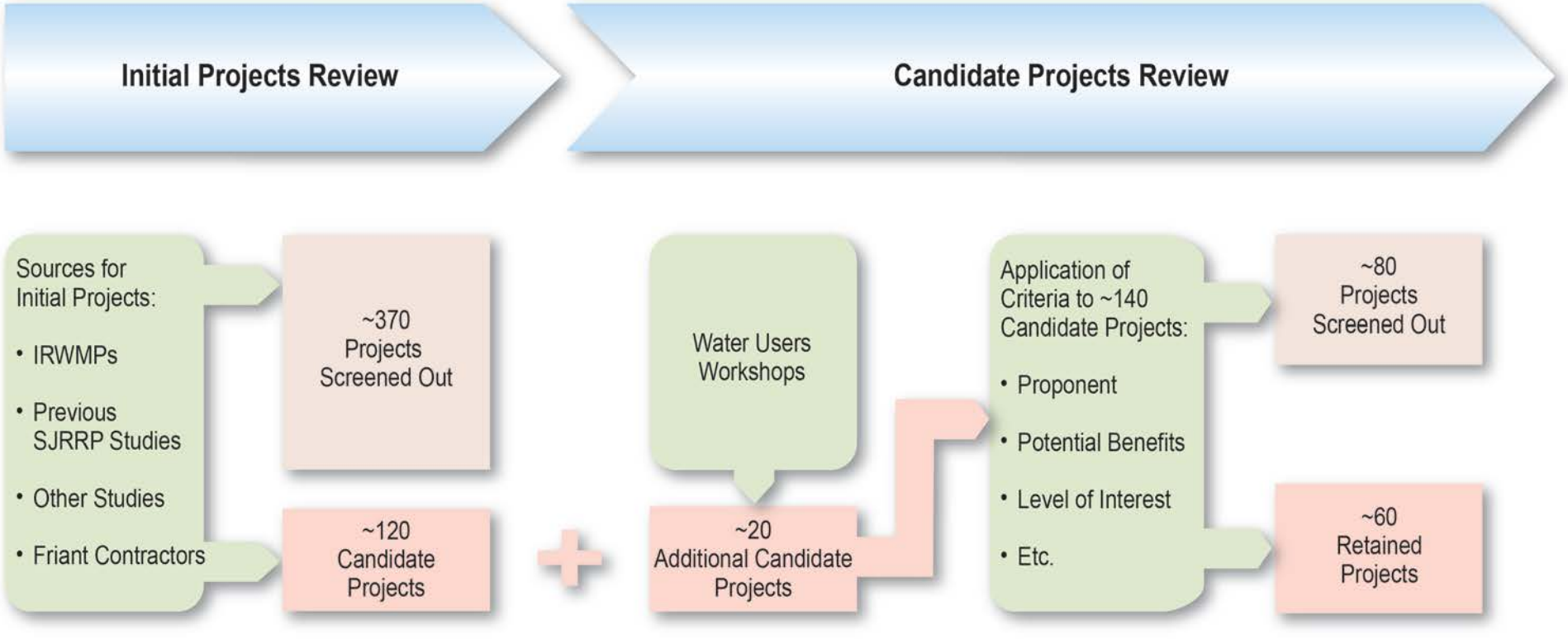
Water Users Technical Memorandum



Screening Criteria Applied to Initial and Candidate Projects

- Ability to contribute to Water Management Goal
- Identified Friant Division proponent
- Scale or size of expected benefits
- Water user opinions of relative effectiveness
- Clarity of project definition
- Duplicate project entry

