Seepage and Conveyance Technical Feedback Group
Friday, February 12, 2016, 1:00 p.m. – 4:00 p.m.
San Luis Canal Company
11704 Henry Miller Avenue, Dos Palos, CA 93620
Meeting Summary

Attendees

Shelly Abajian	Office of U.S. Senator Diane Feinstein
John Baker	California Department of Fish and Wildlife (DFW)
Tom Berliner (phone)	Duane Morris
Ron Cunha	Nickel Family, LLC
Katrina Harrison	Bureau of Reclamation (Reclamation), San Joaquin River Restoration Program (SJRRP)
Gerald Hatler	California Department of Fish and Wildlife
Steven Haugen	Kings River Water Association
Mica Heilmann	Land IQ
Brian Heywood	CDM Smith
Reggie Hill	Lower San Joaquin Levee District
Stephen Lee	Bureau of Reclamation
Katie Lichty	Circlepoint
Palmer McCoy	Henry Miller Reclamation District
Nola Mitchell	CDM Smith
George Park	Lone Tree Mutual Water Company
Patti Ransdell	Circlepoint
Paul Romero	California Department of Water Resources (DWR)
Rosalie Schubert	Bureau of Reclamation
Stephanie Tillman	Land IQ

Note: This document is a summary of the discussion and questions that were raised during this meeting. This document does not provide all the information that was presented during the meeting. Refer to the presentation materials posted on the SJRRP website (http://www.restoresjr.net/get-involved/technical-feedback-meetings/seepage-and-conveyance/).

Introductions, Meeting Objectives and Agenda

Patti Ransdell, facilitator, opened the Seepage and Conveyance Technical Feedback Group (SCTFG) meeting with introductions, reviewed the agenda and discussed the purpose of the SCTFG meeting. The purpose of the meeting is to provide a restoration program update, review the almond root zone study comments and gather input on a Phase 2 report, provide an update on seepage projects, and hear a presentation from DFW on fishing regulations.

Because the San Joaquin River Exchange Contractors Water Authority meeting that occurred earlier in the morning ran late, the agenda for the SCTFG was rearranged in case any attendees arrived later.

Restoration Program Update

Katrina Harrison, Reclamation, provided an overview of the water allocated for Restoration Flows and the Restoration Administrator's (RA) recommendation of releases starting February 15, 2016. The purpose of the releases is to optimize juvenile trap and haul efforts in Reach 1.

There was a question regarding the amount of flow releases (9,445 acre-feet) required to reach 80 cubic feet per second (cfs) at Gravelly Ford after losses for the remainder of February. The 9,445 acre-feet volume was determined by the RA as the amount he thought he would use in February. Because of the allocation timing, a week of releases has been removed. It is unlikely that the full allocation will be used.

Katrina reviewed the recently completed environmental compliance documents for the SJRRP.

There was a question regarding the time period covered by the Unreleased Restoration Flow Environmental Assessment. The Unreleased Restoration Flow Environmental Assessment describes conditions for contract years 2015 and 2016. There will be future Environmental Assessments addressing Unreleased Restoration Flows in the future.

There were questions as to the length, width and depth of area where the sand removal in the Eastside Bypass (ESBP) will occur. Several feet of sand will be excavated from an approximately 1,000-foot wide and one-quarter mile long area alongside the Merced National Wildlife Refuge (NWR). These numbers may not be accurate and will need to be confirmed.

Action Item: Katrina will follow up with Reggie with a confirmation of this excavation information.

There was a question about what will be done with the sand that is removed. The construction contractor is being paid to dispose of it.

There was a question if this sand could be sold to make money. No, Reclamation is paying a contractor to remove it. There are restrictions on the sale of this material due to federal mineral rights.

Paul Romero noted that levee remediation projects could benefit from using the excavated sand. The sand would need to be stored until the levee projects are ready to go forward. Levee remediation projects may be able to use this sand as a berm on the outside of the levee toe.

Action Item: Katrina will follow up with Paul Romero on this to see if there is a long term storage spot for the sand being removed and if would be available to DWR for levee projects.

There was a question if the sand removal will start at the beginning of the Merced NWR and extend downstream. Yes, this project will remove sand inside the ESBP channel on Merced NWR property.

An attendee asked what will be released out of Friant Dam to get 80 cfs at Gravelly Ford given that there are higher losses at Reach 1. The releases will be fine-tuned over the first few days. At the time of this

SCTFG meeting the release was 103 cfs. The Friant Dam release is expected to be approximately 150 to 200 cfs.

Geotechnical Evaluation of Priority Levees

Paul Romero, DWR, provided an overview of the levee evaluations and an update on the status.

