

Middle Rio Grande Endangered Species Act Collaborative Program
PHVA/Hydrology Ad Hoc Work Group Meeting
October 26th, 2010
9:00am – 11:00am
Reclamation

MEETING SUMMARY

Decisions

- The revised August 10th, 2010 meeting minutes were approved with no changes.
- With a pending confirmation that the City's agreement with MRGCD to keep a certain amount of water in the diversions in the 1990s was incorporated, the Water Operations Calendar was considered final.
- Due to time constraints and the need to get model runs completed, the PHVA/Hydrology work group agreed to keep the current parameters in URGWOM for computing P&P storage. The work group will follow up with BIA to reach agreement and coordinate the policy to use in future model versions.
- With the incorporation of the newest ACAP tables, the latest version of URGWOM will be considered final and model runs will commence.

Recommendations

- It was suggested that final model and model runs being completed be presented/described to at least the Executive Committee and to the Service.
- It was suggested that a request be made to the Service for Jen Bachus to regularly attend the PHVA/Hydro work group (if only as a starting place until the Service can find a more permanent representative to replace Paul Tashjian).

Actions

- ✓ Tetra Tech will check for the original email regarding the location of the River Eye's report location on the Program's website and will resend. (*completed 8:36am 10/27/10*)
- ✓ Tetra Tech will send Terina Perez the PHVA/Hydro Water Operations Calendar. (*completed 3:26pm 10/26/10*)
- Terina Perez will investigate if there is a need or request to have a refresher on PHVA/Hydro work group activities and modeling and will report back to the work group.
- Leann Towne will confirm if the City's agreement with MRGCD (to keep a certain amount of water in the diversions in the 1990s) was incorporated into the water operations calendar.
- Terina Perez will forward the list of URGWOM output slots to the PVA work group with a specification that is "for your information."
- Craig Boroughs will incorporate the newest ACAP tables into the model.
- Leann Towne will email the 2003 Storage Spreadsheet (for the methodology) and the 2002 Forecast Volumes to Craig Boroughs for reference in the model P&P calculation description.
- Craig Boroughs will write up a description of the model's P&P calculation process.
- Marc Sidlow and Stephen Kissock will inform William DeRagon of the URGWOM updates/changes and that new runs are expected soon for the Pre-ESA Management scenario and the scenario with the 2003 BiOp targets with all PHVA flow tools along with the companion unlimited supply runs.

- Nabil Shafike, Marc Sidlow, and Craig Boroughs will revise the initial conditions in the model to estimates for end of 2010 conditions based on current conditions and the projected movement of water and adjustments for the remainder of the year.
- Work group members were asked to consider “how” flow tool sensitivity analyses could be completed or should be accomplished in preparation for further discussion at the December 8th meeting.

Meeting Summary

- Leann Towne brought the meeting to order. The revised August 10th, 2010 meeting minutes were approved with no changes.
- It was agreed that several of the ongoing or previously uncompleted action items will be deleted from the list as they are no longer appropriate or needed. The status of several actions will be investigated; the remaining actions were completed as assigned.
- Attendees briefly discussed the concern over lack of FWS representation at the PHVA/Hydrology work group meetings and the need for FWS to have a broad understanding of the basic system operations and the potential catastrophic situations that could arise if the system were left “natural.” It is extremely important to make sure that open communication is actively occurring between the Service and the PHVA/Hydro work group. One possible suggestion was to present assumptions and policy represented in the final model and results from the near-term model runs as an alternative to a comprehensive refresher.
- The operations calendar was approved “as is” with the caveat that it could be modified or updated as needed in the future.
- In a presentation on the model status, Craig Boroughs highlighted the recent updates to the model. Several changes have been incorporated into the Planning Model and ruleset since the previous Pre-ESA Management runs were completed; these changes include: (1) Correction to the Usable Storage Calculation; (2) Flexibility for Modeling Relinquished Credits; (3) Edits to Calculation of Potential Shorted Diversions; and (4) a Few Other Small Edits. Some changes involved switching previously “hard coded” parameters in the rules to “user input” values, thus allowing for more flexibility for the model user. Please refer to the actual presentation for more detail.
 - With the incorporation of the newest elevation-area-capacity (ACAP) table(s), the latest version of the model will be considered final and model runs will commence.
- After a review and discussion, attendees confirmed that the model is fine in regards to the Prior and Paramount (P&P) storage calculations and predictions. Due to time constraints and the need to get model runs completed, the PHVA/Hydrology work group agreed to keep the current parameters in URGWOM for computing P&P storage. The work group will follow up with BIA to reach agreement and coordinate the policy to use in future model versions. A one-page description document will be drafted to provide clarification on the current approach and justification for this decision.
 - The work group agreed to (1) revise the initial conditions in the model to estimates for end of 2010 conditions based on current conditions and the projected movement of water and adjustments for the remainder of the year; (2) modify the assumed volumes for annual Reclamation leases of San Juan-Chama Project water to 12,000 ac-ft per year for the first 5 years and then decreased to 8,000 ac-ft per year for the last 5 years (this modification is based on updated estimates for supplemental water that will be available); and (3) the initial unused allocation for storage of Emergency Drought water for ESA will be set to the current level (30,500 ac-ft).
 - With these changes, the URGWOM Tech Team will begin modeling the 2003 BiOp targets with all the PHVA flow tools along with the companion unlimited supply runs for each of the five synthetic hydrologic sequences. Simulations for the Pre-ESA Management scenario will also be completed with the final model using each sequence.

