



# Water Management Technical Feedback Meeting


June 17, 2011  
Fresno, CA



## Agenda Overview


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- Water Supply Briefing
- Interim Flow Releases and Accounting
- Restoration Flow Guidelines
- Recapture and Recirculation
- Friant-Kern Canal Capacity Restoration Feasibility Study
- Madera Canal Capacity Restoration Feasibility Study
- Friant-Kern Canal Pump-Back Feasibility Study
- Next Meeting Date



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## Comments on Meeting Notes



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## Water Supply Briefing

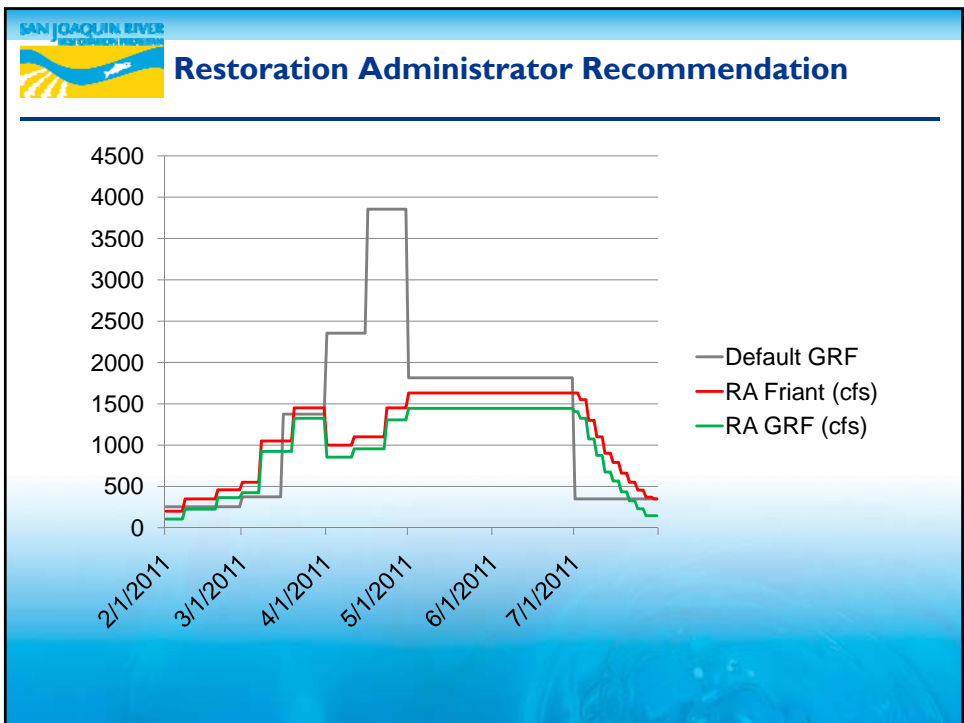
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RESTORATION PROGRAM**

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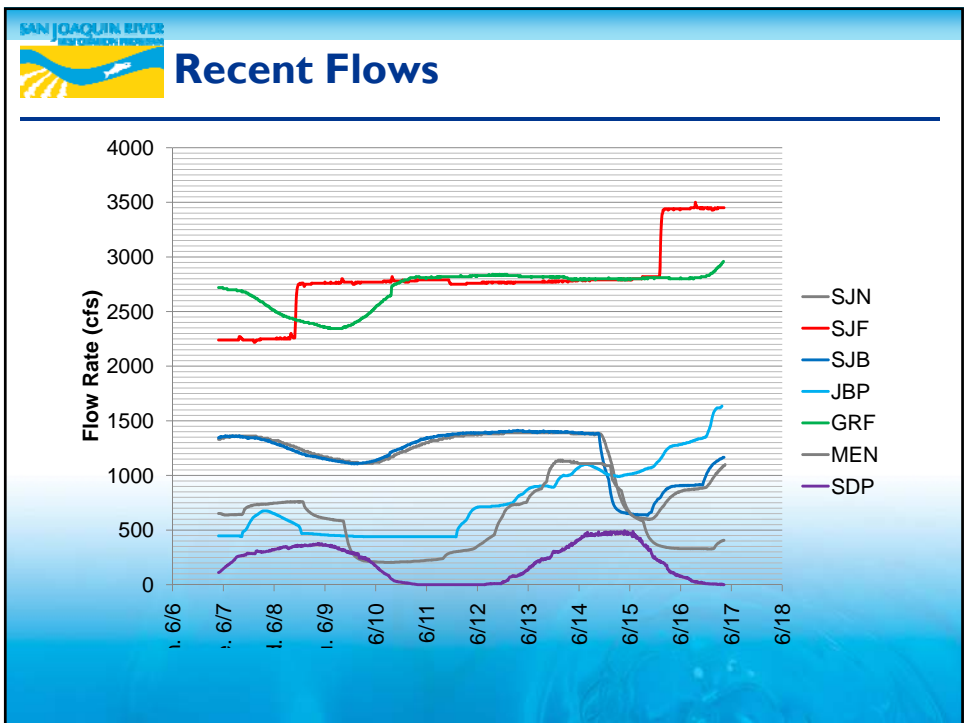
# Interim Flow Releases and Accounting