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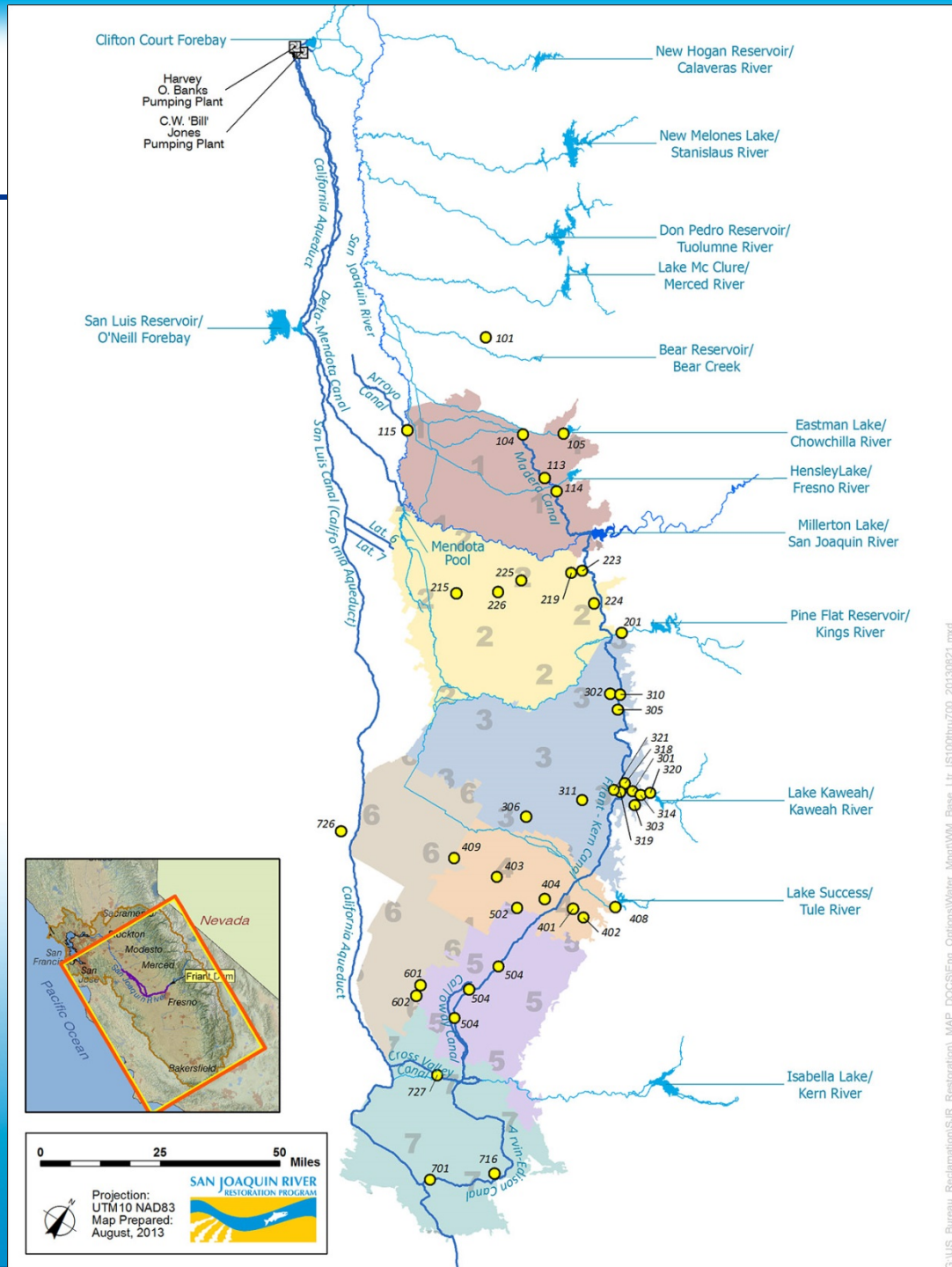
Retained Projects

Local Projects

- Generally in-district projects within WMAs
- Enhance Friant water supply management
- Support recirculation
- Develop local water supplies



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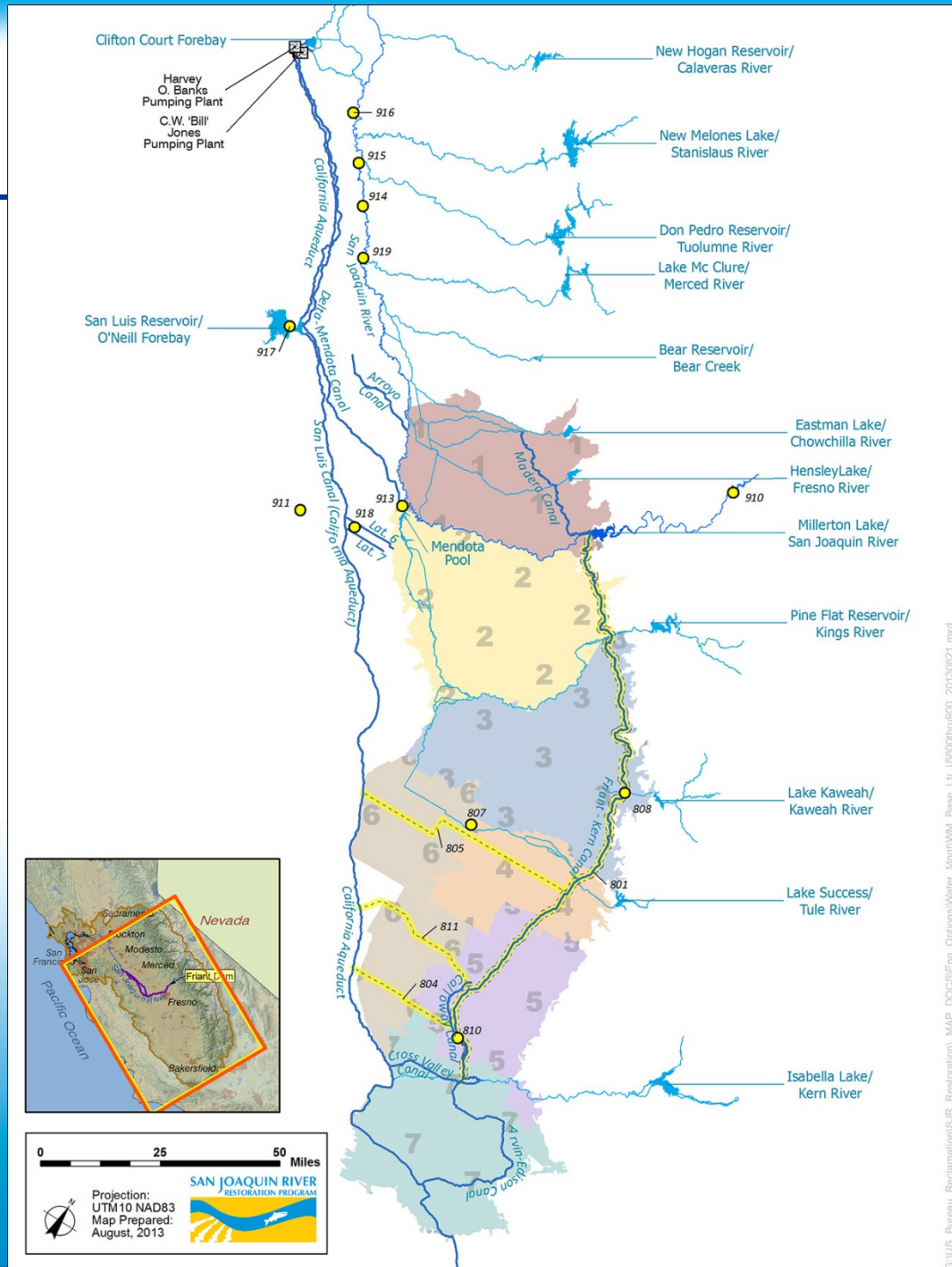
Retained Projects

