

January 25, 2001

**San Juan River Basin
Recovery Implementation Program
Hydrology Committee
September 26, 2001
Meeting Summary**



Members/Alternates Present:	Representing:
Ray Alvarado	State of Colorado
Steve Cullinan	U.S. Fish and Wildlife Service
Dave Frick	Jicarilla Apache Nation
Mike Hamman	Jicarilla Apache Nation
Steven Harris	Water Development Interests
Randy Kirkpatrick	Water Development Interests
Bill Miller	Southern Ute Indian Tribe
Randy Seaholm	State of Colorado
John Simons	U.S. Bureau of Reclamation
Pat Turney	State of New Mexico
Brian Westfall	Bureau of Indian Affairs

Others present:	Representing:
Shirley Mondy, Program Coordinator	U.S. Fish and Wildlife Service
Marilyn Greenberg, Program Assistant	U.S. Fish and Wildlife Service
Ty Arikan	U.S. Fish and Wildlife Service
April Fitzner	Water Development Interests
Dave King	U.S. Bureau of Reclamation
Paul Martin	City of Farmington
Pat Page	U.S. Bureau of Reclamation
Bernadette Tsosie	Navajo Nation

Welcome and Introductions by John Simons and Dave King, filling in for Errol Jensen.

Review and Approve Agenda (Attachment 1):

The agenda was approved. In addition, the members present agreed to set tentative meeting dates for 2002. ***The Hydrology Committee will finalize the meeting dates (tentatively listed below) and set conference calls on the Nov. 27th meeting.***

The next meeting will be a conference call scheduled for Nov. 27, 2001, 10am - noon.

Future meeting dates include Tuesday, March 12, 2002, Tuesday, June 11, 2002, and Tuesday, October 22, 2002.

Report on Navajo Reservoir Operations Low Flow Test

The report is still in draft form and under review by Reclamation, so it has not been released yet. It appears that the reservoir can be operated at 250 cfs and that will probably be Reclamation's preferred plan for Navajo EIS.

The report should be out within the next few weeks. ***When it is available, John Simons will send out copies, or get a copy to Shirley to send out or to link to our website.*** A preferred operating plan will come out which the committee can discuss and review in terms of defining how much flexibility there actually is. Can flows stay higher than 500 cfs? An interim operating plan is possible until the basin reaches full development. The Hydrology Committee would like to ***define what to do if what is forecast does not match the actual flows. Would we use any "extra" water for other purposes?*** (action item #29)

The Committee has time to adjust for the upper end of the 500 cfs flow regime, system spikes, and critical habitat to make it easier on the system. ***There was discussion about having a Biology/Hydrology Summit to sort out the data, impacts, and extent of our flexibility.*** (action item #30)

Review Notes and Action Items from July 25 Conference Call

The July 25, 2001 Conference Call Summary was approved. ***It will be updated on the website.***

Model Progress - Report from Technical Discussions Held on 9/25/01

Dave King reported on testing of StateMod return flow lagging, comparisons between StateMod and RiverWare, testing of StateMod water rights procedures, and testing of building a RiverWare model from a StateMod mode. He also reported on the proposed modeling approach that was discussed on 9/25/01 by a technical sub-team.

Regarding the testing, Dave King reported that RiverWare reproduces StateMod return

flow lagging faithfully although small differences exist due to flow and volume conversion differences. He reported that it is also possible to emulate StateMod water rights procedures, although inefficiently. Dave King developed a means of building a RiverWare model from a StateMod that will correspond exactly to the StateMod model in configuration. Based upon knowledge gained from the testing and the ability to build a node equivalent RiverWare model, he proposed a modeling approach to the technical sub-team that incorporates the StateMod configuration and naturalized flows into a monthly simulation model of the basin. The output of the monthly simulation model would serve as input data to a daily decision model.

Colorado requested that Reclamation use Colorado bypass values for the San Juan Chama Project. Reclamation bypass values were used in the existing model because they reproduce historic operations exactly.

Although the sub-team concurred with the proposed modeling approach, the committee requested that additional information be provided for committee members not present at the sub-team meeting. Dave King agreed to provide this (Action Item 24). Additional discussion on the decision model configuration and modeling approach is on page 4.

Brian Westfall has been working on the gage collection study to determine whether there is a need to correct the Bluff gage versus the upper gages. After looking at the methods used in the beginning, Keller-Bliesner could not justify correcting the gages. In looking at a copy of the error analysis for the Bluff gage, if the ratios for all of the gages were in the upper or lower 75%, then possibly it would be worth it to correct the Bluff gage. But the ratios have been very inconsistent and the depletions vary. The technical subcommittee agreed that it could not justify changing the USGS record based on these studies. ***The Committee still needs to determine whether big losses are due to daily disaggregation.*** (action item #31)

New Mexico submitted preliminary historic irrigated acreage data to John.

