Reach 3 and 4A Landowner Meeting

March 1, 2012
Los Banos Community Center
645 7th Street, Los Banos, CA
Agenda

Purpose: Begin discussion and implementation of seepage projects in Reaches 3 and 4A

Outcome: Schedule discussions on individual projects
Agenda

Purpose: Begin discussion and implementation of seepage projects in Reaches 3 and 4A

• Introduction
• Program Update
• Seepage Management Plan
• Seepage Project Handbook
• Seepage Project Overview
• Landowner Perspective and Discussion on Project Implementation
• Next Steps
Objectives

• Convey Interim and Restoration Flows while avoiding seepage impacts
• Identify potential projects that would avoid seepage impacts
• Identify locations for projects with potential for seepage impacts
• Develop a common understanding of the process, procedures and expectations for projects
• Program EIS/R
• Interim Flows
• Phase I Projects
  • Reach 2B – Mendota Pool Bypass
  • Reach 4B – Flow Routing
  • Arroyo Canal / Sack Dam – fish screen and passage
• Fish Reintroduction
Landowner Involvement

- Environmental Document Review
- Site-Specific Meetings
- Technical Feedback Groups
- Contact SJRRP Staff
2012 Recommended Interim Flows

- Actual Friant Releases
- RA Recommendation at Friant
- Gravelly Ford Flow Target
- Sack Dam Flow Target
Iterative Approach to Increase Flows while Avoiding Impacts

1. **Establish Field Threshold**
2. **Estimate Acceptable Flows**
3. **Identify Potential Increases**
4. **Monitor Response**
5. **Evaluate Projects to Avoid Impacts**
6. **Find Limit of Flows without Impacts**

The process is iterative, allowing for continuous assessment and adjustment to avoid impacts while increasing flows.
Seepage Management Plan

• Purpose: describe the approach to conveying flows while reducing or avoiding adverse seepage impacts

• Seepage & Conveyance Technical Feedback Group provides a way to solicit input
Elements of the SMP

• Seepage Impacts
• Locations of Known Risks
• Conceptual Model
• Monitoring Program
• Thresholds and Triggers
• Site Visit and Response
Seepage Impacts

• Shallow Groundwater
• Salinity in the Crop Root Zone
• Levee Instability
Locations of Known Risks

Legend
- SJRRP Wells
- CCID Well
- Cbanion Ranch - CCID
- San Juan Ranch - NFF
- Sierra Ave - CCID
- Landowner Identified Historical Seepage
- FMC Identified Impacted Parcels
- SCTF Identified Seepage Parcels

StreetMapUSA
- Street
- Interstate
- US Highway
- State Highway

Landowner Identified Locations
Reach 2B

Chowchilla Bifurcation Structure
• Thresholds identify potential problems so that Reclamation can establish operating criteria to manage flows
Monitoring Program
Thresholds

• Thresholds set in each monitoring well
• The approach to establish thresholds
  – Start conservative
  – Refine assumption with site-specific information
• Methods include:
  – Agricultural Conditions
  – Historical Data
  – Drainage Direction
Triggers and Operations

• Monitoring Data

• Triggers
  – Flow Bench Evaluations
  – Daily Flow Evaluations
  – Seepage Hotline Call

• Site Visit

• Response
  • Refine thresholds assumption with site-specific information

Set Operational Criteria
Flow Bench Evaluations

• Purpose: Avoid material adverse seepage impacts

• Reclamation performs Flow Bench Evaluations prior to increasing flows
Flow Bench Evaluations

- Flow Bench Evaluations include:
  1) Conveyance Capacity
  2) Groundwater Telemetry
  3) Groundwater Manual Measurements
  4) Flow Stability
  5) Groundwater Projections
  6) Mendota Pool Operations
  7) Feedback
    a) Landowners (Seepage Hotline)
    b) Operators: LSJLD, CCID and SLCC
Daily Flow Evaluations