Regional Projects

- Recapture flows from the San Joaquin River
- Facilitate regional recirculation
- Improve Friant-Kern Canal capacity
- Develop regional water supplies



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Next Steps
Evaluate Retained Projects

- Refine project descriptions for Retained Projects and determine technical evaluations
- Conduct technical evaluations
  - Operations / yield estimates
  - Facility layouts and preliminary cost estimates
  - Environmental considerations
  - Institutional requirements
- Compare & rank Retained Projects
  - Administrative Draft Investment Strategy Report
  - 20 Highest priority projects to be evaluated in greater detail

Next Steps – cont'd
Evaluation Criteria for Retained Projects

- Project performance and cost
  - Water supply reliability (average and dry year)
  - RWA balance reduction
  - Geographic extent of RWA benefits
  - Total cost (capital and O&M)
  - Identified project sponsor(s) and cost share
  - Federal cost of RWA benefit ($/af/yr)
  - Availability of non-Federal funds

Next Steps – cont'd
Evaluation Criteria for Retained Projects

- Other potential benefits
  - Water Management Flexibility
  - Flood Risk Reduction
  - Urban Water Quality
- Environmental impact considerations
  - Downstream fisheries and water quality
  - Affected aquatic, biological and cultural resources
  - Changes to CVP and SWP operations
  - Groundwater level and quality
- Institutional requirements
- Implementation time frame

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Next Steps – cont'd
Evaluate Priority Projects

- Appraisal level designs and cost estimates
- Project implementation schedule and budget requirements for major project phases
  - Planning / NEPA / CEQA
  - Design
  - Permitting
  - Acquisitions
  - Agreements
  - Construction

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Part III

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Lecture Series:
Unreleased Restoration Flows

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Unreleased Restoration Flows (URFs)

- Paragraph 13(i) of Settlement
  - Restoration Flows commence no later than January 1, 2014
  - Restoration Flows that cannot be released from Friant Dam become URFs
  - Use URFs to best achieve the Restoration Goal, as determined by Reclamation
  - Established priority for banking, storing, exchanging, selling, and supplemental releases

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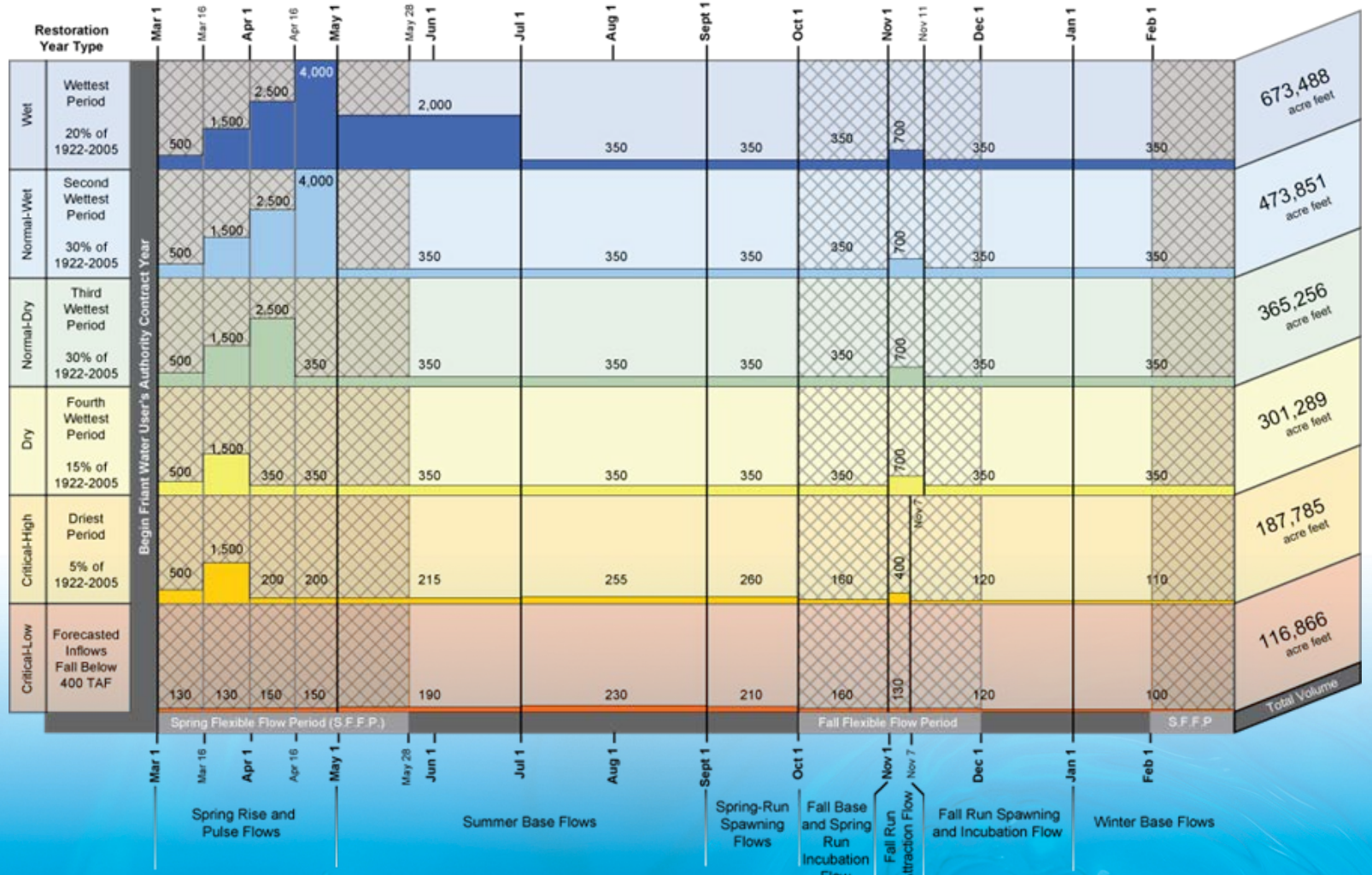
Exhibit B Hydrographs



