Seepage and Conveyance Technical Feedback Group

January 14, 2011
11704 W. Henry Miller Ave.
Dos Palos, CA

Agenda

• Introductions
• Purpose and Charter
• Monitoring
• Impact Thresholds
• Information and Data Exchange
• Operating Criteria and Triggers
• Next Steps

TECHNICAL FEEDBACK GROUP
PURPOSE AND CHARTER
**Technical Feedback Group Purpose**

- Provide a constructive forum
  - To improve the information exchange, knowledge, and understanding
  - Among agencies, water districts, landowners, and Settling Parties
  - Regarding Interim and Restoration flows, conveyance, and seepage issues

**Objectives**

- Develop an improved Seepage Monitoring & Management Plan before implementing spring Interim Flows (March 2011)
- Identify and evaluate actions to avoid seepage impacts
- Clarify future claims process

**Core Topics**

- Data & Information Consolidation
- Monitoring Plan
- Impact Thresholds
- Impact Avoidance Actions
- Process for Potential Future Claims
Related Topics

- Temporary Access
- Claims for Impacts Last Year
- Draft Program EIS/EIR
- Reach 4B Flow & Routing Issues
- RA and TAC Flow Recommendations
- Flood Management & Levee Improvements
- Funding and Implementation Timing

Process & Decision-making

- 3 to 5 meetings through February
  - Focused on SMMP
- Additional topics and meetings identified and considered as we proceed
  - Update Charter in March 2011
- Reclamation and its partner agencies retain decision authority for Program implementation

Seepage Monitoring & Management Plan

- Purpose: describe the approach to conveying flows while reducing or avoiding adverse seepage impacts
- Uses for the SMMP include:
  - Disclosure of approaches
  - Guidance for actions
  - Forum for input
- The Technical Feedback Group provides a way to solicit input.
Elements of the SMMP

- Seepage Impacts
- Locations of Known Risks
- Operations Conceptual Model
- Monitoring Program
- Thresholds and Triggers
- Site Visit and Response
- Site Evaluation and Projects

Discussion Topics

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<tr>
<th>Dec</th>
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<td>Thresholds</td>
<td>Risk Areas</td>
<td>Crop Types</td>
<td>Operations</td>
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<td>Farming Practices</td>
<td>Soil Conditions</td>
<td>Predictive Evaluation</td>
<td>SMMP</td>
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<td>Site Visits</td>
<td>Triggers</td>
<td>Monitoring</td>
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<td>Operations</td>
<td>Evaluation &amp; Response</td>
<td>Site Visit and Response</td>
<td>Projects</td>
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Milestones

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<td>12/17 Well Atlas</td>
<td>1/3 Operations</td>
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<td>1/3 Operations</td>
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<tr>
<td>1/10 Wells &amp; Background Data</td>
<td>2/14 Responses</td>
<td>2/18 Draft SMMP</td>
<td>3/1 Final SMMP</td>
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<tr>
<td>TFG Meeting</td>
<td>Agency Deliverable</td>
<td>Stakeholders</td>
<td>Comments</td>
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**Topics Parking Lot**

- Conversion of row crops to permanent crops and impact on thresholds
- Timing of flows and relationship to severity of seepage impacts
- Data & Information Exchange
  - Soil conditions
  - Irrigation practices
  - Tile drains
- Disposal of tile drain water

**Topics Parking Lot (Cont.)**

- Reach 4B high flow issues
- RA and TAC Interim Flow Recommendations
- Claims process
- Revisit Charter
- Projects to reduce or avoid seepage impacts
  - Remove channel barriers
- Vegetation management in and along the river

**Action Items**

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<tr>
<th>Action Items</th>
<th>Due</th>
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<tbody>
<tr>
<td>1. Revise draft Charter and distribute to group</td>
<td>1/10/11</td>
<td>Gardner</td>
<td>Posted 1/12/11</td>
</tr>
<tr>
<td>2. Share survey data with stakeholders</td>
<td>1/26/11</td>
<td>Harrison</td>
<td>Updating Well Atlas</td>
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<tr>
<td>3. Add ground elevation and soil temperature to monitoring program items</td>
<td>1/10/11</td>
<td>Harrison</td>
<td>Ground elevation data incorporated into Well Atlas. Need more info on issue of soil temperature</td>
</tr>
<tr>
<td>4. Plot the profile of flows, stage, and well data to identify sensitive areas</td>
<td>1/10/11</td>
<td>Mooney, Harrison</td>
<td>Two plots included in Thresholds TM on 1/10/11. Remaining plots posted 1/13/11</td>
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<tr>
<td>5. Identify field elevation data to include in the analysis</td>
<td>1/10/11</td>
<td>Harrison</td>
<td>Included in Thresholds TM, 1/10/11</td>
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<tr>
<td>6. Share well Meta data and well screen information that is not in the Well Atlas.</td>
<td>1/26/11</td>
<td>Lee</td>
<td>Rough draft provided to Chris White, 12/20/10. Data being incorporated into Well Atlas</td>
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Follow-Up on Comments

MONITORING APPROACH AND POTENTIAL IMPROVEMENTS

Monitoring Overview

• SMMP Elements Addressed Include
  – Locations of Known Risks
  – Monitoring Networks

• Discussion Objectives for Today
  – Review what we heard from the last meeting
  – Indicate how we responded to comments
  – Check back for additional concerns

Monitoring Feedback

Monitoring
- Flow Stage Profiles
- Risk Areas
- EC, soil moisture
- Rainfall and Irrigation

We need more information on this monitoring feedback.