The results of these runs will be provided in advance of the December 8th meeting to allow members sufficient review time.

- Work group members were asked to consider “how” flow tool sensitivity analyses could be completed or should be accomplished. The sensitivity analyses will likely be the next model runs completed.

Next Meeting

- Wednesday, December 8 from 9:00am for 2:00pm with lunch break; Reclamation San Juan Room
 - Tentative agenda items: (1) review and discuss results from model runs for the Pre-ESA Management scenario and the scenario with the 2003 BiOp targets with all the PHVA flow tools along with the companion unlimited supply runs; (2) discuss how to proceed with sensitivity analyses of flow tools.

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MEETING NOTES

- **Introductions**
 - Leann Towne opened the meeting and introductions were made.
- **Agenda Review and Announcements**
 - The agenda was approved with no changes or additions.
 - Members were reminded that Valda Teraud's last day was this past Friday; she is transferring to Reclamation's Loveland, Colorado office. Dagmar Llewellyn will start as a Reclamation employee on November 7th; she will work in the water operations group and be assisting with the adaptive management plan development.
- **Approve August 10th, 2010 meeting minutes**
 - The revised August 10th, 2010 meeting minutes were approved with no changes.
- **Review Action Items from August 10th meeting**
 - Valda Terauds will forward the email with the River Eye's report location on the Program's website for Tetra Tech to distribute to the work group. – *unknown status*;

Action: Tetra Tech will check for the original email regarding the location of the River Eye's report location on the Program's website and will resend.

- David Gensler to provide MRGCD's archived hard copies of their Board of Director's Summary Notes for information and comments on Article VIII releases in the 1940s and 1950s to Nabil Shafike. (*modified action from 05/18/10*). – *incomplete*;
 - After discussing this action, the work group agreed that the action was no longer necessary as the model revisions/updates have moved forward and are on today's agenda for approval for finalization. This action will be deleted.
- Jim Wilber will continue to facilitate a joint work group meeting between the PHVA/Hydrology and PVA work groups, as needed and appropriate. – *ongoing*;
 - Jim will continue to coordinate a joint work group meeting so the work group agreed that this action doesn't need to be continued monthly. This action will be deleted.
 - In an update on coordination and communication, it was shared that the State briefly met with the Service to discuss positions primarily regarding the 2003 BiOp flow targets as the "baseline" and the perception that the Service wants the 2003 BiOp flow targets to be the "starting point" on which to build (increase). One of the important outcomes of the meeting was a concern that there is a disconnect between water resource management and basic knowledge of how the system works. Additional communication between this work group and the Service is a necessity to ensure everyone is on the "same page."
 - Unfortunately, Paul Tashjian will no longer be available to participate in this work group. If the Service's representation on the work group cannot be replaced quickly, the work group may need to find other ways to continue communication.
 - Basic knowledge of the system should include understanding of "natural" drying and what the river would look like if no one was irrigating and no supplemental water was being released. Everyone needs to be on the "same page" regarding where the current targets work and don't work. As long as Reclamation is

meeting the flow targets, there is a lack of concern. However, there needs to be broad understanding of where catastrophic situations could arise if these activities ceased. While the work group will be using the model to try to answer these types of questions for planning purposes, there still needs to be regular communication with the Service prior to the model results being presented.