Arizona and Utah data need to be extended back to 1929 also. This would be a nice discreet task for someone in this group. Someone needs to develop the data using a spreadsheet. (action item #22) It would be better if the offstream depletions were kept separate from onstream depletions. Most additional water was shown as a gain/loss on the reach, but not as a strain on the system.

The new model operating criteria is not complete yet. The existing model fully supplies all mainstem users and would not short anyone on the mainstem. If historic water diversions downstream of Navajo were limited to inflow to Navajo, it could create shortage and free additional water to use for fishes. Currently, releases are made out of Navajo so that no one is shorted downstream.

The model will be adjusted to create 525 cfs daily. 525 cfs is based on monthly versus daily numbers. There is the flexibility to set the model up so that users can be shorted,

if needed, in the future. Reclamation needs to know New Mexico's priorities on this water - their flow and decree data. Does New Mexico have established priorities on the mainstem?

Eventually everything will be run on a daily basis, based on frozen monthly hydrology. The operations on Navajo have been tested on a monthly basis. Testing still needs to be done on a daily basis with disaggregation for the rest of the San Juan. There are no dailies available on the La Plata right now. More documentation is needed from Colorado regarding the natural flows from the basin. Dave King will get the specifics of what is needed to Ray Alvarado.

Someone asked if Keller-Bliesner Engineering review the modeling requirements to see if the new daily model gives the same information as, or different than, the monthly modeling; and will it still meet the flow recommendations? Keller-Bliesner Engineering replied that they will verify the information and how it meets the flow recommendations.

This model may not be complete for a year. The new model generates more precise tables and looks at flow versus volume data. The StateMod can now go daily as well. Two independent models are a good validation of both methods.

Gage errors could be bigger than any of these projects or depletions. It is possible to determine differences, not absolute numbers. The Service may have a need to find out impacts on species (based on full development) when they get requests for projects that will use 1000 acre feet. Can the impact be determined with the margin of error present in the model? There are 3000 acre feet (to cover 100 acre feet or less projects in NM and CO) of depletions included in the model. The model will show changes, and demonstrate impact. This will not change the error factor, but it will show the amount of change, and therefore the impact. This is a valuable tool on larger rights, but how valuable will it be for smaller depletions? The model will have to be run, at least on a portion of the basin, to determine this impact, even if it is only a new 400 cfs depletion project. Location will make a difference in determining whether the entire model will be run.

It was agreed that Reclamation is available to run the model whenever the FWS needs the information. One week is a reasonable turnaround for a model run request from FWS.

Additional discussion was held on the decision model configuration and modeling approach. **The Hydrology Committee agrees to use a model approach that has CDSS for a monthly approach in Colorado and runs daily on the mainstem, the LaPlata, in the La Plata basin, and on the Animas downstream of the ALP diversion (Durango pumping plant downstream).**

The subcommittee agreed that this method will work technically. ***The Hydrology Committee will vote to determine if it is appropriate to move forward with the***

model as proposed, and to bring up concerns for the technical subcommittee during the November 27 Conference Call (Action Item 23).

Dave King will prepare a concise summary report from the technical subcommittee for the Hydrology Committee to take back and review prior to voting at our next meeting. If anyone has questions, contact a subcommittee member and be ready to vote at the next meeting. Then the Hydrology Committee's findings and recommendations will be presented to the Coordination Committee. Each Hydrology Committee member may want to discuss this with their Coordination Committee representative and get feedback prior to voting at our next meeting.

Is there an interest in creating a disaggregation subteam to research the methods out there and describe them? There are three ways of doing this - using a key station, another gage, or the average wet year/dry year characterization. Would anyone like to help with that? (No one volunteered.)

Ray Alvarado will put the study on how Colorado did their disaggregation for both hydrologic inflows and diversions on the listserve. (action item #25) Dave King is uncomfortable with what was done on the diversion side (may be too simplistic). Dave has a couple of alternative approaches but would like other people to scope them out some more. (action item #26) There was consensus on the hydrology part of the model.

Dave King will talk with folks, one on one, and find out what they think is a reasonable approach for diversion disaggregation, then consolidate comments (pros and cons), and send it out to the listserve for comments. This will be discussed at the November meeting. The Committee would like to see the expert's opinions on the decisions so they know what went into it.

Keller-Bliesner Engineering will put together information on incidental losses for our next meeting, with a review of products for the committee's review.

Model Website Progress

The model website < <http://wcao.us.usbr.gov/envprog/sjrip/> > was moved to its official site one month ago. **The San Juan website will have a link soon.** Model printouts will print from Arcview. Eventually it will also provide some data for each point and give different output options.