• Reclamation performs daily evaluations when flows exceed 475 cfs

• Daily Flow Evaluations Include
  – Conveyance Capacity
  – Groundwater Telemetry
  – Mendota Pool Operations
  – Landowner Feedback (Seepage Hotline)
Flow Bench & Daily Flow Evaluations

- Reclamation documents evaluations at: www.restoresjr.net/flows/FlowScheduling/flow_scheduling.html
Site Visit and Response

• Hotline Intake: A landowner calls the seepage hotline or sends an email:
  916-978-4398
  interimflows@restoresjr.net

• Site Visit: Reclamation views the problem and meets with the landowner

• Response: Reclamation identifies a course of action
Seepage Hotline Intake

- Location
- Access
- Distance from the River
- Proximity to Levee Toe
- Description of Seepage
- Potential Impact
- Relationship to Interim Flows
- Immediacy of Impact
Site Visit

- Description of Seepage
- Type of Impact
- Interim Flow Relationship
- Operations Recommendation
- Follow-Up Recommendation
- Photo Log
Site Visit Data Collection

- Landowner Input
- River Stage
- Soil Texture
- Hand Auger Holes
- Drive point Installation
- Infrastructure
- Crop Health
Response

• Adjust Monitoring

• Establish New Thresholds

• Set Operations Criteria

• Limit or Reduce Flows
Project Types

• Real Estate Actions
  – Easements
  – Acquisition

• Physical Projects
  – Tile drains
  – Slurry walls
  – Drainage ditches
  – Shallow well pumping
  – Conveyance improvements
Introduction

- Purpose: Define expectations, procedures and timelines for installation of seepage projects

Technical Evaluation

Process repeats until ultimate goal of 4,500 cfs is achieved

Completion & Monitoring

Projects Initiated
• Site Evaluation
• Environmental Compliance
• Design
• Plan Formulation
• Design Data Collection
• Construction
• Financial Assistance
Site Evaluation

- Site Evaluations collect data to guide plan formulation
Site Evaluation Process

1) Records Review
2) Data Collection
3) Analysis
4) Reporting

- Methods Report details expected data collection: records and fieldwork
Existing Records Review

Reclamation has:
- Precipitation Records
- Historic Aerial Photos

Reclamation may have:
- Soil Texture
- Soil Salinity Sampling
- Groundwater Monitoring
- Surface Water Monitoring

Landowner may have:
- Yield Data
- Irrigation Records
- Fertilizer Applications
- Aerial Photos
- Soil Texture
- Soil Salinity
- Infrastructure
Data Collection

- Salinity Sampling via hand augers
- EM 38
- Water Quality Sampling
- Hydraulic Conductivity Tests
- Staff Gages
- Monitoring Wells
Analysis

- Cross-sections
- Water surface vs. groundwater profiles
- Flow nets
  - Soil texture
  - Hydraulic conductivity
- Site-specific influences
Site Evaluation Report

• Provides for landowner input – are we considering all relevant data?
• Gathers site-specific soil and water data together for future landowner use
• Sets initial alternatives for further analysis as Reclamation must consider a range of reasonable approaches
Plan Formulation and Project Info

• Plan Formulation chooses a project from alternatives
• A Project Report summarizes design and compliance data regarding the chosen project
Appraisal Level Design

• Reclamation must consider a range of reasonable approaches

• For all the initial alternatives in the Site Evaluation Report, the following will be developed:
  – Appraisal Level Designs
  – Costs
Plan Formulation

• Alternatives must meet the purpose, but can have different benefits, costs and impacts
• We use criteria to understand the advantages and disadvantages of the different alternatives
• At the Plan Formulation meeting Reclamation and the landowner will use the criteria to chose a project
Plan Formulation / Alternatives
Evaluation High Priority Criteria

- Increases Interim Flows to 4,500 cfs
- Effectiveness in protecting lands to 4,500 cfs
- Landowner Acceptability
- Regional Integration
- Water Quality
- Suitability to Site
- Long-term Operations and Maintenance
- Fisheries Impacts

