Water Management
Technical Feedback Meeting

June 17, 2011
Fresno, CA

Agenda Overview

- 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
Comments on Meeting Notes

Water Supply Briefing
SCCAO
Interim Flow Releases and Accounting

Restoration Administrator Recommendation

- Default GRF
- RA Friant (cfs)
- RA GRF (cfs)
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.

Recent Flows

![Flow Rate (cfs)](chart)

- SJN
- SJF
- SJB
- JBP
- GRF
- MEN
- SDP

Flow Rate (cfs)
RECOVERED WATER ACCOUNT

- 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

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

Restoration Flow Guidelines
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

Recapture / Recirculation
Recapture and Recirculation Plan

- Westside Allocation
  - Analyzing internally

- Plan Funding
  1. Identify costs
  2. Determine responsibility for payment of costs

Recirculation Options

- East-West Transfers or Exchanges
- SOD Exchange for Non-Project Supply
- Direct Delivery
- Sale of Water
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
Project Update

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

- Alternative 5(a) – Kings River to Kaweah River
- Alternative 5(b) – Kings River to 5th 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.”
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.

Study Area
Problem, Need, Opportunities

- 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

<table>
<thead>
<tr>
<th>Model Reach</th>
<th>FKC Reach</th>
<th>Friant Contractors</th>
<th>Current Capacity (cfs)</th>
<th>Maximum Capacity (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project Dam to Kings River Check</td>
<td>CITY OF FRESNO, GARCIES INTERNATIONAL</td>
<td>4,000</td>
<td>4,000</td>
</tr>
<tr>
<td>2</td>
<td>Kings River Check to 5th Ave. Check</td>
<td></td>
<td>4,000 - 4,100</td>
<td>4,800</td>
</tr>
<tr>
<td>3</td>
<td>5th Ave. Check to Deer Creek Check</td>
<td>LOWER TULE, PORTERVILLE, SADELICO, TSH, RODDLE MACE, TERRA BELLA I.D.</td>
<td>4,000</td>
<td>4,000</td>
</tr>
<tr>
<td>4</td>
<td>Deer Creek Check to Pojo Creek Check</td>
<td>DELAND PAR, MATT, SOUTHERN S.U.M.U.D.</td>
<td>3,000</td>
<td>3,000</td>
</tr>
<tr>
<td>5</td>
<td>Pojo Creek Check to Delaware River Check</td>
<td>SHAFFER YAKO, ARVIN CO</td>
<td>2,170</td>
<td>2,170</td>
</tr>
<tr>
<td>6</td>
<td>Delaware River Check to Kern River Check</td>
<td>ARVIN CO</td>
<td>2,170</td>
<td>2,170</td>
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</table>
**Objective**

“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.”

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**Planning Constraints**

- 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

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action</td>
<td>SJRRP Flows</td>
</tr>
<tr>
<td>Alternative 1</td>
<td>&quot;High Priority&quot; Reaches</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>Alternative 1 and restoring to Designed Normal Flows</td>
</tr>
<tr>
<td>Alternative 3</td>
<td>Designed Maximum Flows applying original Reclamation designs.</td>
</tr>
<tr>
<td>Alternative 4</td>
<td>Designed Maximum Flows applying current Reclamation Design Standards</td>
</tr>
</tbody>
</table>

### Alternative 4 – “Full-Fix”

- 113 miles required restoration
- $72 million
- Reformulation of Feasibility Study
  - Not required to restore entire FKC
  - Prioritize Kings to 5th Avenue
  - Must result in operational increase of FKC
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 5th Avenue Check
  - MP 29.14 to MP 88.2

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Mileposts</th>
<th>Distance (miles)</th>
<th>Current Capacity (cfs)</th>
<th>Maximum Capacity (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5(a) and 5(b)</td>
<td>29.14 to 71.29</td>
<td>42.15</td>
<td>4,500</td>
<td>5,300</td>
</tr>
<tr>
<td>5(b)</td>
<td>71.29 to 88.22</td>
<td>16.93</td>
<td>4,105</td>
<td>4,500</td>
</tr>
</tbody>
</table>

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

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

Net NED Benefits

- NED Benefits – NED Costs

<table>
<thead>
<tr>
<th></th>
<th>Alternative 5(a)</th>
<th>Alternative 5(b)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Without Part-III</td>
<td>With Part-III</td>
</tr>
<tr>
<td>Total NED Benefit</td>
<td>$32,900,000</td>
<td>$32,900,000</td>
</tr>
<tr>
<td>Total NED Costs</td>
<td>$24,530,000</td>
<td>$24,530,000</td>
</tr>
<tr>
<td>Net NED Benefits</td>
<td>$8,370,000</td>
<td>$33,320,000</td>
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</table>
NED Benefits

• Benefits
  
  – Increased ability to divert water supplies for surface deliveries.

  – Increased ability to divert water supplies for groundwater recharge

<table>
<thead>
<tr>
<th></th>
<th>Without Part-III</th>
<th>With Part-III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefit (af)</td>
<td>5,000</td>
<td>8,000</td>
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Ability to Increase Deliveries

Figure 11. Illustration of Ability to Increase Deliveries
Figure ES-3. Change in Friant Dam Spills without Part-III Projects

Figure ES-4. Change in Friant Dam Spills with Part-III Projects
Mean CVP/SWP Monthly Delta Export

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

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

<table>
<thead>
<tr>
<th>Period</th>
<th>NED Benefits Without Part-III Projects</th>
<th>NED Benefits With Part-III Projects</th>
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<tbody>
<tr>
<td>Annual</td>
<td>$658,000</td>
<td>$1,157,000</td>
</tr>
<tr>
<td>50 Years</td>
<td>$32,900,000</td>
<td>$57,850,000</td>
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NED Cost – Alternative 5(a)

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Construction Cost</td>
<td>–</td>
<td>$15,390,000</td>
</tr>
<tr>
<td>Mobilization</td>
<td>5%</td>
<td>$769,500</td>
</tr>
<tr>
<td>Design Contingencies</td>
<td>10%</td>
<td>$1,615,500</td>
</tr>
<tr>
<td>Construction Contingencies</td>
<td>20%</td>
<td>$3,556,000</td>
</tr>
<tr>
<td>Non-Contract Costs</td>
<td>15%</td>
<td>$3,199,600</td>
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<tr>
<td><strong>Total Cost</strong></td>
<td></td>
<td><strong>$24,530,000</strong></td>
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Project Feasibility

- Technical Feasibility
- Environmental Feasibility
- Economic Feasibility
- Financial Feasibility
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.
MADERA CANAL CAPACITY RESTORATION FEASIBILITY STUDY
Friant-Kern Canal Reverse Flow Pump-Back Facilities Project
Reverse Pump Feasibility Study

- Surveying
- Evaluating configurations

Schedule

- Develop Alternatives: May
- Draft Designs: October
- Feasibility Cost Estimates: January
- Draft Feasibility Report & EA: May/June
Public Comment / Next Meetings

Next Meetings

<table>
<thead>
<tr>
<th>Day</th>
<th>FWA Advisory Committee Meeting in Visalia</th>
<th>SJRRP WM Technical Feedback Meeting in Fresno</th>
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<tbody>
<tr>
<td>Friday</td>
<td>June 10</td>
<td>June 17</td>
</tr>
<tr>
<td>Friday</td>
<td>July 8</td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td>August 5</td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td>September 9</td>
<td>September 16</td>
</tr>
<tr>
<td>Friday</td>
<td></td>
<td>November 18</td>
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