

Engineering Committee Report

Republican River Compact Administration

August 12, 2010

ASSIGNMENTS

At the August 12, 2009 Annual Meeting of the Republican River Compact Administration, the Commissioners assigned the Engineering Committee the following tasks:

1. Finalize work on a user's manual for the Republican River Compact *Accounting Procedures and Reporting Requirements* (RRCA Accounting Procedures, dated July 27, 2005) and provide a recommendation to the Administration for adoption at next year's annual meeting.
2. Complete exchange of data requested by Kansas in its August 1, 2008 and July 17, 2009 letters by October 1, 2009.
3. Exchange by April 15, 2010 the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that document. By July 15, 2010 the states will exchange any updates to these data.
4. Continue to review Colorado's augmentation proposal, as appropriate.
5. Continue efforts to resolve concerns related to varying methods of estimating ground and surface water irrigation recharge and return flows within the Republican River Basin and related issues. Within 90 days, the states will exchange information and the Engineering Committee will meet to recommend next steps.
6. Develop a revision to the RRCA's Accounting Procedures to reflect agreements by the RRCA at its 2008 and 2009 annual meetings, and provide the RRCA with a recommendation of any appropriate formatting changes.
7. Retain Principia Mathematica to perform on-going maintenance of the ground water model and periodic updates requested by the Engineering Committee.
8. Continue development of a five-year accounting spreadsheet/database for adoption at the 2010 annual meeting or earlier.
9. Review accounting procedures to determine if Kansas groundwater CBCU in the Mainstem is properly included in the Mainstem virgin water supply calculation and if necessary, provide a recommendation to the RRCA at the next annual meeting.

WORK ACTIVITIES RELATED TO THESE ASSIGNMENTS AND OTHER ISSUES

The Engineering Committee and technical representatives from the States of Colorado, Kansas, and Nebraska participated in several collaborative work activities and phone conferences and the following assignments and work activities were completed:

1. **Complete the user's manual for accounting procedures and provide a resolution for its adoption.**
 - a) The States reviewed the 2006 draft initiated by Kansas and provided comments. However, a final draft of the manual was not completed; the assignment should be continued next year.
2. **Complete exchange of data requested by Kansas in its August 1, 2008 and July 17, 2009 letters by October 1, 2009.**
 - a) Nebraska provided the data they had available. Remaining portion of the data request is retained in the NRD records. Nebraska believes this remaining data is not required under the FSS.
 - b) Colorado meter data was not completed. Best available data will be provided by October 15, 2010.
3. **Exchange by April 15, 2010 the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that document. By July 15, 2010 the states will exchange any updates to these data.**
 - a) Each state exchanged its model data sets by April 15, 2010 or shortly thereafter. A preliminary run of the RRCA groundwater model was developed by Willem Schreuder of Principia Mathematica and posted on the RRCA web site he maintains for the Administration.
 - b) The States exchanged their available final data by August 6, 2010. Willem Schreuder of Principia Mathematica will complete a run based on this data.
 - c) Final accounting for 2009 was not completed.
 - d) Data sets were collected by the Committee for stream flow, climate information, diversion records, and reservoir evaporation records of the three states in cooperation with the U.S. Geological Survey, U.S. Bureau of Reclamation, and U.S. Army Corps of Engineers for 2009.
4. **Continue to review Colorado's augmentation proposal, as appropriate.**
 - a) Proposal is the subject of an arbitration process. No additional information was discussed.
5. **Continue efforts to resolve concerns related to varying methods of estimating ground and surface water irrigation recharge and return flows within the Republican River Basin and related issues. Within 90 days, the states will exchange information and the Engineering Committee will meet to recommend next steps.**
 - a) Each state performed a cursory review of their respective engineering repositories for published studies/information pertaining to ground water irrigation recharge. Neither Nebraska nor Colorado found any pertinent information. Kansas assembled a bibliography of possible studies/information; however no additional progress has been made on this assignment.