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## Interim Flow Operation Criteria


- Flood management determines releases.
- No Recapture at Mendota Pool.
- King’s River flood releases control below Sack Dam,
- Seepage drainage criteria control at El Nido.
- Interim Flows may resume in July.
- Reclamation will update accounting for the Restoration Administrator.






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# RECOVERED WATER ACCOUNT


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- ## Recovered Water Account
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- Reclamation met with Settling Parting on May 3 to discuss the RWA methodology.
  - Settling Parties appear willing to work with the Friant Proposal.
  - Additional time was requested to evaluate alternative water use curves.
  - Reclamation will transmit proposed text for comment and incorporation into the Restoration Flow Guidelines.



## RWA Balances

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- Coordinating with SCCAO
- Continuing to improve database.
- Will be posted to SJRRP website.



## Restoration Flow Guidelines

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## RFG Timeline

2011 Draft → Mar. 1 2011

2012 Development → Jul. – Dec. 2011

- 13.(c) – Unexpected Seepage Losses
- 13.(i) – Unreleased Restoration Flows
- 13.(j)(iii) – RWA
- 13.(j)(vi) – Flood Releases

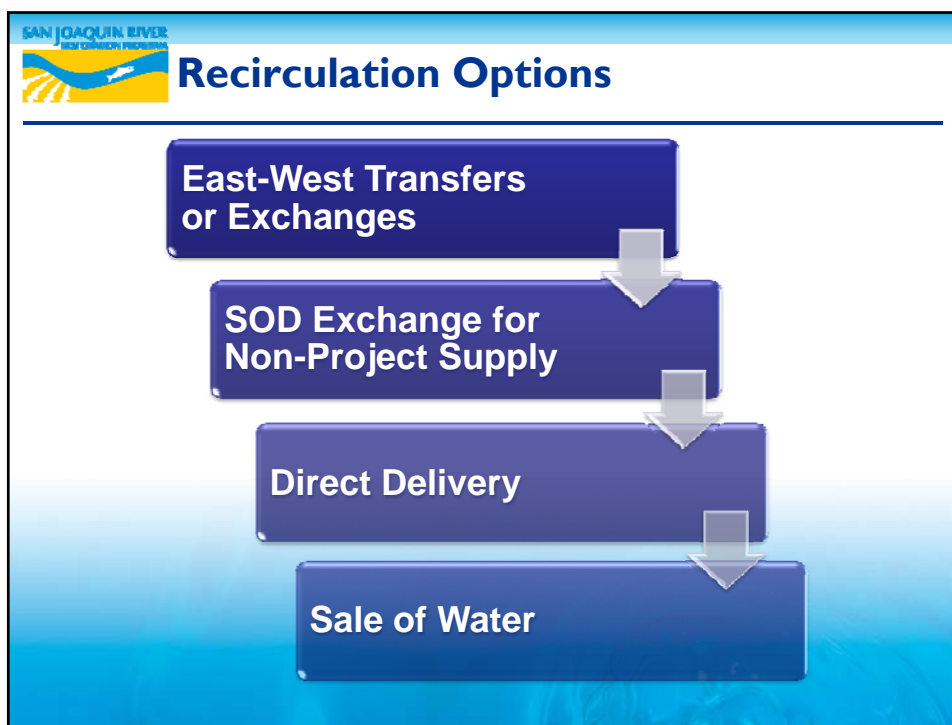
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## Recapture / Recirculation