Preliminary draft – subject to change
Plan Formulation / Alternatives
Evaluation Medium Priority Criteria

- Revise bullets
- Project Ownership
- Subsidence
- Coordination with Other Programs
- Fish Habitat Opportunities
- Cost

Preliminary draft – subject to change
Plan Formulation / Alternatives
Evaluation Low Priority Criteria

• Environmental compliance
• Regulatory permitting (time)
Environmental Compliance Process
Flow Chart

Project Description

Endangered Species Act (ESA)

Section 106 of National Historic Preservation Act (106)

Indian Trust Assets (ITA)

National Environmental Policy Act (NEPA)

Corps of Engineers (404, Section 10, 408)

San Joaquin Valley Air Pollution Control District permits *

Central Valley Regional Water Quality Control Board approvals: National Pollution Discharge Elimination System (NPDES), Section 401 Water Quality Certification, and Basin Plan for San Joaquin River *

* State permits that are obtained by Reclamation because the state has been delegated authority of implementing a federal statute.
Endangered Species Act (ESA)

• Field reviews/surveys needed to identify both:
  • Presence/absence of species
  • Presence/absence of potential habitat

• Reclamation then prepares an effects analysis and determines:
  - No Effect
  - May effect, not likely to adversely affect (NLTAA)
  - Likely to adversely affect (LTAA)

• For NLTAA or LTAA, then need U.S. Fish and Wildlife Service and/or National Marine Fisheries Service consultation
National Historic Preservation Act (Section 106)

- Field surveys will be needed to identify:
  i. Surface cultural and archaeological resources
  ii. Subsurface cultural and archaeological resources
  iii. Eligibility status of resources

- Reclamation reports to the California State Historic Preservation Officer (SHPO) with a determination

- SHPO has 30 days to respond
National Environmental Policy Act (NEPA)

• NEPA documents impacts to environmental resources including, but not limited to:

  – Aesthetics
  – Air Quality
  – Biological Resources
  – Cultural Resources
  – Environmental Justice
  – Geology and Soils
  – Hydrology (e.g., water quality, groundwater, etc.)

  – Noise
  – Public Health
  – Recreation
  – Socioeconomics
  – Transportation
  – Utilities
  – Etc.
Environmental Compliance

• Endangered Species Act Effects Analysis
• Cultural Resources Analysis
• NEPA or joint NEPA/CEQA document
• Potential Regional Water Quality Control Board permit / approval
• Potential Army Corps of Engineers permit
• Potential San Joaquin Valley Air Pollution Control District permit
Project Report

- Summarizes work on project for landowner review
- Includes:
  - Appraisal Level Designs, Costs and Specs for alternatives
  - Feasibility Level Design for chosen alternative
  - Environmental Compliance and permitting
Reclamation Design Process

- Data Collection
- Concept
- Design
- Specification
Design Data Collection

• Can be lengthy process
• Important to define initial design data needs early in the process
• Begins before design concept phase
• Includes:
  – Geotechnical Investigation
  – Surveying
Concept Stage (30%)

- Field exploration
- Materials testing
- Hydraulic studies
- Cost estimate and schedule
- TMs
- Value engineering
Design Stage (60%)

• Selected conceptual design is refined
• Design data collection, testing and analysis should be completed
• Cost estimate and schedule updated
• Permit requirements are initiated
• Preliminary drawings completed
Specification Stage (90%)

- Lab testing reports completed
- TMs finalized and approved
- Specifications sent for review
- Quantities and bid schedules complete
Bid and Award

• Specification Review
• Final Specifications and Design Summary
• Decision Memorandum Completed:
  – Final design briefing, drawings made available
  – Final Specifications completed
• Landowner Review of Decision Memorandum
• Bid
• Award
• Construction
Construction

- Construction includes coordination to work around landowner activities and ensure accuracy
Financial Assistance

- Financial assistance agreements define the scope of work and terms for receiving federal money.
- Components:
  - Design and Construction
  - Ownership
  - Operations and Maintenance
  - Water Discharge
  - Monitoring
  - Cost Share
Agreement

