Agenda Overview

• Comments on Recent Meeting Notes
• Water Supply Briefing
• Restoration Flows Releases
• Restoration Flow Guidelines
• Recapture / Recirculation
• Investment Strategy
• Part III
• Lecture Series: Recapture & Recirculation EIS
• Public Comment / Next Meeting Dates and Locations
Comments on Meeting Notes
Water Supply Briefing

SCCAO
Friant Dam Operations

• Today at 1000 hours:
  – 1300 cfs to 1100 cfs

• September 22nd at 1000 hours:
  – 1100 cfs to 900 cfs

• Riparian base flows by September 30
Restoration Flow Releases
2014 Restoration Flows

- No Restoration Flows to date
- Fall Restoration Flows unlikely due to:
  - Curtailment Notice
  - Exchange Contractors
  - Public Health and Safety
  - Actual Conditions
Friant Release Water Temperature

FWQ Historic Temperature

Water Temp (°F)

1/1  2/1  3/1  4/1  5/1  6/1  7/1  8/1  9/1  10/1  11/1  12/1

- 2013
- 2012
- 2011
- 2010
- 2014
- Lethal - Adult
- Critical - Adult
- Lethal - Incubation
- Critical - Incubation
- Lethal - Juvenile
- Critical - Juvenile
Reservoir Temperature Summary

• Current SJR release temperatures are much warmer than historic (2005 – 2013) September temperatures
  – FWQ: 10.6 – 13.4 °F warmer

• Current Friant release temp trend is increasing

• Upstream temperatures are on the high side of historic

• Current upstream temperature trend is flat
Reservoir Temperatures – Cold Water Pool

Note: For this plot, cool water is defined to be water temperatures below 56 °F. This plot illustrates a clear trend that the cool water pool volume and temperature is greatly reduced in 2012, 2013, and 2014. With current drought conditions, May 2014 cool water pool temperatures are about 3.8°F warmer than in May 2013.
River Temperatures - 2014

2014 Daily Maximum SJR Water Temperatures

- 2014 FWQ
- 2014 H41
- 2014 DNB
- 2014 GRF

Lethal - Adult
Critical - Adult
Lethal - Incubation
Critical - Incubation
Lethal - Juvenile
Critical - Juvenile

Map showing locations of FWQ, H41, DNB, GRF, and Fresno.
Conclusions

- Release temps will start decreasing in November
- May be above adult thresholds into November
- May be above spawning targets into December (depending on air temps)
Restoration Flow Guidelines
• Forecasting Restoration Flows, including tools for mitigating uncertainty.

• Gravelly Ford, minimum compliance point or flow target.

• Managing flood management releases to best meet riparian recruitment needs.
Need by RA for Supplemental Water

Note: Not to scale. Conceptual only.
13(i) w/Instant Access to Revenue

Note: Not to scale. Conceptual only.
Recapture / Recirculation
R&R Plan

- Recirculation Chapter drafted with Friant Contractor input
- Critical Path: Recapture Chapter and associated operations agreements
- Plan progress on hold due to resource needs for drought and current FWA lawsuit
- Resume work on recapture after litigation resolved
Unreleased Restoration Flows (URFs)

- February 2014, Settling Parties suspended Restoration Flows in response to drought
- 12,694 af of URFs banked with FID
- 11,000 af to Class 1 contractors in 2014
  - 23 Agreements executed
  - 7,066 af delivered to date
Investment Strategy
Investment Strategy Approach

<table>
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<tr>
<th>Initial Projects</th>
<th>Candidate Projects</th>
<th>Retained Projects</th>
<th>Prioritized Projects</th>
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<td>Collecting Project Ideas</td>
<td>Screening Project Ideas</td>
<td>Evaluate Projects in Order to Sort and Rank Project Ideas for Potential Federal Funding</td>
<td>Finalize Recommendations</td>
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<td>List of Objectives and Projects</td>
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Candidate Projects

- 60 Local and Regional Projects
Evaluation of Candidate Projects

Implementation Complexity Score
(Higher Score = Less Complex Project Implementation)

Federal Cost of RWA Benefit ($/acre-foot)

Bubble Size Represents Level of Project Definition
(Bigger Size = Higher Project Definition Score)
Scenario 1 - Cost-Effectiveness Only

Implementation Complexity Score
(Higher Score = Less Complex Project Implementation)

Federal Cost of RWA Benefit ($/acre-foot)