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## Recapture and Recirculation Plan

- Westside Allocation
  - Analyzing internally
- Plan Funding
  1. Identify costs
  2. Determine responsibility for payment of costs








## 2011 Recapture and Recirculation

- Final EA and FONSI
- Developing options for up to 50 TAF
  - 20 TAF probable
- DWR Wheeling Agreement
- Consolidated Place of Use




## 2011 Recapture and Recirculation

- Exchange of up to 50 TAF among:
  - Fresno ID; Lower Tule River ID; and Tulare ID;
  - Tulare Lake Basin WSD
- Participation by all Friant Division Long-Term Contractors



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# **FRIANT-KERN CANAL CAPACITY RESTORATION FEASIBILITY STUDY**



## **Project Update**

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- Draft Feasibility Study Released
- Draft Environmental Assessment and Finding of No Significant Impact Released
  - Comments due July 5, 2011



## Feasibility Report

	Alternative 5(a)		Alternative 5(b)	
	Without Part-III	With Part-III	Without Part-III	With Part-III
Total NED Benefit	\$32,900,000	\$57,850,000	\$32,900,000	\$57,850,000
Total NED Costs	\$24,530,000	\$24,530,000	\$39,100,000	\$39,100,000
<b>Net NED Benefits</b>	<b>\$8,370,000</b>	<b>\$33,320,000</b>	<b>(\$6,200,000)</b>	<b>\$18,750,000</b>

- Alternative 5(a) – Kings River to Kaweah River
- Alternative 5(b) – Kings River to 5<sup>th</sup> Avenue



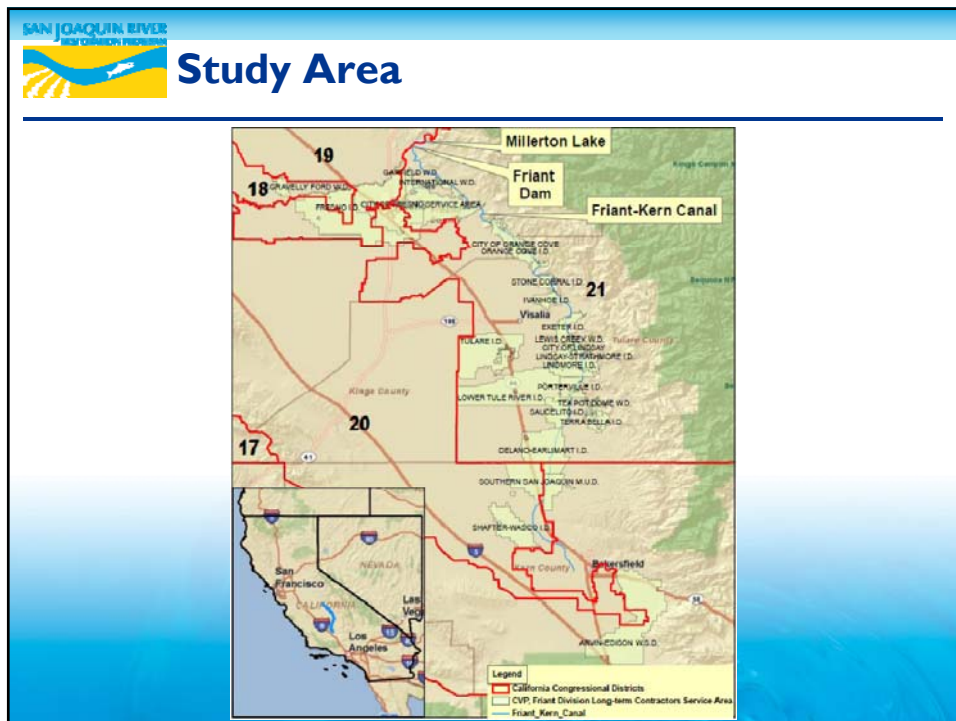
## Authorization


- Authorized pursuant to Section 10201 of the SJRRS Act to conduct a Feasibility Study
  - “Restoration of the capacity ... as previously designed and constructed by Reclamation.”
  - “Upon completion and consistent with the applicable feasibility studies, ... authorized to construct...”
  - “The costs ... shall be a nonreimbursable Federal expenditure.”