There was a discussion about the levees in Reach 4B. The current projects are focused on a passing a flow of 2,500 cfs. The left levee is not touched at this flow rate (flows remain in the low flow channel). Because flows will ultimately increase, there may be no short term levee set back projects, or a minimal project may be needed to get through the next 10 years of flows. DWR is working with Reclamation on the Reach 4B project. DWR does not want to spend money on a project that will need to be replaced. Hopefully, in the next couple months, the Reach 4B will move forward to a point where DWR can determine if any existing levees would remain for the long term. At that point DWR can make informed decisions as to how to proceed with levee remediation projects.

Seepage Project Status

Brian Heywood, CDM Smith, gave an overview of the status of the seepage projects. He reviewed the project process, prioritization process, and the status of individual projects.

There was a question asking how many people meet with the landowners. Traditionally, Katrina Harrison (Reclamation) and Brian Heywood (CDM Smith) go out in the field initially to meet with landowners. Additional staff including Stephen Lee (Reclamation), Joe Brummer (consultant) and other subcontractors may attend depending on the status of the seepage project evaluation/design process. These staff often work with Craig Moyle to set up discussions with landowners.

Brian noted that one of the dots on slide 68 was in the wrong spot. This slide will be corrected when in the presentation that will be posted to the website.

An attendee referenced a question that was asked at the last meeting about if subsidence is being addressed in seepage project prioritization. The prioritization was completed before subsidence was as significant of an issue as it is now. The parcels may be reprioritized based on new modeling that incorporates subsidence. LiDAR data (ground surface) is available but the HEC-RAS model (surface water) is not completed. Staff used the available subsidence data when developing seepage evaluations and any seepage project design work. Reclamation will be revising the prioritization when updated terrains and HEC-RAS modeling is available based on the 2015 LiDAR.

There was a question if some parcels could change priority when flows reach 3,000 cfs given subsidence. A change in priority is possible.

Fishing Regulations

Gerald Hatler, DFW, provided an overview on fishing regulations.

There was a question asking if the salmon swim all day. Yes, when travelling upstream the salmon swim to get to suitable habitat for spawning.

An attendee asked what languages the “no fishing” signs (which are available from DFW) are in. The sign includes English, Spanish, and Hmong.

It was noted that DFW is tasked with regulating illegal fishing activities on the river. DFW does have a limited number of staff available to provide enforcement.

There was a question about the fines for illegal fishing. Fines are not set by the wardens, but by the judge in court.

A meeting participant noted that when Restoration Flows achieve connectivity through the ESBP, DFW will be faced with a unique situation regarding navigable water ways. Use of the ESBP will require a new area of patrol by DFW that was not previously included.

There was a question if the regulations are year-round or seasonal. The regulations are enforced year-round.

An attendee asked if the regulations prohibit fishing for any species. The regulations only prohibit fishing for salmon. People can fish for warm water species.

There was a question about fishing in the upstream spawning reaches. The same regulations apply throughout the river. There are no specific regulations for Reach 1. The public can access the river but cannot fish for salmon. There is concern that people could be disrupting redds (spawning nests).

There was a question if there is a two steelhead trout limit below Friant Dam. Yes, two is the limit for that species throughout the river.

DFW staff noted that the public should call 911 if they have trespassing issues, not the game wardens. The local Sheriff’s department will likely be able to respond more quickly. Trespassing is a penal code violation, not a Fish and Game Code violation.

There was a question about how to tell if fishers are going for a certain type of fish. DFW staff typically take time to observe and talk to the public to understand the situation.

Seepage Easements

Katrina provided an overview of seepage easements as potential seepage mitigation projects.

There was a question about the definition of abandoned groundwater in the context of seepage easements. Water that has seeped from the river into an area that has a seepage easement is considered abandoned groundwater. This abandoned groundwater is no longer Restoration Flows, and is not under the dominion and control of Reclamation, and, therefore, is not protected under Reclamation’s water rights.

There was a question if a landowner can pump that abandoned groundwater and use it. Yes, the landowner can use the water in that way.

Katrina led the group in an exercise with a large map showing fictional parcels next to the river. She proposed different scenarios involving the location of hypothetical seepage projects (e.g., easements,

interceptor drains). The design of a seepage interceptor drain would account for high groundwater conditions due the Restoration Flows and would account for the potential presence of seepage easements on nearby properties.

There was a question if a grower can have a seepage easement and continue to farm the ground. Yes, the landowner can continue to farm the land when a seepage easement in place. When an easement is complete, the responsibility for mitigating impacts from high groundwater conditions due to Restoration Flows is no longer falls on Reclamation. The landowner can construct a drainage project on land covered by the seepage easement.

There was a question about water quality issues. Right next to river it is expected that the water quality would be pretty good. Reclamation is working with the Central Valley Regional Water Quality Control Board (CVRWQCB) regarding discharge permits for water collected in seepage drains. At this point, the simplest option for landowners may be to discharge back to the river through the Irrigated Lands Regulatory Program. Discharge initiated by Reclamation may fall under the San Joaquin River Real-Time Water Quality Management Program.