- Leann Towne will schedule a smaller PHVA/Hydrology refresher for new Program members and other key individuals. – *ongoing*;
 - Attendees expressed concern with the loss of a regular Service representative, especially with assistance in “bridging” communication and understanding between the PHVA and PVA work groups. It was suggested that a request be made to the Service for Jen Bachus to regularly attend the PHVA/Hydro work group (if only as a starting place until the Service can find a more permanent representative to replace Paul Tashjian).
 - The intent is to try to establish a model version today for analyses; once done, assumptions and policy represented in the final model will need to be presented and described to the Service along with discussion of results from simulations for the Pre-ESA Management scenario and the scenario with the 2003 BiOp targets and all flow tools along with the companion unlimited supply runs.
 - After discussing the original intent of the refresher, the work group decided that a refresher was not needed at this time; instead, future “sessions” or meetings will be organized to describe/present the final model and model runs completed so far.

Action: Terina Perez will investigate if there is a need or request to have a refresher on PHVA/Hydro work group activities and modeling and will report back to the work group.

- Andrew Lieuwen will provide Valda Terauds with information regarding the City’s agreement with MRGCD to keep a certain amount of water in the diversions in the 1990s for inclusion in Operations Calendar. – *unknown status*;

Action: Leann Towne will check to determine if the City’s agreement with MRGCD (to keep a certain amount of water in the diversions in the 1990s) was incorporated into the water operations calendar.

- ✓ Valda Terauds will email the Operations Calendar in spreadsheet format to Tetra Tech for distribution to the PHVA/Hydro work group members. – *complete*;
- ✓ Any additional water operations information that should be included in the Operations Calendar is due to Valda Terauds no later than August 25th. – *complete*; although no additional information was received;
- ✓ Craig Boroughs will re-distribute the final version of the Key Points Summary Document to PHVA/Hydro members. – *complete*;
- ✓ Leann Towne will contact BIA to (1) determine who will be replacing Randy Shaw as the PHVA/Hydro representative and (2) to propose to keep the P&P rules in the model as is for now. – *complete*;
 - BIA has an interim or “acting” replacement in Randy’s vacant position but it will take a while to permanently fill it. It is unknown when a representative from BIA will be able to participate in the PHVA/Hydro work group.
- ✓ Warren Sharp will meet with the URGWOM Tech Team to develop a list of output slots for Dr. Goodman and David Gensler to select which outputs are needed in ASCII. – *complete*;
 - It is assumed that Dr. Goodman and David Gensler will not need all of the provided URGWOM output slot information but they can indicate which series they are interested in having. The table referenced in the description column, with approximate locations of the subreaches relative to benchmarks in the Middle Valley, was already provided to the PVA work group with the Key Points document.

Action: Terina Perez will forward the list of URGWOM output slots to the PVA work group with a specification that is “for your information.” .

- ✓ Valda Terauds will provide the input on scope of work for modeling to Jericho Lewis. – *complete*;

- **Final Operations Calendar**

- After a brief description, the Operations Calendar (spreadsheet) was approved “as is” with the caveat that it could be modified or updated as needed in the future.