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## Principles & Guidelines

- *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies.*
  - Defining problems, needs, and opportunities.
  - Identifying existing and projected future resources.
  - Developing planning objectives, constraints, criteria.
  - Identifying and formulating alternative plans.
  - Comparing and evaluating alternative plans.
  - Selecting plan that maximizes net NED benefits.






## Problem, Need, Opportunities

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- Implementation of the SJRRP Flows will reduce availability of water supplies to FKC Contractors.
- FKC capacity issues due to:
  - Original design limitations;
  - Subsidence;
  - Increased canal roughness; and
  - Changes in water delivery patterns.



## FKC Capacity Restrictions

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<i>Model Reach</i>	<i>FKC Reach</i>	<i>Friant Contractors</i>	<i>Current Capacity (cfs)</i>	<i>Maximum Capacity (cfs)</i>
1	Friant Dam to Kings River Check	FRESNO	5,300	5,300
		CITY OF FRESNO		
		GARFIELD		
		INTERNATIONAL		
2	Kings River Check to Fifth Ave. Check	EXETER	4,680 - 4,105	4,500
		IVANHOE		
		LINDMORE		
		LINDSAY STRATHMORE		
		ORANGE COVE		
		STONE CORRAL		
		TULARE		
		CITY OF LINDSAY		
		CITY OF ORANGE COVE		
		LEWIS CREEK		
3	Fifth Ave. Check to Deer Creek Check	LOWER TULE	4,000	4,000
		PORTERVILLE		
		SAUCELITO		
		TEA POT DOME		
		TERRA BELLA I.D.		
4	Deer Creek Check to Poso Creek Check	DELANO EARLIMART	3,500	3,500
		SOUTHERN S.J.M.U.D.		
5	Poso Creek Check to Shafter-Wasco Check	SHAFTER WASCO	2,170	2,170
6	Shafter-Wasco Check to Kern River Check	ARVIN EDISON	2,170	2,170



## Objective

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*“Improve the water deliveries and reliability of the FKC in order to reduce or avoid water supply impacts on the FKC Contractors that may result from the SJRRP Flows.”*



## Planning Constraints


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- Study Authorization
- \$25 million assumed funding for FKC
- Applicable Federal and State laws
- Alternatives:
  - Must incorporate current Reclamation Design Standards.
  - Must provide a 50-year period of performance.
  - Must have a high certainty for achieving benefits and cannot rely upon long-term actions.
  - Cannot result in adverse effects to existing and future water supplies.



## Alternatives Development

<b>No Action</b>	SJRRP Flows
<b>Alternative 1</b>	“High Priority” Reaches
<b>Alternative 2</b>	Alternative 1 and restoring to Designed Normal Flows
<b>Alternative 3</b>	Designed Maximum Flows applying original Reclamation designs.
<b>Alternative 4</b>	Designed Maximum Flows applying current Reclamation Design Standards



## Alternative 4 – “Full-Fix”

- 113 miles required restoration
- \$72 million
- Reformulation of Feasibility Study
  - Not required to restore entire FKC
  - Prioritize Kings to 5<sup>th</sup> Avenue
  - Must result in operational increase of FKC

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## Alternative 5

- Alternative 5(a) – Designed Maximum Flows from Kings River to Kaweah River
  - MP 29.14 to MP 71.3
- Alternative 5(b) – Designed Maximum Flows from Kings River to 5<sup>th</sup> Avenue Check
  - MP 29.14 to MP 88.2

Alternative	Mileposts	Distance (miles)	Current Capacity (cfs)	Maximum Capacity (cfs)
5(a) and 5(b)	29.14 to 71.29	42.15	4,500	5,300
5(b)	71.29 to 88.22	16.93	4,105	4,500

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## Alternative 5 – Con't

- Concrete Lining Raises
  - 1.0 to 4.0 feet, 1.7 feet average.
- Bank Raises
  - 1.0 to 3.0 feet, 1.0 foot average.
- Bridges
  - Removing three timber bridges, replacing one
  - 37 other bridges may require minor modifications.