There was a question if the grower can capture water collected in an interceptor line and reuse it. Yes, the landowner can use this water if the landowner constructs the interceptor line. The landowner may also be able to discharge the water to the river if the appropriate permits are obtained.

A meeting participant noted that the water quality of drainage water could vary significantly throughout the year. When going to the CVRWQCB, it might be hard to say what the quality is going to be. Reclamation acknowledged this concept as possible. Reclamation's water quality monitoring program has collected samples at different times of the year as a means of measuring the temporal changes in water quality.

It was noted that if Reclamation installs interceptor lines, Reclamation will only pay for pumping of the lines during Restoration Flows. The landowner would have to pay for operation of the line during periods other than during Restoration Flows (e.g., during flood flows).

There was a question if Reclamation would be a PG&E customer for the electricity to run the drain pumps. Reclamation is not sure about this at this time. Electric supply may be through PG&E, the Western Area Power Administration (WAPA), or a contractor.

There was a question asking if an owner has seepage easement and can pump discharge back into river, will he still own that water after it is placed into the river. Yes, the landowner could divert the water downstream of the discharge point and use it or sell it.

There was a question about shallow water wells and if that is the same situation as far as the landowner owning the water. Yes, Reclamation must protect Restoration Flows. If a landowner installs deep pumping wells, not taking water from the river, then the landowner can put that back in the river. When there is a connected river, landowners would have a conveyance source.

There was a question if Reclamation has any say in decisions related to the quality of the water that is pumped back in the river. Reclamation is not a regulatory agency. The CVRWQCB regulates water

quality issues pertaining to the river. There was a follow up question regarding the quality of discharge water as related to fish in the river and whether this is part of the seepage easement language. This language has not been included in any seepage easement language to-date.

It was noted that Friant Water Authority (FWA) had previously expressed that FWA was not in favor of abandoned groundwater being under the control of the landowner. There was a question if disagreement with FWA is still an issue. Yes, this issue is still an outstanding item. This topic has to do with unexpected seepage losses as specified in the Settlement Agreement.

A landowner noted that the name used (i.e., tile line, interceptor line, well) matters. The name depends on how the CVRWQCB handles it as each name has its own rules and regulations. Katrina noted that it is important that projects not be constructed that would induce additional seepage of Restoration Flows from the river.

Katrina suggested that landowners who are considering installing an interceptor line coordinate the design and installation with SJRRP staff, including specifically Reclamation, who may have hydraulic conductivity test data and groundwater monitoring data to share, and also DWR, who may be interested in cost-sharing in areas with levee stability issues.

There was a question if it is the current rule that any interceptor lines have to be at least 50 feet from mid-water mark of the river. There are no set guidelines. The Central Valley Flood Protection Board regulates the placement of interceptor lines so as to not compromise levee stability for properties with Project levees. The distance can depend based on the condition of the levee. Reclamation assumed the installation of a proposed drain on a property in Reach 4A would be 50 feet from the landside toe of existing levee.

There was a question if anything can be done with the levees before the Reach 4B flow routing decision is made. There are no levee setbacks in Reaches 3 and 4A. In Reach 4B, Reclamation is working to define a preferred alternative in the near future as part of the Reach 4B project that would inform short-term levee actions.

Katrina discussed the potential alignment of the levees along the ESBP that is being considered as part of the Reach 4B project.

Shelly noted that Senator Feinstein was very alarmed to hear of the potential loss of agricultural acreage for setback levees for one of the Reach 4B alternatives. Shelly agreed that use of the land within the Merced NWR for setback levees would reduce the amount of agricultural land that would go out of production.

There was a question asking if the levee extension into the refuge was done, would the upstream portion of the Eastside Bypass still be set back. Katrina did not have the complete information from the potential Reach 4B alignments available at this meeting to fully answer this question.

Almond Root Zone

Stephanie Tillman and Mica Heilmann, Land IQ, provided an overview of the Phase 1 and Phase 2 reports for the Almond Root Zone Study.

It was noted by a meeting attendee that during harvest time, the trees are not watered. The top 4 feet of soil will dry out, but the tree is still alive. A root zone depth of 4 to 6 feet is important to maintain the tree health during harvest. The attended noted that capillary fringe is an important aspect of this 4 to 6 foot depth. He noted that any seepage that pushes salt up even in to this zone could put additional stress on the tree.

Stephanie/Mica noted that the 5 to 6 feet of root zone being discussed is the protective zone that is always aerated. This zone will always be protected. Below that is capillary fringe that moves up and down. The capillary fringe would not move into the protective zone.

There was a question asking what time of year the almonds are harvested. Harvesting occurs for about 60 days between August and October. A meeting attendee also noted that a stress period is also applied to almond trees during the hull split period (July). During these stress periods, the tree is not growing, but needs deep moisture to maintain itself.