There is a dedicated machine running RiverWare on the internet, so RiverWare can be run remotely if you have a good internet connection. You must have an account, an IP that does not change, and permission to access this system. In RiverWare, output is saved under objects. A text spreadsheet/table output format is possible from specific model runs. The website would contain input and output and a table can be created from the data. The website should also contain some summary output; by river basin, for instance.

Would it be better for FWS to have personal access to RiverWare versus asking the Bureau of Reclamation to run it for them? It would not be expensive to create a personal access for FWS on a \$2000 machine. It would take about 20 minutes to teach someone how to use it. Or, FWS can go to Reclamation for a RiverWare run for a section 7 consultation. \$10,000 is budgeted in the work plan for any of the San Juan Program agencies or committees to request model runs.

Upcoming Activities

At the Coordination Committee meeting on November 2, 2001, Brent Uilenberg will fill in for Errol Jensen.

Review Action Items

1. Complete incorporation of comments on model documentation.

This is a priority. The Committee wants at least one version of the model that has good documentation. ***John Simons and Brian Westfall will provide this by the November 27th meeting, and will provide feedback to commentors as well.***

2. A letter to the water districts is done, but not sent

3 & 9. Draft Progress Report was due the end of July - from the Hydrology Committee to the Coordination Committee. Colorado and Keller-Bliesner will provide information to Errol Jensen for the Progress Reports. Ray Alvarado will send a paragraph to Errol Jensen next week to facilitate completion of this task. Just a general summary is needed on what has been done to date on the model for the Coordination Committee. ***Errol was going to come up with a table of product deliverables with products/outcomes and delivery dates. Someone needs to at least be prepared to answer questions on products at the Coordination Committee meeting.*** (Items 13, 14, & 15 from July 25th Conference Call Summary)

10. The Hydrology Committee would like to see the proposal on handling water rights before it is implemented. How does New Mexico envision administering water rights on the San Juan? This can be done identically to the Colorado model. How do irrigation/non-irrigation depletions fit in? It might be good to have these decisions before incorporating water rights. ***The Bureau of Reclamation will discuss with New Mexico how to administer water rights and will bring a proposal back to the committee on November 27.***

11. Forward the GIS methodology and information to New Mexico, and notify John Whipple and Pat Turney when that will happen. Data for the GIS methodology is complete. The technology transfer needs to be completed. ***Reclamation will go to New Mexico to accomplish this, if it is still needed.***

Reclamation needs to verify the budget from FY 2001 and tell us how much was actually allocated and how much needs to be carried over until FY 2001.

Meeting adjourned. The next meeting will be a conference call on November 27, 2001, from 10 a.m. until noon.

New Action Items

The Hydrology Committee will finalize the meeting dates (tentatively listed below) and set conference calls on the Nov. 27th meeting.

The July 25, 2001 Conference Call Summary will be updated on the website.

The Report on the Navajo Reservoir Operations Low Flow Test should be out within the next few weeks. *When it is available, John Simons will send out copies, or get a copy to Shirley to send out or to link to our website.*

Hydrology Committee needs to define what to do if what is forecast does not match the actual flows. Would any extra water be used for other purposes?

Schedule a Biology/Hydrology Summit to sort out the data, impacts, and extent of our flexibility.

The Hydrology Committee still needs to determine whether big losses are due to daily disaggregation.

Arizona and Utah historic irrigated acreage data need to be extended back to 1929 in a spreadsheet format.

This motion was tabled until the November meeting: **The Hydrology Committee agrees to use a model approach that has CDSS for a monthly approach in Colorado and runs daily on the mainstem, the LaPlata, in the La Plata basin, and on the Animas downstream of the ALP diversion (Durango pumping plant downstream).**

The Hydrology Committee will vote to determine if it is appropriate to move forward with this model as proposed, and to bring up concerns for the technical subcommittee to work on at the November meeting.

Dave King will prepare a concise summary report from the technical subcommittee for the Hydrology Committee to take back and review prior to voting at our next meeting. If anyone has questions, contact a subcommittee member and be ready to vote at the next meeting.

Ray Alvarado will put the study on how Colorado did their disaggregation for both hydrologic inflows and diversions on the listserve.

Dave King will talk with folks, one on one, and find out what they think is a reasonable approach for diversion disaggregation, then consolidate comments (pros and cons), and send it out to the listserve for comments. This will be discussed at the November meeting.

Keller-Bliesner Engineering will put together information on incidental losses for our next meeting, with a review of products for the committee's review.

The San Juan website will have a link to the model website <<http://wcao.us.usbr.gov/envprog/sjrip/>> soon.