- **Model Status**

- The last Pre-ESA Management runs were completed in January (2010). Since that time, several modifications have been incorporated into the planning model and ruleset. Changes include: (1) correction to the Usable Storage Calculation; (2) flexibility for Modeling Relinquished Credits; (3) edits to the Calculation of Potential Shorted Diversions; and (4) a few other small edits.
 - A review of losses and gains along the reach from the San Marcial gage to Elephant Butte Reservoir is ongoing, but no changes are proposed to be included in the final model version. It was noted that the model tends to overestimate losses from San Marcial to Elephant Butte as the model approach does not account for local inflows along the reach. The inflows appear to be too low during spring runoff; and during the summer, any inflows from monsoon events and other ungaged inflows are not included. This discrepancy has resulted in some months being predicted as out of Article VII when Article VII should be in effect. Due to time constraints and the need to get model runs completed, it is not feasible to address this issue now, but the URGWOM Tech Team will work on corrections for the long-term.
 - The equation for computing usable storage, for evaluating Article VII status, was corrected to not subtract the account storage for Compact credit if the credit is negative (i.e. there is a debt).
 - Rules for Relinquished Credits and storage of Emergency Drought water were recoded to add flexibility. Rules were previously hard coded for relinquishments to occur on January 1st – but now the date can be input. Previously, the usable storage was not updated until the end of the year following a relinquishment but now computed usable storage updates at the time of a relinquishment.
 - Other parameters that were hard coded into the rules were modified to allow user flexibility and input: (1) the thresholds for when a relinquishment occurs (100,000 acre-ft Credit) and the target Credit after a relinquishment (70,000 acre-ft); and (2) proportions for distributing allocations for storage of Emergency Drought water (33% MRGCD, 33% ESA, 33% municipalities).
 - Rules used to set shorted MRGCD diversions to prevent supplemental water from being diverted were edited.
 - Code was edited to short requested diversions at Angostura with consideration for potential increases to the diversions for P&P operations, which occurs when the available supply in storage for MRGCD is less than the daily MRGCD demand at Cochiti. Also, diversions at San Acacia are now appropriately shorted from the initial request which is curtailed for contributions from the Unit 7 drain.
 - Some of these “issues” were not identified earlier because the rules were not executing for the Pre-ESA Management run since there are no targets or supplemental water included with that scenario.

- Several other additional model edits were incorporated:
 - When checking storage at Elephant Butte for identifying whether a spill condition is in effect that would zero out the Compact credit, if the account storage is negative, then the Compact Credit accounts for New Mexico and Colorado are not subtracted from the total storage.
 - Related to the San Marcial to Elephant Butte Reach, the table that relates the riparian area to the Elephant Butte pool elevation was adjusted to match the same datum used with the Elephant Butte data.
 - The work group made a decision in 2008 to not introduce the new elevation area capacity (ACAP) tables to the Planning Model from the recently completed reservoir sedimentation surveys (due to time constraints and the assumed minimal effect of the changes); however, it was suggested that the updated tables could now be incorporated. It will not be a problem, with confirmation that the datums are consistent (ex. could increase the storage in El Vado by maybe 500ft).

Action: Craig Boroughs will incorporate the newest ACAP tables into the model.

- Rules were edited for setting additional allocations of San Juan-Chama Project water to contractors at Heron Reservoir on July 1st when full allocations could not be made on January 1st. An error was discovered and corrected regarding the possible situation where there is still not enough of water in storage on July 1st to make full allocations.
 - The Tech Team is still reviewing potential edits to the accounting configuration in URGWOM for representing letter water deliveries. Changes may be implemented as part of a longer-term effort to complete some overall changes to the accounting configuration to improve simulation efficiency but the work group agreed that what is in the model is fine for now so those changes will not be completed for this process.
 - Currently in the model, letter water deliveries are sent down the river (based on contractor schedule and debt) and are counted toward meeting MRGCD's demand. Releases from storage to meet the MRGCD demand are curtailed for any contributions from letter water deliveries. There are no complicated transfers or exchanges represented as actually occur at times.
- **Status of P&P potential changes for URGWOM**
 - There was concern that the model was not using the correct forecast for computing P&P storage, but after briefly discussing this concern and projecting a few example graphs (ex. 90% exceedence sequence, year 7) it was agreed that the model is working fine as currently set up. It was emphasized that there is a difference between the computed storage requirement and the resulting storage. Actual storage may not reach the storage requirement if the inflows are not available, but the separate storage requirement can be checked in the model. Even if there is a high storage requirement, that doesn't necessarily mean there will be enough water to meet the need. Based on a review of the computed storage requirement, the model output matches the spreadsheet; however, there is a need to document for BIA that the model is indeed working fine based on the monthly demands from 2003.
 - The justification document should be a single page of text that describes how the model computes a forecast volume and why the model might not show high resulting storage in certain, anticipated years. There could be references to the spreadsheet and model slots to support the assertion that the model is working properly based on the 2003 storage spreadsheet.

- The work group agreed to not change the P&P rules in the model for now and any future change will require an agreement between BIA and Reclamation.

Decision: Due to time constraints and the need to get model runs completed, the PHVA/Hydrology work group agreed to keep the current parameters in URGWOM for computing P&P storage. The work group will follow up with BIA to reach agreement and coordinate the policy to use in future model versions.

Action: Leann Towne will email the 2003 Storage Spreadsheet (for the methodology) and the 2002 Forecast Volumes to Craig Boroughs for reference in the model P&P calculation description.