## P&G – 4 Accounts

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- Environmental Quality
- Regional Economic Development
- Other Social Effects
- National Economic Development



## Net NED Benefits

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- NED Benefits – NED Costs

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## NED Benefits

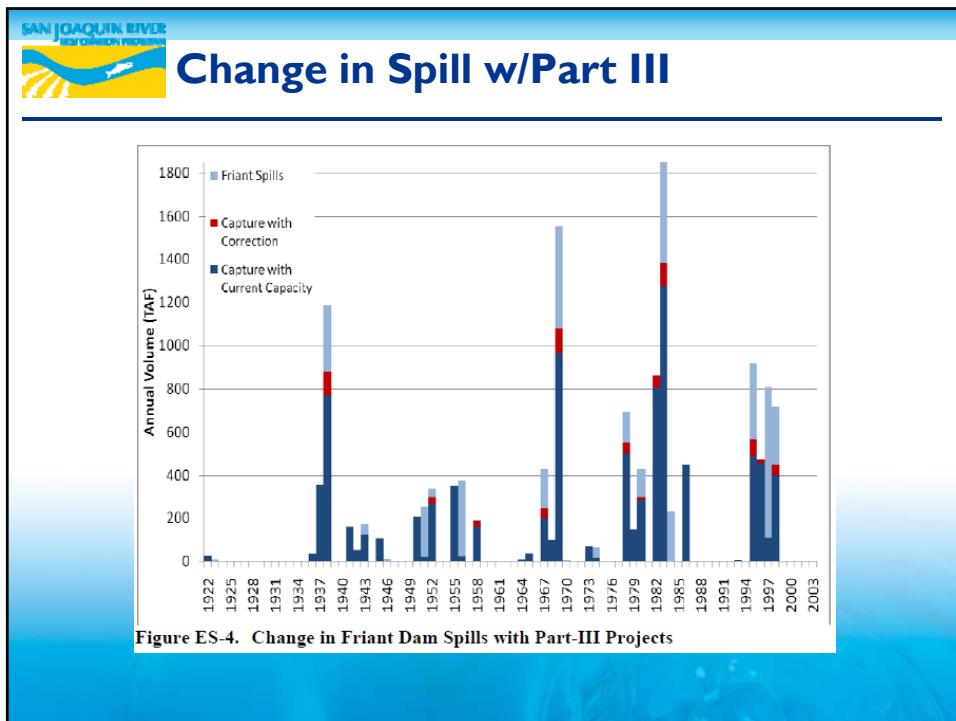
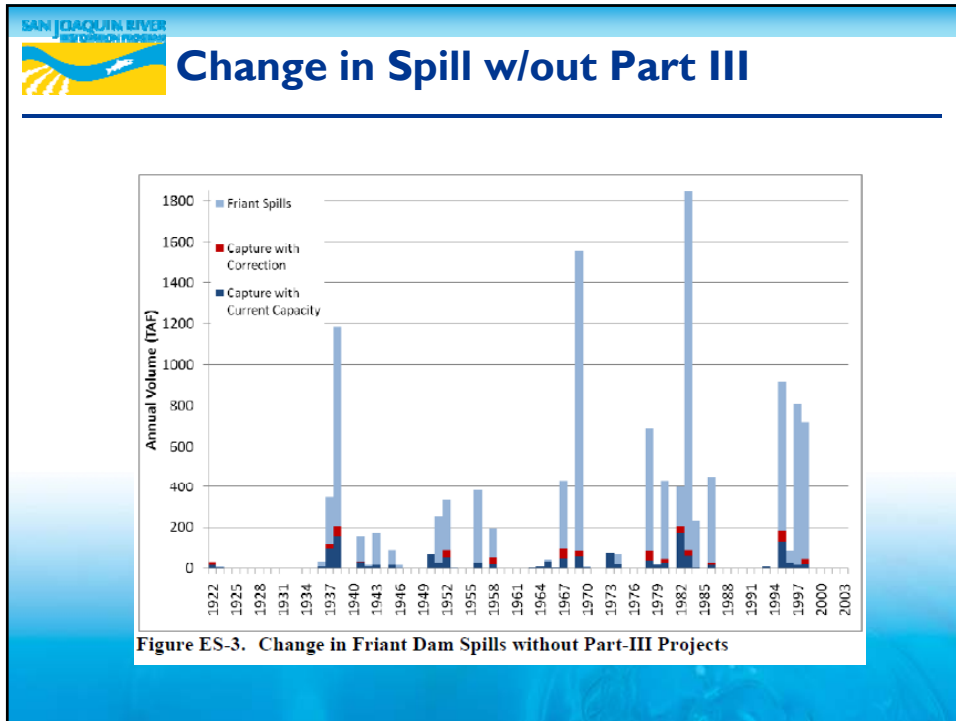
- Benefits
  - Increased ability to divert water supplies for surface deliveries.
  - Increased ability to divert water supplies for groundwater recharge