Bubble Size Represents Level of Project Definition
(Bigger Size = Higher Project Definition Score)

More Cost Effective

Less Cost Effective

Highly Complex or Potentially Difficult to Implement

Less Complex or Potentially Easier to Implement

Group A

Group B

Group C
Scenario 2 - Cost-Effectiveness & Implementation Complexity

Scenario 2 - Cost-Effectiveness & Implementation Complexity
(Higher Score = Less Complex Project Implementation)

More Cost Effective

Less Cost Effective

Federal Cost of RWA Benefit ($/acre-foot)

$1,000

$100

$10

$1

Group A

Group B

Group C

Bubble Size Represents Level of Project Definition
(Bigger Size = Higher Project Definition Score)

Highly Complex or Potentially Difficult to Implement

Less Complex or Potentially Easier to Implement
Scenario 3 - Cost-Effectiveness & Completeness of Project Definition

Implementation Complexity Score
(Higher Score = Less Complex Project Implementation)

More Cost Effective

Group B

709

Group A

702

Group C

727

Federal Cost of RWA Benefit ($/acre-foot)

$1

$10

$100

$1,000

$10,000

Less Cost Effective

Highly Complex or Potentially Difficult to Implement

Less Complex or Potentially Easier to Implement

Bubble Size Represents Level of Project Definition
(Bigger Size = Higher Project Definition Score)
Scenario 4 - Composite Weighted Score

Scenario 4 - Composite Weighted Score for All Four Criteria

- Other Related Benefits
- Completeness of Project Definition
- Implementation Complexity
- Performance & Cost (Federal)

Group A
Group B
Group C
### Process for Selecting Priority Projects

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<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Scenario 4</th>
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**Final Ranking:**

| A | A | A | A |

**Project Consistently Ranks High:**

- A
- A

...
Priority Projects

- 20 Priority Projects identified
Evaluation of 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

• Rank Priority Projects for Future Funding
Project Site Visits & Meetings

- Madera ID
- City of Fresno
- Fresno ID
- Orange Cove ID
- Lower Tule ID
- Kaweah Delta WCD
- Ivanhoe ID
- Delano-Earlimart ID
- Porterville ID, Saucelito, ID, Terra Bella ID
- Tulare ID
- Shafter Wasco ID
- Arvin-Edison WSD
- Paterson ID, Banta Carbona ID, West Stanislaus ID
- Friant Water Authority
## Evaluation Criteria & Metrics

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<th>ID</th>
<th>Name</th>
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<th>Water Source</th>
<th>Project Information</th>
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Result of Priority Projects Evaluation

Implementation Complexity Score
(Higher Score = Less Complex Project Implementation)

More Cost Effective

Federal Cost of RWA Benefit ($/acre-foot)

Less Cost Effective

Highly Complex or Potentially Difficult to Implement

Less Complex or Potentially Easier to Implement

Bubble Size Represents Level of Project Definition
(Bigger Size = Higher Project Definition Score)
Initial Ranking of Priority Projects
### Implementation Cost & Schedule

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- **Planning & Environmental**
- **Permitting, Acquisition, Agreements**
- **Design**
- **Construction**
Individual yields calculated assuming that each project was the only one being implemented (i.e., no competition)

No consideration of the effects of multiple projects on available supply/capacity

Above assumptions are reasonable but not realistic
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<th>Water Supplies</th>
<th>Project ID</th>
<th># of Projects</th>
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Priority Based Allocation of Supplies

Available Supply, Project (#1) Demand, Available Capacity and other project (#1) constraints

Calculate Yield for Priority #1 Project

Calculate Remaining Supply, Remaining Available Capacity

Project (#2) Demand, and other project (#2) constraints

Calculate Yield for Priority #2 Project

Delivery Priority Permutations

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Supply

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<th>San Joaquin River Surplus</th>
<th>Restoration Flow Recaptured at Delta</th>
<th>Restoration Flows Recaptured in the San Joaquin River</th>
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Surplus San Joaquin River Flows - Results

Graph showing yield (TAF) for different IDs, with markers indicating average, max, and min values.
Surplus Kaweah River Flows
Recirculated Restoration Flows Recaptured at Delta
Recirculated Restoration Flows
Recaptured Before Delta and D/S Merced River Confluence
Priority-Adjusted Yield

Graph showing the comparison of Yield and Priority-Corrected Yield for various Priority Projects. The graph displays 1,000 acre-feet per year on the y-axis and Priority Projects on the x-axis. The projects are categorized into two groups: Yield and Priority-Corrected Yield, with a distinction marked for Nonstructural Projects.
Key Findings