Thresholds
- Soil Conditions
- Ground Elevation Surveys
- Irrigation Practices
- Drainage Practices
- Capillary Rise
- Key Wells
Monitoring Revisions

- Incorporation of measurements from CCID
- Added field and well elevations
- Proposed transect in Reach 4B
- Identified priority wells for operations
- Identified monitoring to understand physical processes

Flow and Stage Profiles

Location of Known Risks
Proposed Monitoring Wells

Implementation Steps

- Identify Locations for Monitoring
- Acquire Landowner Permission
  - Temporary Entry Permit
  - Monitoring Agreement
- Permitting and Environmental Compliance
- Construction
- Testing (Completion)
- Data Collection

Monitoring Summary

- Location of Known Risk in the seepage management plan documents anecdotal information – February 18
- The Monitoring Well Atlas documents improvements to the groundwater network – January 26
- The thresholds discussion ties monitoring information into the potential for impacts – today
Thresholds Overview

- Thresholds identify potential problems so that Reclamation can establish operating criteria to manage flows

Threshold Methods

- The approach to establish thresholds will
  - Start conservative
  - Refine assumption with site-specific information
- Methods will sequentially evaluate
  - Agricultural Conditions
  - Historical Data
  - Drainage Direction
Threshold Agricultural Conditions

- Root Zone
- Ground Surface
- Irrigation
- Capillary Rise
- Groundwater Table

Threshold Historical Data

- CCID Well Database
- DWR Well Database

Threshold Drainage Direction

- Groundwater Elevation
- River Stage
- Relative Differences
Integration of Results

- Reclamation evaluated all wells for agricultural conditions
- Historical data shows groundwater elevations higher than agricultural conditions in some fields and we would want to maintain those conditions
- Some fields may require consideration of drainage to support continued agriculture

Threshold Conclusions

- Potential Areas for Feedback
  - New Well Locations
  - Irrigation Records
  - Timing of Irrigation and Planting
  - Poorly Drained Soils
  - Crop Types
  - Root Zone Experience
- Next Steps
  - Written Comments by January 31st
  - Final Posting in the SMMR no later than March 1st

Discussion on Thresholds

INFORMATION AND DATA EXCHANGE
**Information & Data Requested**

- At the last meeting you wanted…
  - Monitoring well screen depths and other well parameters
  - Ground elevations for wells and fields
  - Plots of sensitive areas
  - Additional wells to fill gaps
- Here’s what we developed
  - Thresholds TM & Plots – on the website
  - Updated Well Atlas – January 26
  - New wells for this year described today

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**Information & Data Needs Discussion**

- Is there more information available for…
  - Soil conditions?
    - California Soil Resources Lab at UC Davis
    - Reclamation review of site logs
  - Irrigation practices?
  - Cropping patterns?

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**Information & Data Needs Discussion**

- We’re still looking to understand…
  - Wet weather practices
    - What have you seen with the recent flows?
    - How have you changed practices in wet years?
OPERATING CRITERIA AND TRIGGERS

Operating Criteria and Triggers

- Operating Objectives
  - Release Interim and Restoration Flows
  - Avoid Adverse Seepage Impacts

- Challenges
  - The relationship of flow rates to impacts is not clear
  - We will need flow releases to learn the relationship

- Strategy
  - Incremental Approach
  - Measure Responses
  - Anticipate and Identify Limitations

Seepage Operation Components

- Monitoring Data
- Triggers
  - Flow Bench Evaluations
  - Daily Evaluations
  - Hotline Intake
- Site Visit
- Response
Flow Bench Evaluations

- Reclamation performs Flow Bench Evaluations prior to increasing flows.
- Flow Bench Evaluations include:
  - Conveyance Capacity
  - Groundwater Telemetry
  - Groundwater Manual Measurements
  - Flow Stability
  - Groundwater Projections
  - Mendota Pool Operations
  - Feedback
    - Landowners (Seepage Hotline)
    - Levee District
    - CCID
    - SLCC
- Reclamation documents evaluations at: http://www.restoresjr.net/flows/FlowScheduling/flow_scheduling.html

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)
- Reclamation documents evaluations at http://www.restoresjr.net/flows/FlowScheduling/flow_scheduling.html

Seepage Hotline Process

- 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
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

Response

- Adjust Monitoring
- Establish New Thresholds
- Set Operations Criteria
- Reduce Flows
Operations Next Steps

• Initial Feedback
  – Is the general direction and process reasonable?
  – Are there major missing pieces?

• Next Operations Steps
  – Post Operations Forms – January 31st
  – Present Forms and Solicit Feedback – February 10
  – Draft SMMP – February 18

NEXT STEPS AND FOLLOW-THROUGH

Next Steps

• Thresholds
  – Comments due January 31st
  – Incorporate Stakeholder Comments
  – Post 2011 Thresholds by March 1

• Operating Criteria and Triggers
  – Post Draft Seepage Management Forms for Comment
  – Incorporate Stakeholder Comments
  – Post 2011 Seepage Management Forms

• Integrate Sections into the 2011 SMMP
• Develop Projects to Avoid Impacts
### Milestones & Meetings

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### Action Items and Review

- **Update Action Items**
  - Revised Actions
  - New Actions

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### Meeting and Process Review

- **How are we doing?**
  - What works?

- **What needs improvement?**
Contact

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

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