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Projected Channel Capacity

Restoration Year	Reach 2B Channel Capacity (cfs)
2014	810
2015	810
2016	810
2017	810
2018	810
2019	2,000
2020	2,000
2021	2,000
2022	3,000
2023	3,000
2024	3,000
2025	3,000
2026	4,000
2027	4,500

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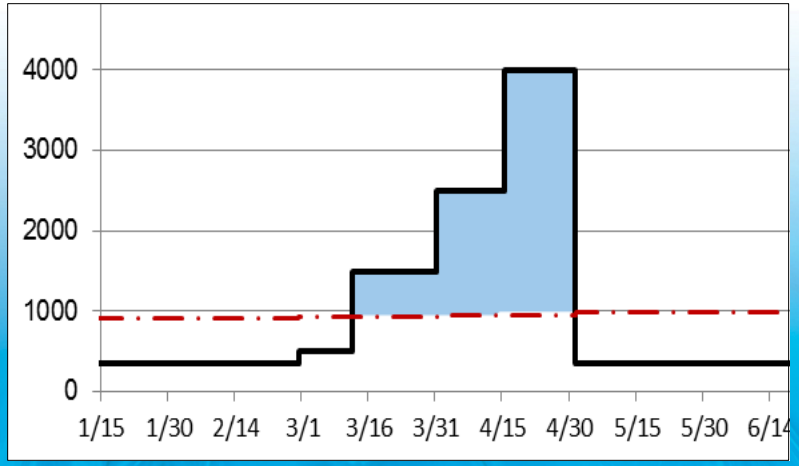
Scenario 1 – Upper Estimate

Contract Year Type	13(i) Supply Volume (TAF)											
	2014-2018			2019-2021			2022-2025			2026-2027		
	Reach 2B Capacity= 810 cfs			Reach 2B Capacity= 2,000 cfs			Reach 2B Capacity= 3,000 cfs			Reach 2B Capacity= 4,000-4,500 cfs		
	Average	Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum
Wet	276	276	276	66	66	66	25	25	25	-	-	-
Normal-Wet	141	81	154	53	11	66	17	-	25	-	-	-
Normal-Dry	58	30	80	6	-	11	-	-	-	-	-	-
Dry	16	-	27	-	-	-	-	-	-	-	-	-
Critical High	18	18	18	-	-	-	-	-	-	-	-	-
Critical Low	-	-	-	-	-	-	-	-	-	-	-	-
All Years	117	-	276	31	-	66	10	-	25	-	-	-



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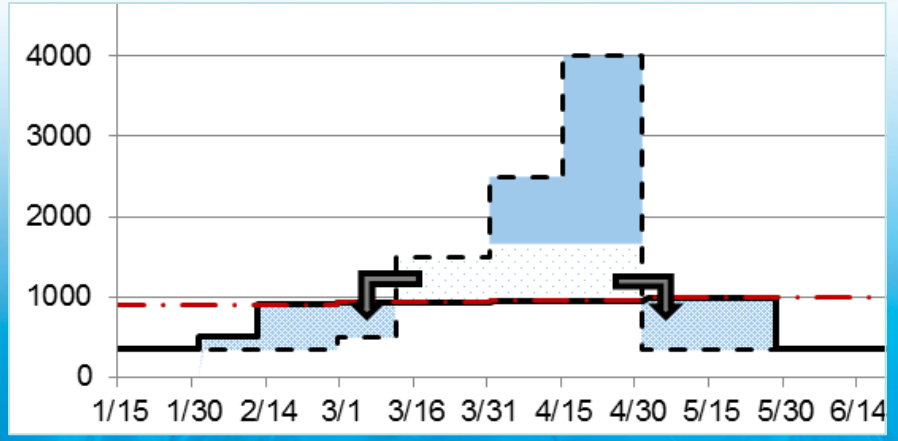
Scenario 2 – Lower Estimate