Action: Craig Boroughs will write up a description of the model's P&P calculation process.

- **Model Runs and Timeframes**

- *Model Runs*

- The Corps' draft BA is expected by the end of the year; they are still working off the January Pre-ESA Management model runs.
 - Each 10-year model run takes about 2 ½ hours and there are 15 runs to be completed. It was agreed that the next meeting would be scheduled to allow for individual member review of the model outputs in preparation for the meeting.
 - Attendees discussed the Consultation Team's desire to be able to compare and contrast with the 2003 BiOp requirements. Thus there need to be 2003 BiOp runs with just current flow tools.
 - The Service is very interested in the results with an unlimited supply component included but the runs with the flow tools are needed for the work group and the Program.
 - Members agreed to do the unlimited supply and 2003 BiOp with all PHVA flow tools (low flow pumping, alternate letter water delivery schedules, Relinquish Compact credits, Cochiti deviations through 2013, leases with new lease volumes) model runs first. Subsequent runs to complete sensitivity analyses for the flow tools will be decided upon later.

- *Timeframes*

- It is estimated that it will take less than a month to redo the initial conditions and complete the agreed upon runs.
 - It was suggested that the next model runs be for "sensitivity" analyses for Relinquished Credits and other flow tools. Work group members were asked to consider "how" flow tool sensitivity analyses could be completed or should be accomplished in preparation for further discussion at the December 8th meeting.

- *Initial conditions*

- The work group agreed to revise the initial conditions in the model to estimates for the end of 2010 conditions based on current conditions and the projected movement of water and adjustments for the remainder of the year; modify the assumed volumes for annual Reclamation leases of San Juan-Chama Project water to 12,000 ac-ft per year for the first 5 years and then decreased to 8,000 ac-ft per year for the last 5 years (this modification is based on updated estimates for supplemental water that will be available).
 - The initial unused allocation for storage of Emergency Drought water for ESA will be set to the current level (30,500 ac-ft).

Action: Nabil Shafike, Marc Sidlow, and Craig Boroughs will revise the initial conditions in the model to estimates for the end of 2010 conditions based on current conditions and the projected movement of water and adjustments for the remainder of the year.

Action: Marc Sidlow and Stephen Kissock will inform William DeRagon of the URGWOM model updates/changes and that new runs are expected soon for the Pre-ESA Management scenario and the scenario with the 2003 BiOp targets with all PHVA flow tools along with the companion unlimited supply runs.

Action: Work group members were asked to consider “how” flow tool sensitivity analyses could be completed or should be accomplished in preparation for further discussion at the December 8th meeting.

- **Modeling Contract Status**
 - A modeling contract is in place.
- **Next Steps**
 - The Consultation Team is identifying what question and analyses they want the PHVA and PVA to address.
- **Next Meeting**
 - Wednesday, December 8 from 9:00am for 2:00pm with lunch break; Reclamation San Juan Room
 - Tentative agenda items: (1) review and discuss results from model runs for the Pre-ESA Management scenario and the scenario with the 2003 BiOp targets with all the PHVA flow tools along with the companion unlimited supply runs; (2) discuss how to proceed with sensitivity analyses of flow tools.

PHVA/Hydro Work Group 26 October 2010 Meeting Attendees					
NAME	POSITION	AFFILIATION	PHONE NUMBER	EMAIL ADDRESS	Primary, Alternate, Other
Craig Boroughs	Tech Team	Contractor (BOR)	970-513-4459	boroughs@bhandh.com	O
Stephen Kissock	PHVA/Hydro Co-Chair	COE	342-3291	stephen.r.kissock@usace.army.mil	P
Nabil Shafike	Tech Team	ISC	383-4053	nabil.shafike@state.nm.us	O
Leann Towne	PHVA/Hydro Co-Chair	Reclamation	462-3579	ptowne@usbr.gov	P
Marc Sidlow	Tech Team	COE	342-3381	marc.s.sidlow@usace.army.mil	O
Rolf Schmidt-Petersen	PHVA/Hydro Member	ISC	764-3880	rolf.schmidt@state.nm.us	P
Terina Perez	PMT	Reclamation	462-3614	tlperez@usbr.gov	O
Marta Wood	Admin Support	Tetra Tech	(c) 259-6098	marta.wood@tetrattech.com	O