Mica reviewed the comments received on Phase 1 of the Almond Root Zone Study.

A meeting attendee noted that if that groundwater rises in the spring, it will bring salts up. The salts can only be pushed back down through leaching, which could not be done during growing season, so the salts would stay there.

There was a question if the design root zone depth for seepage projects will be consistent throughout the whole area. Yes, root zone depths will be consistent for areas planted in almonds. The root zone portion of an agricultural groundwater threshold is crop specific. The capillary fringe portion of the threshold may vary based on soil conditions.

A meeting attendee stated that the groundwater should be kept below the root zone and capillary fringe. Reclamation plans to maintain groundwater levels below the established groundwater threshold. The agricultural groundwater threshold is set by adding the root zone depth and the capillary fringe thickness.

It was clarified that 6 feet is the depth of the root zone portion of the threshold, not to groundwater. In addition to the root zone area, there is a buffer to allow for capillary rise. The groundwater level would be below that capillary fringe. It was noted that finer soils typically require a thicker fringe. Sandy soils are the opposite.

It was also clarified that the root zone depth of 6 feet that has been suggested is based on the recommendations of experts from the University of California Cooperative Extension (UCCE). UCCE experts recommend a root zone of 3 to 5 feet. Reclamation has increased this recommendation to 6 feet.

Katrina reviewed the possible revisions to the Seepage Management Plan (SMP) based on the results of the Almond Root Zone Study. These changes would apply in 2017 or not until future years, depending on a potential Phase 2 study.

There was a question of what the groundwater level threshold is now. The current agricultural threshold for almonds is 9.5 or 10 feet. This depth includes a root zone of 9 feet and a capillary fringe of 0.5 or 1 foot (depending on the soil type).

There is concern from a grower standpoint that interceptor drains may not be able to handle groundwater rise. The growers want the root zones to be conservative. Land IQ stated that this is where design comes in. Proposed interceptor lines are being design for an assumed flow of 4,500 cfs in the river. The invert of an interceptor line is not typically set at the threshold. The design of an interceptor line needs to account for factors such drawdown into the drain line and slope of the line to the collection sump. Therefore, the invert of an interceptor line is typically at least one foot deeper than the threshold.

Katrina provided a discussion on how thresholds impact the operation of the SJRRP and the release of Restoration Flows. She noted that there are several control points (e.g., Friant, Mendota, and Sack Dams) where Restoration Flows can be regulated.

One of the meeting attendees raised concerns about the possibility of phytophthora. When a properly designed drain is in place, the chance of saturating the 6 foot root zone is more related to flows other than Restoration Flows (e.g., flood flows, irrigation, leaching, rain, etc.).

Brian noted the threshold will likely be consistent across a property. An interceptor line will not be designed specifically to a specific tree, but rather to protect the full property. The design aspects mentioned previously (slope of pipe, etc.) will be accounted for during the design process.

There was a question about redefining threshold in the SMP and if it will change current flow restrictions. Katrina stated that no thresholds were being changed for 2016. Any changes to the SMP related to almond thresholds would be for 2017. However, these changes may not affect flows in the river until approximately 2019. This time is when flows may be sufficiently high (1,300 cfs) so as to affect properties planted in almonds. However, the recent LiDAR data could change the properties prioritized and cause the change to affect flows sooner than 2019.

An attendee thought it would be good to make Phase 2 a field study on capillary fringe. The attendee does not believe that the appropriate capillary fringe information is available yet. The attendee felt a study would be appropriate unless the threshold was going to very conservative, such as 9 to 10 feet.

There was comment raised that there can be a lot of studies performed that may well return to the same conclusion of a 9 to 10 foot threshold.

A meeting participant noted that with all these studies, Restoration Flows will likely occur sooner than the Phase 2 information would be available. While the information would be interesting to know, there is so much uncertainty that there is a point where things need to be done so projects can be completed. It may be better to just take conservative side, rather than trying to set a less conservative threshold.

A meeting attendee suggested that Reclamation consider that the establishment of thresholds may make the operation of orchards more difficult. An example was discussed by the attendee: if a field has a historic root zone level of 10 feet and a threshold shallower than 10 feet would potentially remove management flexibility that the grower has previously had. While the threshold may meet scientific

criteria, it may change the management techniques available to the grower. More management may be needed to produce the same amount of crops.

Wrap Up

There will likely be another meeting to gather more input on the Phase 2 of the Almond Root Zone study

Action Items

- *Action Item: Katrina will follow up with Reggie with a confirmation of the excavation area for the ESBP sand removal project.*
- *Action Item: Katrina will follow up with Paul Romero on this to see if there is a longer term storage spot for the sand being removed from the ESBP and if that material would be available to DWR for levee projects.*