Contract Year Type	2014-2018			2019-2021			2022-2025			2026-2027		
	Reach 2B Capacity= 810 cfs			Reach 2B Capacity= 2,000 cfs			Reach 2B Capacity= 3,000 cfs			Reach 2B Capacity= 4,000-4,500 cfs		
	Average	Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum	Average	Minimum	Maximum
Wet	229	229	229	75	75	75	-	-	-	-	-	-
Normal-Wet	59	-	125	-	-	-	-	-	-	-	-	-
Normal-Dry	1	-	13	-	-	-	-	-	-	-	-	-
Dry	-	-	-	-	-	-	-	-	-	-	-	-
Critical High	-	-	-	-	-	-	-	-	-	-	-	-
Critical Low	-	-	-	-	-	-	-	-	-	-	-	-
All Years	63	-	229	15	-	75	-	-	-	-	-	-



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Projected Availability

Restoration Year	Reach 2B Channel Capacity (cfs)	Weighted Average Availability (TAF) Lower & Upper Estimate
2014	810	63 – 117
2015	810	63 – 117
2016	810	63 – 117
2017	810	63 – 117
2018	810	63 – 117
2019	2,000	63 – 117
2020	2,000	15 – 31
2021	2,000	15 – 31
2022	3,000	0 – 10
2023	3,000	0 – 10
2024	3,000	0 – 10
2025	3,000	0 – 10
2026	4,000	-
2027	4,500	-

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Means to Achieve Restoration Goal

- It is Reclamation's responsibility to manage URFs to best achieve the Restoration Goal
- Two means:
  - Supplement Future Restoration Flows
  - Sales for deposit into the Restoration Fund

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Supplement Restoration Flows

- Scientific Experiments
- Unexpected Seepage Losses
- Risk Mitigation

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Potential Experiments

Action	Description	Volume
Inundation of Juvenile Rearing Habitat	Enhance productivity (food, temperature) for juvenile salmon, allowing for increased growth and survival rates	2,500 cfs for 10-14 days 50.0 TAF to 70.0 TAF
Fry Distribution Pulse	Provide early pulse to promote distribution of fry in Restoration Area and emigration of fry	2,000 to 4,000 cfs for 4 days 16.0 TAF to 32.0 TAF
Restoration Flows Connectivity	Late spring summer flows to maintain connectivity in system	50 to 150 cfs for up to 60 days in June, July, August 6.0 TAF to 18.0 TAF
Extended Spring Pulse	Extend spring pulse to provide migration conditions for juveniles and adults	Up to 4,000 cfs for 4 weeks in April, May, or June Up to 220.0 TAF
Fall-run Adult Migration	Adult attraction flows to provide earlier or longer fall attraction pulse	700 cfs for 7 days 9.7 TAF
Fall-run Adult Migration	Assist fall-run migration to overcome migration impediments such as road crossings or structures	350 cfs for 14 to 28 days 9.7 TAF to 19.4 TAF

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Restoration Fund Deposits

- Accelerate completion of Phase 1 projects
- Enhance Phase 1 projects
- Initiate Phase 2 or new Restoration Goal projects
  - Availability of funds is subject to future appropriations until October 1, 2019

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Priorities

1. Bank, Store, or Exchange with Friant Contractors
2. Sell to Friant Contractors
3. Bank, Store, or Exchange with non-Friant Contractors
4. Sell to non-Friant Contractors
5. Release during other times of the year as recommended by the Restoration Administrator

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Management of URFs

- Actions taken by Reclamation shall not increase the water delivery reductions to Friant Contractors beyond what would be caused by releases in accordance with the Exhibit B hydrographs