• Implementation of multiple projects that use the same water supply source can reduce the yield of each project. This would occur for the following sources:
  – Surplus Kaweah River flows
  – SJR Recapture of Restoration Flows
  – Recirculated water supplies

• Surplus SJR flows are sufficient to implement all evaluated projects with no expected yield reduction

• Recapture quantities are uncertain
Next Step

• Complete cost estimates
• Refine Priority Projects ranking, and seek input from Friant Districts
• Define the process for inclusion of new projects
• Define the process for updating the Investment Strategy Priority List
Draft Investment Strategy Dates

- July 2014 – Draft appraisal studies for review by each project proponent
  - Comments are being received
- Sep 2014 – Draft Investment Strategy Report for review by Friant Districts
Part III
Friant-Kern Canal Capacity Restoration

- Restore Design Maximum Flow Capacity and current design standards from MP 29.14 to MP 71.3

- Design-level 60%
  - Refining cost estimate earthwork assumptions and identifying non-essential pay items
  - Starting modification designs for affected bridges and drains
Madera Canal Capacity Restoration

• Demonstration Project advancing:
  – Low-flow valve at dam outlet
  – Sheet pile along ½ mile canal segment

• Feasibility Study second stakeholder meeting in early October to discuss Alternatives Formulation TM
Friant-Kern Canal Reverse Flow Pump-Back Project

- Red Bluff pumps and motors purchased and transported to FWA storage facility
- Feasibility study on hold
Groundwater Financial Assistance

Pixley ID- Joint Groundwater Bank

- 560 acre bank with 4.5 mile pipeline to new FKC turnout
- Construction complete December 2017.
Groundwater Financial Assistance

Porterville ID- In-Lieu Project

- Service area #1 is 1000 acres connected to Wood-Central Ditch
- Service area #2 is 650 acres connected to FKC
- Construction complete December 2016.
Groundwater Financial Assistance

Tulare ID- Cordeniz Basin Construction & Exchange Program

- 60 acre basin
- Environmental Compliance complete March 2015
- Construction complete July 2016
Shafter-Wasco ID- Madera Avenue Intertie

- Engineering analysis in progress to update project description.
Lecture Series: Recapture & Recirculation EIS
Recapture & Recirculation EIS/EIR

September 19, 2014
Visalia, CA
Topics

- Background
- NEPA/CEQA Overview
- Alternative formulation process
- Initial concepts
- Milestones and schedule
- Stakeholder and public engagement
Relationship to Water Management Projects

San Joaquin River Restoration Program EIS/EIR

Settlement Paragraph 16a

PL 111-11 Part III

Recapture and Recirculation 2013-2017 EA

Draft Recapture and Recirculation Plan

Recapture and Recirculation EIS/R

Friant-Kern Canal Pump-Back

Water Management Goal Investment Strategy

Final R&R Plan

ROD

R&R Annual EAs

Future

Preliminary draft – subject to change
NEPA/CEQA OVERVIEW
NEPA and CEQA Overview

• Required for activities financed, implemented or approved by lead agencies

• Evaluate a reasonable range of alternatives

• Analyze and disclose potential impacts

• Identify mitigation measures

• Public review and comment

• Analysis and public comments considered in agency decision
# NEPA and CEQA Similarities

<table>
<thead>
<tr>
<th>NEPA</th>
<th>CEQA</th>
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<tbody>
<tr>
<td><strong>Notice of Intent</strong></td>
<td><strong>Notice of Preparation</strong></td>
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<tr>
<td>Scoping</td>
<td>Scoping</td>
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<tr>
<td>Draft EIS</td>
<td>Draft EIR</td>
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<td>Public &amp; Agency Review</td>
<td>Public &amp; Agency Review</td>
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<td>Final EIS</td>
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<td>Public Review</td>
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<tr>
<td>Agency Decision</td>
<td>Agency Decision</td>
</tr>
<tr>
<td>Record of Decision</td>
<td>Notice of Determination, Statement of Overriding Consideration, Mitigation Monitoring Reporting Plan</td>
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NEPA & CEQA Differences

**NEPA**

- Federal agency lead
- Disclose impacts and mitigation measures
- Analyze alternatives at an equal level of detail
- Alts compared to No Action Alternative