• Ownership Options
  – Reclamation-owned project on private land
  – Reclamation-owned project on district land
  – District-owned project on district land
  – District-owned project on private land
  – Landowner-owned project on private land
Agreement / Financial Assistance

• Operations and Maintenance Options
  – District O&M
  – Landowner O&M
  – Reclamation consultant O&M

AND

– Performance measures for operations and maintenance in the agreement
Water Discharge Choices

– Discharge to river or canal?
  • Depends on water quality
  • Ownership of water

– Landowner, district, or Reclamation holds permits?
• Long-term Monitoring
  – Water quality monitoring for permit compliance or water supply compliance performed by landowner, district, or Reclamation?
  – Long-term groundwater monitoring performed by landowner, district, or Reclamation?
Agreement / Financial Assistance

• Cost-share
  – Projects may prevent historical flooding impacts on lands – approximately 1 out of 3 years
  – Cost-share with districts or landowners?
Katrina Harrison

SEEPAGE PROJECT

OVERVIEW

Preliminary draft – subject to change
Seepage Project Implementation

Process repeats until ultimate goal of 4,500 cfs is achieved.
Technical Evaluation

- Technical Evaluation – Book of Seepage Parcel Groups from SMP
- Flows held below thresholds
Technical Evaluation

• Existing Data Includes:
  • Groundwater Data
  • Anecdotal Inundation Data
  • Cross-sections
  • Profiles
  • Locations
Location Map – Parcel Group “A”
Groundwater Map – Parcel Group “A”

LEGEND
- - Parcel “A” Boundary
- - Groundwater Contours

Well 10
Well Z
Well G
Well A
Well M
Well K
San Joaquin River
GW Depth = 6'
GW Depth = 4'
GW Depth = 2'
GW Depth = 4'
Well J
Well D
Inundation Map – Parcel Group “A”
Cross-Section – Parcel Group “A”
Profile – Parcel Group “A”

- Top of Casing (TOC)
- Ground Surface (GS)
- Threshold
- Screened Interval
- Water Surface Profile -500 cfs
- Water Surface Profile -1500 cfs
- Water Surface Profile -2500 cfs
- Ground Surface
- Levee
Next Tier Projects Initiated

- Projects Initiated – Seepage Project Handbook Process
- Temporary projects in Reaches 2B and 4B
- Flows held below thresholds
First Tier Parcel Groups

• Selected parcel groups for priority evaluation
• Highest priority locations to resolve potential impacts and increase river flows
• Criteria
  • Observed 2011 seepage AND/OR
  • District manager observed historical seepage AND/OR
  • Shallow nearby groundwater level above 4 feet, unaffected by irrigation
Priority Parcel Groups
Priority Parcel Groups
Priority Parcel Groups
Priority Parcel Groups
Priority Parcel Groups
Projects Initiated

Initial Selection Criteria (from fall SCTFG):

• Implement a section of CCID Interceptor Plan
• Initiate a seepage project quickly
Projects Initiated

- Parcel Group 87
  - Kick-off meeting this morning
- Parcel Group 159
  - Kick-off meeting to be scheduled soon, working on records review
- Parcel Group 74
  - Kick-off meeting to be scheduled soon, working on records review
Completion and Monitoring

- Project Complete – Monitoring and Evaluation
  - Long-term Monitoring
  - Is the project functioning?
  - Increase flows to new flow constraint
Seepage Project Concerns

Purpose:
• Hear landowner comments regarding seepage project process
• Address concerns about projects
• Solicit additional suggestions to address as a group or one-on-one
Project Approach

1. Site Evaluation (6 mo.)
   - Reclamation
   - Land Owner
   - Site Visit
   - Prepare Methods Report
   - Review Methods Report
   - Landowner Provides Site Data
   - Prepare Site Evaluation Report
   - Review Site Evaluation Report
   - Final Site Evaluation Report