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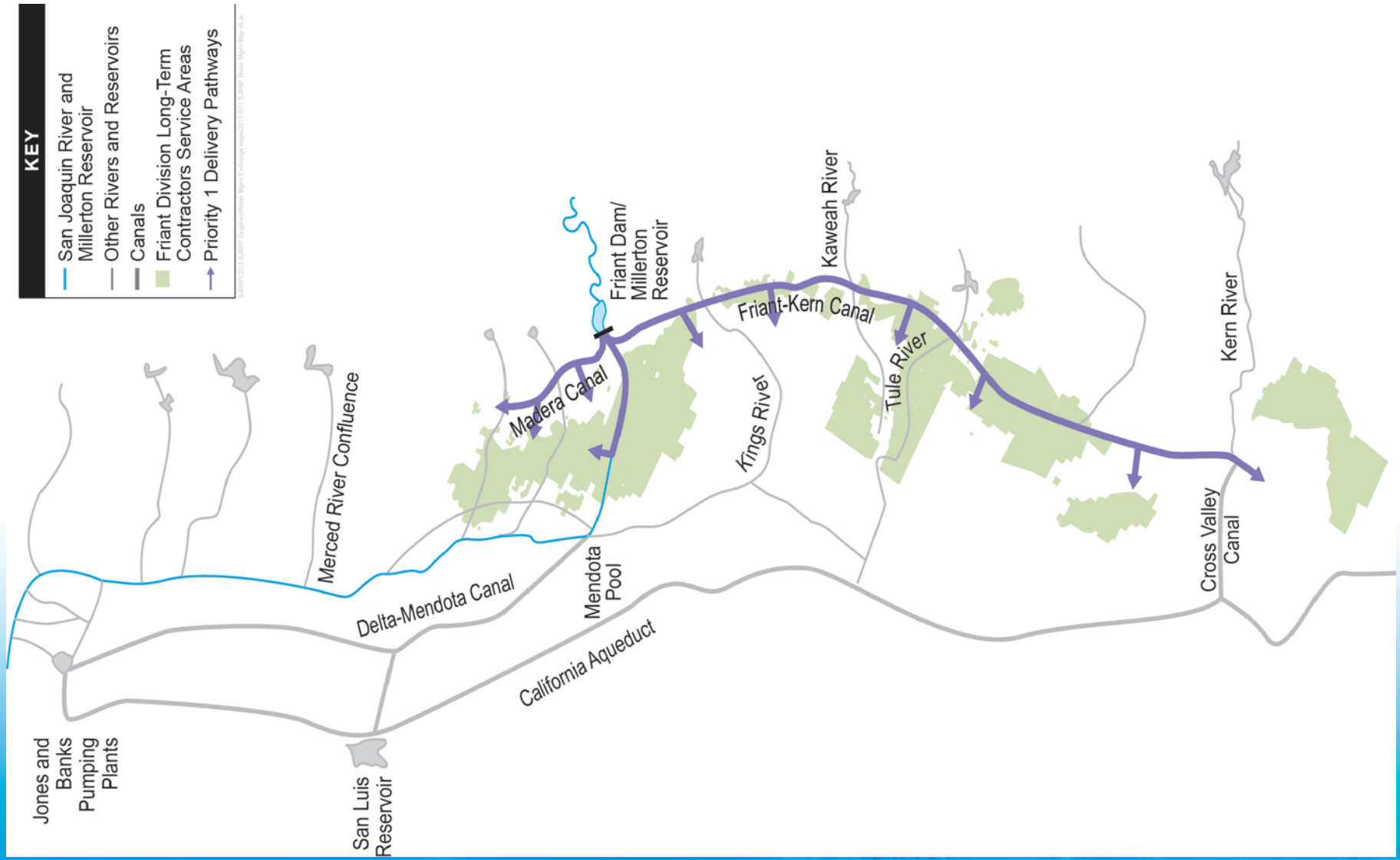
Delivery Pathways – Friant Contractors



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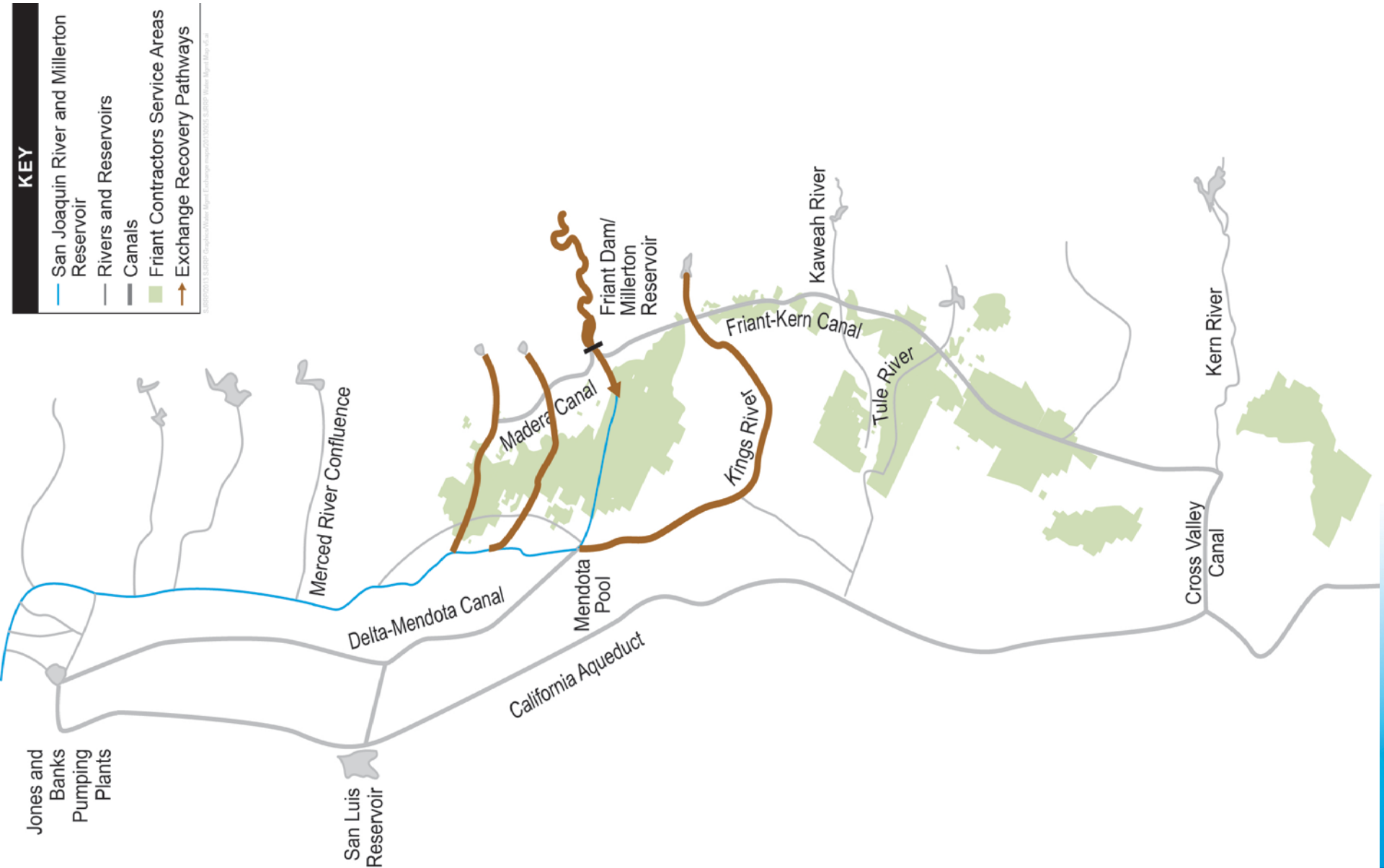
Recovery – Friant Contractors