6. **Develop a revision to the RRCA's Accounting Procedures to reflect agreements by the RRCA at its 2008 and 2009 annual meetings, and provide the RRCA with a recommendation of any appropriate formatting changes.**
 - a) A revised accounting procedures was drafted to reflect:
 - Changes to both the Frenchman sub-basin and the Mainstem formulas pertaining to the return flows from the Riverside Canal.
7. **Retain Principia Mathematica to perform on-going maintenance of the ground water model and periodic updates requested by the Engineering Committee.**
 - a) Each state separately contracted with Principia Mathematica.
8. **Continue development of a five-year accounting spreadsheet/database for adoption at the 2010 annual meeting or earlier.**
 - a) The assignment was not completed; the assignment should be continued next year.
9. **Review accounting procedures to determine if Kansas groundwater CBCU in the Mainstem is properly included in the Mainstem virgin water supply calculation and if necessary, provide a recommendation to the RRCA at the next annual meeting.**
 - a) Based on a review of the accounting procedures, the Engineering Committee confirmed that Kansas groundwater CBCU was missing from the Mainstem Virgin Water Supply calculations. The accounting procedures were revised to reflect the inclusion of this CBCU element in the Mainstem formula and the Engineering Committee recommends adoption of this change.

COMMITTEE RECOMMENDATION

The Committee recommends the adoption of the revisions to the Accounting Procedures that reflect the changes to the Frenchman and Mainstem subbasin formulas for the return flows of the Riverside Canal and the change to the Mainstem subbasin formula to include Kansas groundwater CBCU, as described in attachment A

The Committee recommends the adoption of the proposal to relocate the accounting point used in the RRCA groundwater model for the North Fork Republican River sub-basin to the Colorado – Nebraska state line in accordance with Art. III of the Compact, as discussed in attachment B.

ADDITIONAL ITEMS

The Engineering Committee discussed the use of provisional USGS data for the Courtland Canal, Stations 06852500, as opposed to USBR data for the same gage. It is the committee's recommendation to continue to use USGS data.

RECOMMENDED ASSIGNMENTS FOR THE COMING YEAR

The Engineering Committee recommends the Republican River Compact Administration assign the following tasks:

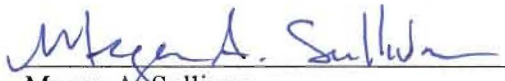
1. Finalize work on a user's manual for the RRCA Accounting Procedures and provide a recommendation to the Administration for adoption at next year's annual meeting or earlier.
2. Exchange by April 15, 2011 the information listed in Section V of the RRCA Accounting Procedures and Reporting Requirements, and other data required by that document. By July 15, 2011 the states will exchange any updates to these data.
3. Continue efforts to resolve concerns related to varying methods of estimating ground and surface water irrigation recharge and return flows within the Republican River Basin and related issues.
4. Retain Principia Mathematica to perform on-going maintenance of the ground water model and periodic updates requested by the Engineering Committee for calendar year 2011. The billable costs shall be limited to actual costs incurred, not to exceed \$15,000 in total and will be apportioned in equal 1/3 amounts to the States of Colorado, Kansas, and Nebraska respectively.
5. Continue development of a five-year accounting spreadsheet/database for adoption at the 2011 annual meeting or earlier.
6. Continue to review Colorado's augmentation proposal, as appropriate.
7. Continue efforts to finalize accounting for 2008 and 2009. By October 15, 2010, the Engineering Committee will meet to discuss issues surrounding model inputs and accounting data. Also, by October 15, 2010 Colorado will provide meter data as required under the FSS.
8. By October 15, 2010, the Engineering Committee will meet to discuss issues preventing agreement on final accounting for 2006-2009.
9. Discuss Water Short Year accounting for Beaver Creek.
10. Discuss and resolve the issue of missing precipitation data.

The Engineering Committee Report and the exchanged data will be posted on the web at www.republicanrivercompact.org.

Attachments

- A) Revised Republican River Compact Administration Accounting Procedures and Reporting Requirements
- B) Proposal to move the North Fork Accounting Point

SIGNED BY



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Engineer Committee Member for Nebraska