2. Project Report (4 mo.)
   - Reclamation
   - Land Owner
   - Appraisal Level Design and Costing
   - Plan Formulation Meeting
   - Environmental Compliance
   - Prepare Project Report
   - Review Project Report
   - Final Project Report

3. Financial Assistance (Varies)
   - Reclamation
   - Land Owner
   - Meeting
   - Supply DUNS Number
   - Completed Form SF-424
   - Reclamation Contracting
   - Signed Financial Agreement
   - Invoicing
   - Reporting
   - Close-Out

4. Design (Varies)
   - Design Data Collection
   - Final Design
   - Prepare Final Design Report
   - Review of Final Design Report
   - Final Design Report

5. Bid, Award, Construction (Varies)
   - Bid, Award
   - Pre-Construction Meeting
   - Pre-Construction Survey
   - Construction

Contact
Contact the Seepage Hotline to schedule further discussion or a site visit.
Phone: 916-978-4398
Email: interimflows@restoresjr.net

Preliminary draft – subject to change
Inside vs. Outside of Levees

LEGEND

- Seepage ditch return
- Restored riparian vegetation / habitat
- Farmland
- Levee
# Schedule

<table>
<thead>
<tr>
<th>Event</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Site Visit. Kicks off the seepage project process.</td>
<td>Following hotline call follow-up site visit or identification in SMP</td>
</tr>
<tr>
<td>Site Evaluation – Methods Report</td>
<td>~1 month after site visit</td>
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<tr>
<td>Site Evaluation – Fieldwork &amp; Analysis</td>
<td>Following landowner approval of Methods Report</td>
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<tr>
<td>Site Evaluation Report</td>
<td>~6 months after site visit</td>
</tr>
<tr>
<td>Appraisal Level Designs for Initial Alternatives</td>
<td>Following Site Evaluation Report</td>
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<tr>
<td>Plan Formulation Meeting</td>
<td>~8 months after site visit</td>
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<tr>
<td>Feasibility Design, quantities, Cost Estimates</td>
<td>Following plan formulation and choosing of preferred alternative</td>
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<tr>
<td>Project Report</td>
<td>~10 months after site visit</td>
</tr>
<tr>
<td>Environmental Compliance</td>
<td>~10 months after site visit</td>
</tr>
<tr>
<td>Financial Assistance Agreement</td>
<td>~10 months after site visit</td>
</tr>
<tr>
<td>Final Design</td>
<td>Following Project Report</td>
</tr>
<tr>
<td>Bid</td>
<td>Following final design</td>
</tr>
<tr>
<td>Pre-Construction Meeting</td>
<td>Following bid, with contractor</td>
</tr>
<tr>
<td>Pre-construction surveys</td>
<td>Immediately prior to construction</td>
</tr>
<tr>
<td>Construction</td>
<td>Following notice to proceed</td>
</tr>
</tbody>
</table>
Meetings and Reviews

- Initial Site Visit
- Methods TM Review
- Site Evaluation TM Review
- Plan Formulation Meeting
- Project Report Review
- Pre-Construction Meeting

- Others to add?
Deliverables

• Site Visit Forms
• Methods TM
• Site Evaluation Report
  – Appraisal Level Designs
• Project Report
  – Feasibility Level Design
  – Environmental Compliance & Permitting
  – Financial Assistance Agreement
• Final Design, Quantities, Cost Estimates
Challenges

- Ownership
- Operations and Maintenance
- Water Discharge
- Water Rights
- Long-term Monitoring
- Cost-share
- Terms of an Agreement
Next Steps

• Feedback from Landowners
• Comments on Seepage Project Handbook
• Schedule Site Visits
• Schedule one-on-one discussions
Action Items and Review

• Update Action Items
  – Revised Actions
  – New Actions
Contact

• Technical Feedback Group – David Mooney
  – 916-978-5458
  – dmmooney@usbr.gov

• Seepage Concerns – Seepage Hotline
  – 916-978-4398
  – interimflows@restoresjr.net