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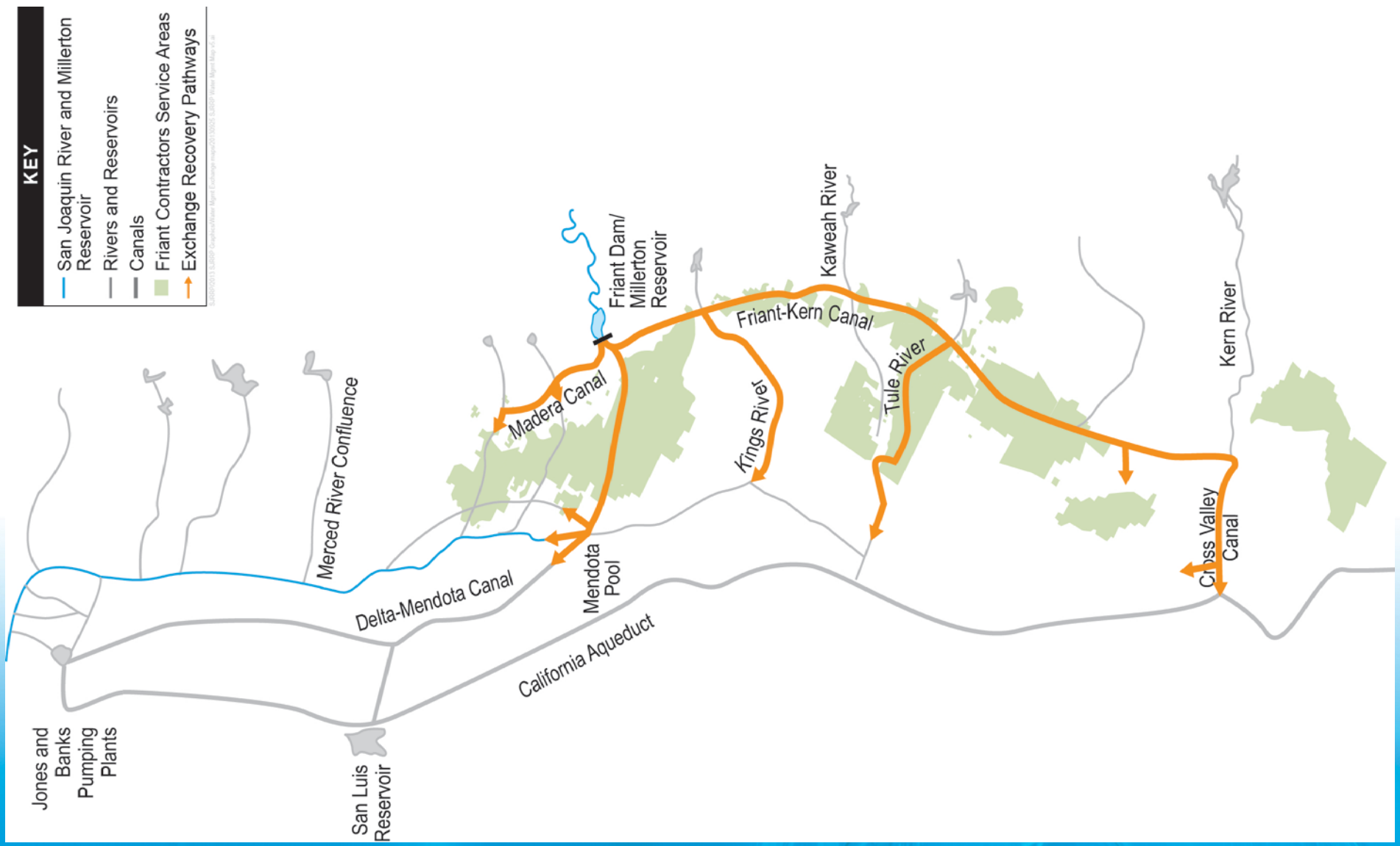
Delivery Pathways – Non-Friant