**CEQA**

- CA agency lead
- Mitigate impacts to less than significant if feasible
- Analyze alternatives comparatively to proposed project
- Alts compared to existing conditions
Agency Coordination

NEPA

• Cooperating Agency: Federal, state, tribal or local agency having special expertise or jurisdiction by law over the resources under consideration
  • Invited to participate by the NEPA Lead Agency

CEQA

• Responsible Agency: Agency with discretionary or funding approval

• Trustee Agency: State agency having jurisdiction by law over natural resources held in trust
Cooperating Agency Roles

- Provide technical input to help identify and evaluate alternatives
- Review administrative draft documents
EIS/R Development

Public/ Stakeholders

Public Scoping
Alternatives Development
Impact Assessment
Admin Draft EIS/EIR
Public Draft EIS/EIR
Final EIS/EIR
ROD NOD

Address Public Comments

Cooperating, Trustees and Responsible Agencies

2014 2015 2016 2017
ALTERNATIVES DEVELOPMENT
Alternatives Development

• Reasonable Range of Alternatives
• Analyze “bookends” of alternative effects to provide flexibility
• Alternatives identified through:
  – FWA
  – Published studies
  – Scoping meetings
  – Settling parties
Alternatives Development

**Define Concepts**
- Identify Settlement objectives
- Develop a range of concepts for recapture and recirculation from stakeholder input and scoping
- Develop concepts screening criteria
- Screen concepts

**Refine Alternatives**
- Refine remaining concepts into a range of alternatives
- Conduct detailed engineering analysis and environmental review of the alternatives
INITIAL CONCEPTS
Potential Study Area

- Potentially affected recapture area
- Friant service area
- Recirculation conveyance areas
- Other potential SWP and CVP areas affected by R&R
- Other areas identified during scoping
Categories

• Recapture
  – Lower San Joaquin River
  – Delta

• Recirculation
  – Direct Delivery
  – Exchanges
  – Transfers

• Storage Facility Operations
• CVP and Delta Mendota Canal conveyance

• SWP and California Aqueduct conveyance
• Existing Facilities

• Expanded Existing Facilities

• New Pumping Facilities
Recapture - Lower San Joaquin River

• **Existing Facilities**
  – Banta Carbona ID
  – West Stanislaus ID
  – Patterson ID
Recapture – Lower San Joaquin River

- New recapture facility between Merced and Stanislaus Rivers
- 1000 cfs with conveyance to the DMC
- Consider up to 5 locations
• Direct delivery to Southern Friant Contractors
  - Arvin Edison WSD
  - Cross Valley Canal
  - Friant Kern Canal reverse flow
Recirculation – Exchanges

- Exchanges with westside contractors having eastside supplies
  - Recirculation water delivered at SWP turnouts
  - Exchanged non-CVP from Kings, Kaweah, Tule, Kern Rivers
Recirculation – Transfers

- CVP contractors
- SWP contractors
- Other water agencies
Recirculation – Storage Facility Operations

- San Luis Reservoir
- San Joaquin Valley groundwater banks and surface reservoirs
- Out-of-Basin groundwater banks and reservoirs
MILESTONES AND SCHEDULE
Schedule

Public Scoping
Fall 2014

Develop Alternatives
Early 2015

Impact Assessment
Late 2015

Admin Draft EIS/EIR
Early 2016

Public Draft EIS/EIR
Mid 2016

Final EIS/EIR
Early 2017

ROD/NOD
Mid 2017
STAKEHOLDER & PUBLIC ENGAGEMENT
Stakeholder Technical Engagement

- Settling Party Meetings
- Cooperating Agency Meetings
- Water Management Technical Feedback Meetings
- Other Ideas?
Public Engagement

• Public Scoping
• Public Review of Draft EIS/R
• Public Meeting during public review period
Contact Information

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QUESTIONS?
Public Comment / Next Meetings
## Next Meetings

<table>
<thead>
<tr>
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<th>Date</th>
<th>Location</th>
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<tbody>
<tr>
<td>Friday</td>
<td>November 21, 2014</td>
<td>Visalia</td>
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<tr>
<td>TBD</td>
<td>January 2015</td>
<td>Reno</td>
</tr>
<tr>
<td>Friday</td>
<td>March 20, 2015</td>
<td>Visalia</td>
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<tr>
<td>Friday</td>
<td>June 19, 2015</td>
<td>Sacramento</td>
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Weigh Anchor – it be the end!

International Talk Like a Pirate Day