	Without Part-III	With Part-III
Benefit (af)	5,000	8,000

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## Ability to Increase Deliveries


Figure 11. Illustration of Ability to Increase Deliveries





### Mean CVP/SWP Monthly Delta Export

Month	No Action Alternative (cfs)	Alternative 5 with Part-III Projects (cfs)	Percent Change
October	8,607	8,606	0.0%
November	9,007	9,005	0.0%
December	10,090	10,088	0.0%
January	10,661	10,698	0.3%
February	9,240	9,224	-0.2%
March	8,208	8,208	0.0%
April	5,905	5,904	0.0%
May	5,168	5,154	-0.3%
June	6,275	6,276	0.0%
July	8,976	8,975	0.0%
August	8,723	8,722	0.0%
September	9,075	9,032	-0.5%



### NED Benefit

- Central Valley Production Model
  - Benefit largely comes from reduction in groundwater pumping costs

Period	NED Benefits Without Part-III Projects	NED Benefits With Part-III Projects
Annual	\$658,000	\$1,157,000
50 Years	\$32,900,000	\$57,850,000

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## NED Cost – Alternative 5(a)

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<i>Description</i>	<i>Percentage</i>	<i>Amount</i>
Construction Cost	--	\$15,390,000
Mobilization	5%	\$769,500
Design Contingencies	10%	\$1,615,900
Construction Contingencies	20%	\$3,555,000
Non-Contract Costs	15%	\$3,199,600
<b>Total Cost</b>		<b>\$24,530,000</b>

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## Project Feasibility

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- Technical Feasibility
- Environmental Feasibility
- Economic Feasibility
- Financial Feasibility

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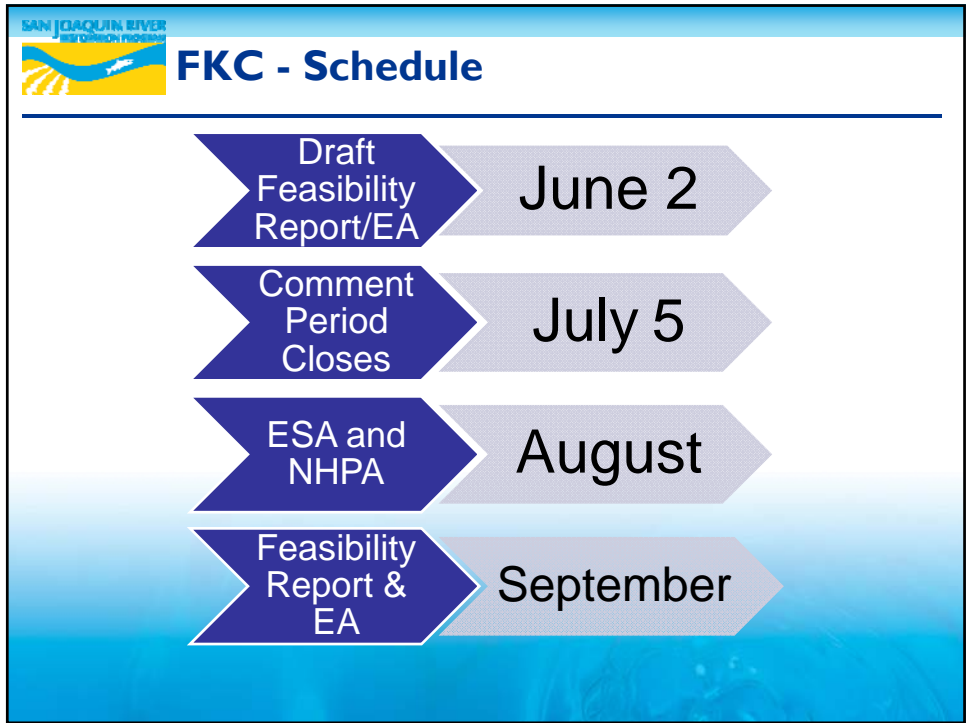
## NED Cost – Alternative 5(b)