July 25 th Action Items	Responsible Party	Due Date	Status
1. Complete incorporation of comments on model documentation.	Reclamation & Keller-Bliesner	Nov. 27	
2. Write letter to the water districts. Done, but not sent.	Reclamation	Oct. 31	
3. Draft Progress Report using Dave King's information. See #9.	Errol Jensen	Nov. 2, Earlier for Review	
4. Add model runs and other information to a permanent hydrology website.	Dave King	Ongoing, Continue to Update	Done
5. Model modification briefings.	Reclamation and Keller-Bliesner	Ongoing	
6. Give Dave King and Ron Bliesner the water allocations information (in particular, non-irrigation return flow locations and depletions) from the meeting with New Mexico.	John Simons	Complete Will Fine Tune	
7. Let Brent Uilenberg know what funds will not be used this fiscal year.	Errol Jensen	Done	Done
8. Send completed FY 2002 budget to Coordinator.	Errol Jensen	Done	Done
9. Provide Progress Report information to Errol Jensen. Ray Alvarado will send paragraph to Errol. See #3.	Colorado (Keller-Bliesner has no progress to report)	Oct. 3	
10. The Hydrology Committee would like to see the proposal on handling water rights before it is implemented. The Bureau of Reclamation will discuss with New Mexico how to administer water rights and will bring a proposal back to the Committee on November 27.	Dave King	Nov. 27	
11. Forward the GIS methodology and information to New Mexico, and notify John Whipple and Pat Turney when that will happen.	John Simons		
12. Any new data or methods incorporated into RiverWare will be shared with the Hydrology Committee.	Keller-Bliesner and Reclamation	Ongoing	

13. Add a notation to the Work Plan that Items 1 - 16 will be completed (funds obligated/used) in 2001. Prepare Tables 1 and 2 for presentation to the Coordination Committee. (Use Table 3 for the Hydrology Committee only.) Table 2 needs to be revised to update the schedule.	Errol Jensen	July 27, 2001	Done
14. Verify how the \$237,000 will be spent in 2001, if much of the remaining work will be completed by Reclamation staff.	Errol Jensen		
15. Work through the details and update revised target dates for 2001 funding information and get to Program Coordinator ASAP.	Errol Jensen and Dave King	July 27, 2001	Done
16. Once the scopes of work are complete, notify the Hydrology Committee so that people can express interest in performing the work.	Reclamation	Ongoing	
17. Incorporate Product Deliverables and Delivery Dates into the Work Plan. Current tables could be updated with outcomes and a delivery date for each task.	Errol Jensen	July 27 (by Nov. 2 to Coord. Comm.)	
18. Anyone interested in attending the San Juan Congressional briefing and tour should let the Program Coordinator know.	Everyone	Cancelled	
September 26th Action Items			
19. The Hydrology Committee will finalize the meeting dates and set conference calls.	Everyone.	Nov. 27	
20. When the report on the Navajo Reservoir Operations Low Flow Test is complete, a copy will be sent to Shirley to be sent out or linked to the San Juan website.	John Simons		
21. The July 25, 2001 Conference Call Summary will be updated on the website.	Marilyn Greenberg	Dec. 1, 2001	
22. Arizona and Utah historic irrigated acreage data need to be extended back to 1929 in a spreadsheet format. If anyone is interested, please contact Dave King.			
23. The Hydrology Committee will vote to determine if it is appropriate to move forward with the model as proposed, and to bring up concerns for the technical subcommittee to work on.	Everyone	Nov. 27	

24. Dave King will prepare a concise summary report from the technical subcommittee for the Hydrology Committee to take back and review prior to voting at our next meeting. If anyone has questions, contact a subcommittee member and be ready to vote at the next meeting.		Nov. 27	
25. Ray Alvarado will put the study on how Colorado did their disaggregation for both hydrologic inflows and diversions on the listserve.	Ray Alvarado		
26. Dave King will talk with folks, one on one, and find out what they think is a reasonable approach for diversion disaggregation, then consolidate comments (pros and cons), and send it out to the listserve for comments. This will be discussed at the Nov. 27 th meeting.	Dave King	Nov. 27	
27. Keller-Bliesner Engineering will put together information on incidental losses for our next meeting, with a review of products for the committee's review.	Keller-Bliesner	Nov. 27	
28. <i>The San Juan website will have a link to the model website</i> <http://wcao.us.usbr.gov/envprog/sjrip/ <i>> soon.</i>	Marilyn Greenberg	Dec. 1, 2001	
29. Hydrology Committee needs to define what to do if what is forecast does not match the actual flows. Would any extra water be used for other purposes?			
30. Schedule a Biology/Hydrology Summit to sort out the data, impacts, and extent of our flexibility.			
31. The Hydrology Committee still needs to determine whether big losses are due to daily disaggregation.			
32.			