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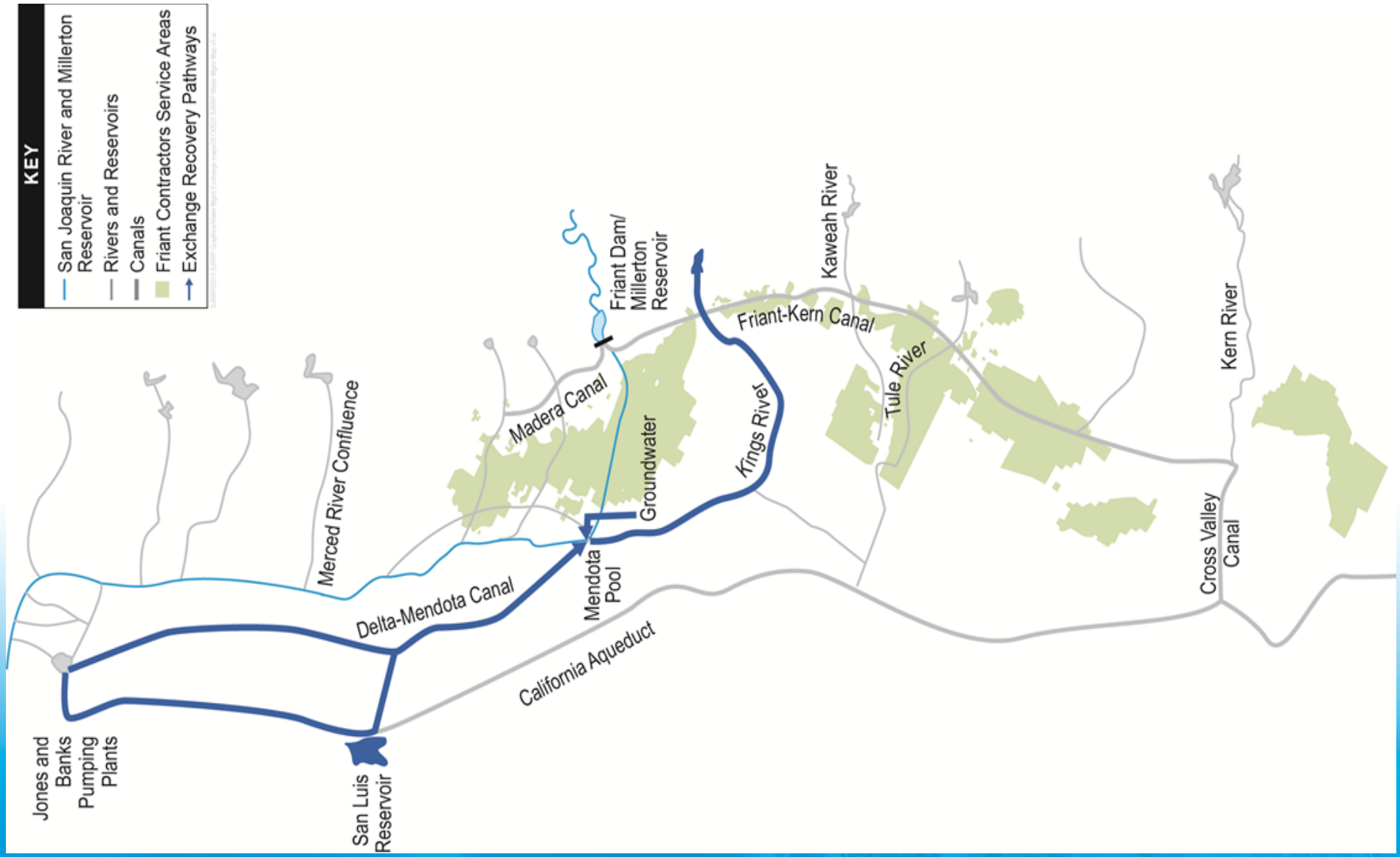
Recovery – Non-Friant



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Summary of Alternatives

Priority	Options	Ability to maximize diversion of available URFs	Recovery of URFs			Reduction in RWA Balances
			Financial Recovery	Flow Recovery at Friant Dam	Flow Recovery at Mendota Pool	
1A	Bank, store or exchange with Friant Contractors	High (1,2,3,4)	N/A	High (1,3)	High (2,4)	Med-High (1,2,3,4)
1B	Sale to Friant Contractors	Med-High (5,6)	Med (5,6)	N/A	N/A	High (5,6)
2A	Bank, store or exchange with non- Friant Contractors using Friant-Kern Canal	Med-High (7,8)	N/A	Low (9)	Med-Low (10)	Low (7,8)
2A	Bank, store or exchange with non-Friant Contractors using San Joaquin River	Med-Low (9,10)	N/A	Low (7)	Med-Low (8)	N/A
2B	Sale to non-Friant Contractors using Friant-Kern Canal	Med-High (11)	Med (11)	N/A	N/A	N/A
2B	Sale to non-Friant Contractors using San Joaquin River	Med-Low (12)	Med-Low (12)	N/A	N/A	N/A
3	Release by Restoration Administrator at other times.	Med (13)	N/A	Med (13)	Med (13)	N/A
Any	Storage in Millerton Lake for delivery in future contract years	Low (all)	Low (5,6,11,12) or N/A	Low (all)	Low (all)	Low (1,2,3,4,7,8) or N/A

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Conclusion

- Draft URFs Guidance Document
  - Comments due by Settling Parties on Oct. 21
  - Finalize by November/December
- Execute agreements by March 2014
  - Prioritizing Banking, Storing, and Exchanging
  - Prioritizing Friant Contractors
  - Practical and mutually acceptable
  - Cover projected volumes + 25%

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Public Comment / Next Meetings

Next SJRRP Water Management Technical Feedback Meetings

Day	Date	Location
Thursday	January 23, 2014	Reno
Friday	April 18, 2014	Visalia
Friday	July 18, 2014	San Francisco