<i>Description</i>	<i>Percentage</i>	<i>Amount</i>
Construction Cost	--	\$24,531,654
Mobilization	5%	1,250,000
Design Contingencies	10%	\$2,218,346
Construction Contingencies	20%	\$6,000,000
Non-Contract Costs	15%	\$5,100,000
<b>Total Cost</b>		<b>\$39,100,000</b>

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## Conclusions and Next Steps

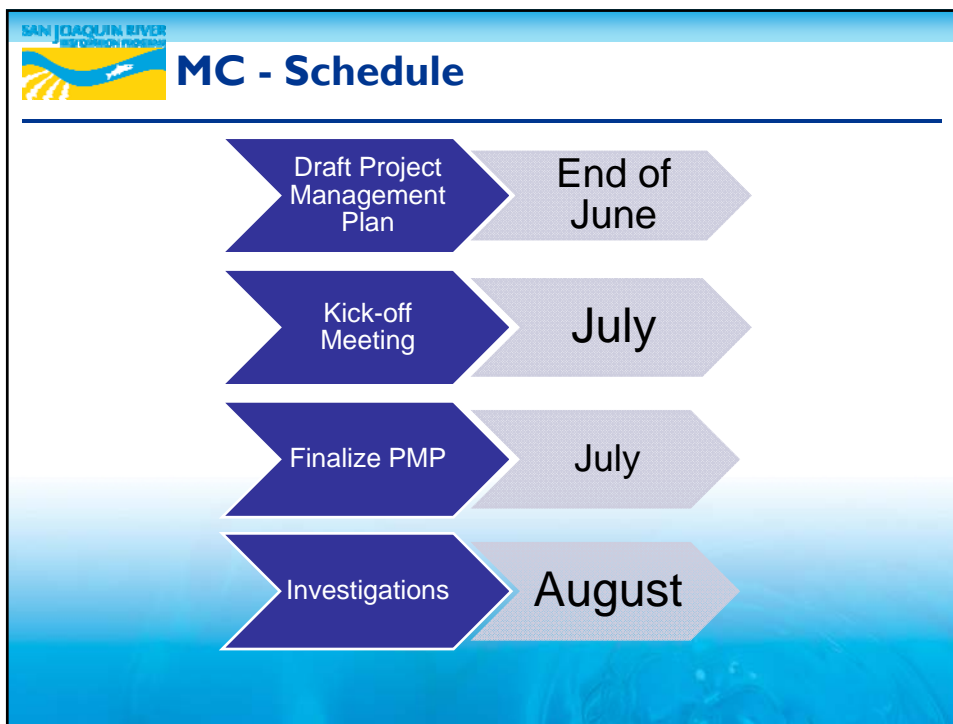
- **Conclusions**
  - Alternative 5(a) is feasible.
  - If cost of Alternative 5(b) reduced to \$25 million, maximize Net NED Benefits.
  - No-Action is inconsistent with Secretary's direction pursuant to the Settlement and SJRRS Act.
- **Next Steps**
  - Solicit comments through public review process.
  - Complete compliance with ESA and NHPA.
  - Finalize documents.
  - Appropriations from Congress.



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## MADERA CANAL CAPACITY RESTORATION FEASIBILITY STUDY

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## Friant-Kern Canal Reverse Flow Pump-Back Facilities Project

The slide features a blue gradient background with a water splash effect at the bottom. The text is centered and presented in a clean, professional font.



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## Reverse Pump Feasibility Study

- Surveying
- Evaluating configurations

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## Schedule

Develop Alternatives	May
Draft Designs	October
Feasibility Cost Estimates	January
Draft Feasibility Report & EA	May/June




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## Public Comment / Next Meetings



## Next Meetings

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Day	FWA Advisory Committee Meeting in Visalia	SJRRP WM Technical Feedback Meeting in Fresno
Friday	June 10	June 17
Friday	July 8	
Friday	August 5	
Friday	September 9	September 16
Friday		November 18